

**PHILIPPINE BIDDING DOCUMENTS**

**Procurement of  
INFRASTRUCTURE  
PROJECTS**

Government of the Republic of the Philippines

**Construction of RSCC Guard House and Additional  
Improvement for RSCC Building**

**Sixth Edition  
July 2020**

# Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the “Works”) through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

The PBDs are intended as a model for admeasurements (unit prices or unit rates in a bill of quantities) types of contract, which are the most common in Works contracting.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; and (iv) the obligations, duties, and/or functions of the winning Bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Works to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

- a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for bid submission*,” should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.
- d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.

- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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# *Glossary of Terms, Abbreviations, and Acronyms*

**ABC** – Approved Budget for the Contract.

**ARCC** – Allowable Range of Contract Cost.

**BAC** – Bids and Awards Committee.

**Bid** – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

**Bidder** – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

**Bidding Documents** – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

**BIR** – Bureau of Internal Revenue.

**BSP** – Bangko Sentral ng Pilipinas.

**CDA** – Cooperative Development Authority.

**Consulting Services** – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

**Contract** – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

**Contractor** – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

**CPI** – Consumer Price Index.

**DOLE** – Department of Labor and Employment.

**DTI** – Department of Trade and Industry.

**Foreign-funded Procurement or Foreign-Assisted Project** – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

**GFI** – Government Financial Institution.

**GOCC** – Government-owned and/or –controlled corporation.

**Goods** – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term “related” or “analogous services” shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

**GOP** – Government of the Philippines.

**Infrastructure Projects** – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

**LGUs** – Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**PCAB** – Philippine Contractors Accreditation Board.

**PhilGEPS** - Philippine Government Electronic Procurement System.

**Procurement Project** – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

**PSA** – Philippine Statistics Authority.

**SEC** – Securities and Exchange Commission.

**SLCC** – Single Largest Completed Contract.

**UN** – United Nations.



## ***Section I. Invitation to Bid***

### **Notes on the Invitation to Bid**

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

- a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria.

The IB should be incorporated into the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.

**Invitation to Bid for  
 Construction of RSCC Guard House and Additional  
 Improvement for RSCC Building  
 ITB 2023-DSWD-CAR-26**

1. The *Department of Social Welfare and Development-Cordillera Administrative Region*, through the *General Appropriations Act 2023* intends to apply the sum of *Six Million Six Hundred Twenty Five Thousand Pesos (PhP 6,625,000.00)*, being the Approved Budget for the Contract (ABC) to payments under the contract for *Construction of RSCC Guard House and Additional Improvement for RSCC Building* broken down as follows :

Lot No.	Project Title	Approved Budget for the Contract
1	<b>Construction of RSCC Guard House</b>	PhP 1, 525,000.00
2	<b>Additional Improvement of RSCC Building</b>	PhP 5 ,100,000.00

Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The *Department of Social Welfare and Development-Cordillera Administrative Region* now invites bids for the above Procurement Project. Completion of the Works is required:

Lot No.	Project Title	
1	<b>Construction of RSCC Guard House</b>	120 Calendar Days upon receipt of Notice to Proceed
2	<b>Additional Improvement of RSCC Building</b>	180 Calendar Days upon receipt of Notice to Proceed

Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “*pass/fail*” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from *Department of Social Welfare and Development-Cordillera Administrative Region* and inspect the Bidding Documents at the address given below from *08:00am to 05:00pm*. Likewise, interested bidders are required to secure a **Certificate of Site Inspection duly signed by the Buildings and Ground Management Section Head**, upon inspection of the project site located in Wangal, La Trinidad, Benguet.

5. A complete set of Bidding Documents may be acquired by interested bidders on **03 August 2023 to 1:00 PM (PST) 23 August 2023** from given address and website below *and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of :*

<b>Lot No.</b>	<b>Bidding Documents Fee</b>
1	Five Thousand Pesos (PhP 5,000)
2	Ten Thousand Pesos (PhP 10, 000.00)
1 and 2	Ten Thousand Pesos (PhP 10, 000.00)

**The procuring entity allows payment of bidding documents through Bank-to-Bank transaction. However, the Official Receipt shall only be issued to the bidder upon receipt of the original deposit slip by the Cash Section with the following bank details:**

**Account Number:** 0222-0218-63  
**Account Name :** DSWD FO CAR (MISC TRUST ACCNT)  
**Name of the Bank:** LANDBANK – Baguio Branch

6. The *Department of Social Welfare and Development-Cordillera Administrative Region* will hold a Pre-Bid Conference<sup>1</sup> on **11:00 AM (PST) 11 August 2023** at **DSWD-CAR Premises or Google Meet with meeting ID/Link as meet.google.com/wta-ahum-bii**, which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat at the office address as indicated below on or before **01:00 PM (PST) 23 August 2023**. Late bids shall not be accepted.

**The procuring entity allows submission through courier provided that the bid envelope will be received on or before the deadline of bid submission.**

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.
9. Bid opening shall be on **02:45 PM (PST) 23 August 2023** at the given address below **DSWD-CAR Premises** and **via Google Meet with meeting ID/Link as meet.google.com/bnz-zjbk-ctt**. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. The *Department of Social Welfare and Development-Cordillera Administrative Region* reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

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<sup>1</sup> May be deleted in case the ABC is less than One Million Pesos (PhP1,000,000) where the Procuring Entity may not hold a pre-bid conference.

11. For further information, please refer to:

***BAC SECRETARIAT***

*Procurement Section, DSWD-CAR*

*40 North Drive, Baguio City*

*bacsec.car@dswd.gov.ph*

*(074) 661-0430 Local 25025 / (02) 369-6580*

*Mobile Numbers: Smart: 0969-572-9176*

12. You may visit the following websites for downloading of Bidding Documents:

<https://car.dswd.gov.ph/downloads/procurement/procurement-opportunities/>

SGD.

**ENGR. ENRIQUE H. GASCON JR.**

BAC Chairperson

## ***Section II. Instructions to Bidders***

### **Notes on the Instructions to Bidders**

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

## 1. Scope of Bid

The Procuring Entity, *Department of Social Welfare and Development – Cordillera Administrative Region* invites Bids for the **Construction of RSCC Guard House and Additional Improvement for RSCC Building**, with Project Identification Number *ITB 2023-DSWD-CAR-26*.

The Procurement Project (referred to herein as “Project”) is for the construction of Works, as described in Section VI (Specifications).

## 2. Funding Information

2.1. The GOP through the source of funding as indicated below for **2023** in the amount of *Six Million Six Hundred Twenty Five Thousand Pesos (PhP 6,625,000.00)* .

Lot No.	Project Title	Approved Budget for the Contract
1	<b>Construction of RSCC Guard House</b>	PhP 1,525,000.00
2	<b>Additional Improvement of RSCC Building</b>	PhP 5,100,000.00

2.2. The source of funding is:

- a. NGA, the General Appropriations Act or Special Appropriations.

## 3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

#### **4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices**

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex “I” of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

#### **5. Eligible Bidders**

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.
- 5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA’s CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be “similar” to the contract to be bid if it has the major categories of work stated in the **BDS**.

- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

#### **6. Origin of Associated Goods**

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

#### **7. Subcontracts**

- 7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that:

- a. Subcontracting is not allowed.
- 7.1. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible

for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

## **8. Pre-Bid Conference**

The Procuring Entity will hold a pre-bid conference for this Project on **11:00 AM (PST) 11 August 2023** at the **DSWD-CAR Premises or Google Meet with meeting ID/Link as [meet.google.com/wta-ahum-bii](https://meet.google.com/wta-ahum-bii)**, as indicated in paragraph 6 of the **IB**.

## **9. Clarification and Amendment of Bidding Documents**

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

## **10. Documents Comprising the Bid: Eligibility and Technical Components**

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.3. A valid special PCAB License in case of Joint Ventures, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.
- 10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.
- 10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.



## 11. Documents Comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

## 12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

## 13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

## 14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

14.2. *Payment of the contract price shall be made in:*

- a. Philippine Pesos.

## 15. Bid Security

- 15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.
- 15.2. The Bid and bid security shall be valid within **120 calendar days**. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

## 16. Sealing and Marking of Bids

**Each Bidder shall submit one copy of the first and second components of its Bid.**

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

## 17. Deadline for Submission of Bids

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB**.

## 18. Opening and Preliminary Examination of Bids

18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

## 19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 15 shall be submitted for each contract (lot) separately.

19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

## **20. Post Qualification**

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

## **21. Signing of the Contract**

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

## ***Section III. Bid Data Sheet***

### **Notes on the Bid Data Sheet (BDS)**

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

- a. Information that specifies and complements provisions of the ITB must be incorporated.
- b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

# Bid Data Sheet

ITB Clause																													
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: <ul style="list-style-type: none"> <li>• <b><i>Construction or Improvement/Renovation/Repair of Buildings</i></b></li> </ul>																												
7.1	Subcontracting is not allowed.																												
10.3	PCAB license should be at least “small b” as to size range and/or at least C or D as to license category																												
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20	<i>None</i>																										
21	Additional contract documents relevant to the Project - Construction Schedule and S-curve, Manpower Schedule, Construction Methods, Equipment Utilization Schedule, Construction Safety and Health Program approved by DOLE.																										

## ***Section IV. General Conditions of Contract***

### **Notes on the General Conditions of Contract**

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Contractor, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special Conditions of Contract.



## 1. **Scope of Contract**

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

## 2. **Sectional Completion of Works**

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

## 3. **Possession of Site**

3.1 The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC**, which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2 If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

## 4. **The Contractor's Obligations**

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

## **5. Performance Security**

- 5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.
- 5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

## **6. Site Investigation Reports**

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

## **7. Warranty**

- 7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.
- 7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

## **8. Liability of the Contractor**

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

## **9. Termination for Other Causes**

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

## **10. Dayworks**

Subject to the guidelines on Variation Order in Annex “E” of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor’s Bid shall be used for small additional amounts of work only when the Procuring Entity’s Representative has given written instructions in advance for additional work to be paid for in that way.

## **11. Program of Work**

11.1. The Contractor shall submit to the Procuring Entity’s Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC**.

11.2. The Contractor shall submit to the Procuring Entity’s Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC**. If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity’s Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

## **12. Instructions, Inspections and Audits**

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor’s accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

## **13. Advance Payment**

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex “E” of the 2016 revised IRR of RA No. 9184.

## **14. Progress Payments**

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity’s Representative/Project Engineer. Except as otherwise stipulated in the **SCC**, materials and equipment delivered on the site but not completely put in place shall not be included for payment.

## **15. Operating and Maintenance Manuals**

- 15.1. If required, the Contractor will provide “as built” Drawings and/or operating and maintenance manuals as specified in the **SCC**.
- 15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity’s Representative’s approval, the Procuring Entity’s Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

## ***Section V. Special Conditions of Contract***

### **Notes on the Special Conditions of Contract**

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Works procured. In preparing this Section, the following aspects should be checked:

- a. Information that complements provisions of the GCC must be incorporated.
- b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

## Special Conditions of Contract

GCC Clause	
2	<i>Not applicable</i>
4.1	The Procuring Entity shall give possession of so much of the Site to the Contractor after a pre-construction meeting between the authorized DSWD Representatives and the Contractor.
6	Not applicable
7.2	Fifteen (15) years.
10	No dayworks are applicable to the contract.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within <b>ten (10) calendar days</b> upon receipt of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is <b>Ten Thousand (PhP 10, 000.00) pesos.</b>
13	The amount of the advance payment is fifteen percent (15%) of the Contract Value and can be availed of upon the submission and receipt of a request for the release of the advance payment after the issuance of the Notice to Proceed (NTP) and posting of an irrevocable letter of credit in favor of the procuring entity.
14	<i>Not applicable</i>
15.1	The date by which operating and maintenance manuals are required is <b><i>within 15 days upon completion of the contract.</i></b>  The date by which "as built" drawings are required is <b><i>within 15 days upon completion of the contract.</i></b>
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is <b><i>Php 15,000.00.</i></b>

## *Section VI. Specifications*

### **Notes on Specifications**

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying or conditioning their Bids. In the context of international competitive bidding, the specifications must be drafted to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of economy, efficiency, and fairness in procurement be realized, responsiveness of Bids be ensured, and the subsequent task of bid evaluation facilitated. The specifications should require that all goods and materials to be incorporated in the Works be new, unused, of the most recent or current models, and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.

Samples of specifications from previous similar projects are useful in this respect. The use of metric units is mandatory. Most specifications are normally written specially by the Procuring Entity or its representative to suit the Works at hand. There is no standard set of Specifications for universal application in all sectors in all regions, but there are established principles and practices, which are reflected in these PBDs.

There are considerable advantages in standardizing General Specifications for repetitive Works in recognized public sectors, such as highways, ports, railways, urban housing, irrigation, and water supply, in the same country or region where similar conditions prevail. The General Specifications should cover all classes of workmanship, materials, and equipment commonly involved in construction, although not necessarily to be used in a particular Works Contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for goods, materials, and workmanship, recognized international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that goods, materials, and workmanship that meet other authoritative standards, and which ensure substantially equal or higher quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the SCC.

#### **Sample Clause: Equivalency of Standards and Codes**

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified will be

accepted subject to the Procuring Entity's Representative's prior review and written consent. Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Contractor and submitted to the Procuring Entity's Representative at least twenty-eight (28) days prior to the date when the Contractor desires the Procuring Entity's Representative's consent. In the event the Procuring Entity's Representative determines that such proposed deviations do not ensure substantially equal or higher quality, the Contractor shall comply with the standards specified in the documents.

These notes are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final Bidding Documents.

**Please see attached Technical Specifications and General Conditions  
and Requirements.**



## *Section VII. Drawings*

*Please see attached Drawings/floor plans.*

## *Section VIII. Bill of Quantities*

### **Notes on the Bill of Quantities**

#### **Objectives**

The objectives of the Bill of Quantities are:

- a. to provide sufficient information on the quantities of Works to be performed to enable Bids to be prepared efficiently and accurately; and
- b. when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

#### **Daywork Schedule**

A Daywork Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Entity of the realism of rates quoted by the Bidders, the Daywork Schedule should normally comprise the following:

- a. A list of the various classes of labor, materials, and Constructional Plant for which basic daywork rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a daywork basis.
- b. Nominal quantities for each item of Daywork, to be priced by each Bidder at Daywork rates as Bid. The rate to be entered by the Bidder against each basic Daywork item should include the Contractor's profit, overheads, supervision, and other charges.

#### **Provisional Sums**

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum in the Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, the SCC should state the manner in which they will be used, and under whose authority (usually the Procuring Entity's Representative's).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors should be indicated in the relevant part of the Bill of Quantities as a particular provisional sum with an appropriate brief description. A separate procurement procedure is normally carried out by the Procuring Entity to select such specialized contractors. To provide an element of competition among the Bidders in respect of any facilities, amenities, attendance, etc., to be provided by the successful Bidder as prime Contractor for the use and convenience of the specialist contractors, each related provisional sum should be followed by an item in the Bill of Quantities inviting the Bidder to quote a sum for such amenities, facilities, attendance, etc.

### **Signature Box**

A signature box shall be added at the bottom of each page of the Bill of Quantities where the authorized representative of the Bidder shall affix his signature. Failure of the authorized representative to sign each and every page of the Bill of Quantities shall be a cause for rejection of his bid.

These Notes for Preparing a Bill of Quantities are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final documents.

***Please see attached Bill of Quantities.***

## ***Section IX. Checklist of Technical and Financial Documents***

### **Notes on the Checklist of Technical and Financial Documents**

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

- a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or
- b. any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary “pass/fail” criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

# Checklist of Technical and Financial Documents

## I. TECHNICAL COMPONENT ENVELOPE

### *Class "A" Documents*

#### Legal Documents

- (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

#### Technical Documents

- (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**
- (d) Special PCAB License in case of Joint Ventures **and** registration for the type and cost of the contract to be bid; **and**
- (e) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** original copy of Notarized Bid Securing Declaration; **and**
- (f) Project Requirements, which shall include the following:
- a. Organizational chart for the contract to be bid;
  - b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
  - c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
  - d. Certificate of Site Inspection
- (g) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

#### Financial Documents

- (h) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

***Class “B” Documents***

- (i) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence **or** duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

**II. FINANCIAL COMPONENT ENVELOPE**

- (j) Original of duly signed and accomplished Financial Bid Form; **and**

***Other documentary requirements under RA No. 9184***

- (k) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- (l) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- (m) Cash Flow by Quarter.



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# "CONSTRUCTION OF RSCC GUARD HOUSE"

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*PROJECT TITLE*

**DSWD-CAR Reception and Study Center for Children, Wangal, La Trinidad, Benguet 2601**

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*PROJECT LOCATION*

**PROJECT DOCUMENTS  
ISSUED FOR DSWD CAR PROCUREMENT TRANSACTIONS ONLY**





























































































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# "PROPOSED ADDITIONAL IMPROVEMENTS FOR RSCC BUILDING"

"IMPROVEMENT OF MAIN KITCHEN OF RSCC BUILDING"  
"CONSTRUCTION OF COMFORT ROOM AND LACTATION STATION COMPARTMENTS IN RSCC BUILDING"  
"CONSTRUCTION OF ACCESS RAMP AT RSCC BUILDING"

---

## *PROJECT TITLE*

**DSWD-CAR Reception and Study Center for Children, Wangal, La Trinidad, Benguet 2601**

---

## *PROJECT LOCATION*

**PROJECT DOCUMENTS  
ISSUED FOR DSWD CAR PROCUREMENT TRANSACTIONS ONLY**















































































Contract Reference Number: \_\_\_\_\_

Name of Project: \_\_\_\_\_

**Construction of RSCC Guard House**

Location of the Project: **RSCC, Wangal, La Trinidad**

Standard Form Number SF-INFR-55

**BILL OF QUANTITIES**

Columns 1, 2, 3, & 4 are to be filled up by the Procuring Entity				Columns 5 & 6 are to be filled by the bidders	
ITEM NO.	ITEM DESCRIPTION 2	QTY 3	UNIT 4	UNIT PRICE (PESOS) 5	AMOUNT (PESOS) 6
<b>1</b>	<b>GENERAL REQUIREMENTS</b>				
1.1	Mobilization/Demobilization	1.00	lot		
1.2	Permits and clearances: Building Permit, Electrical Permit, Plumbing Permit, Occupancy Permit	1.00	lot		
1.3	Project Billboard and Signboard	2.00	pcs		
1.4	Hauling, Clearing, & Cleaning	1.00	lot		
1.5	Temporary Fence and Facilities	1.00	lot		
<b>2</b>	<b>CIVIL WORKS</b>				
2.1	Excavation	1.00	lot		
	2.1.1. Foundation		cu.m		
2.2	Backfilling	1.00	lot		
	2.2.1. Foundation		cu.m		
	2.2.2. Slope Protection		cu.m		
2.3	Concrete Works, 3000 psi @ 28 days	1.00	lot		
	2.3.1. Footing		cu.m		
	2.3.2. Column		cu.m		
	2.3.3. Beam		cu.m		
	2.3.4. Slab		cu.m		
	2.3.5. Slope Protection		cu.m		
2.4	Structural Steel Works	1.00	lot		
	2.4.1. 10mmx6m deformed rebar		kgs		
	2.4.2. 12mmx6m deformed rebar		kgs		
	2.4.3. 16mmx6m deformed rebar		kgs		
	2.4.4. #16 GI wire		kgs		
2.5	Compaction	1.00	lot		
	2.5.1. Foundation		cu.m		
	2.5.2. Slope Protection		cu.m		
2.6	Masonry Works	1.00	lot		
	2.6.1. 6" CHB, plastered both sides		sqm		
	2.6.1. 4" CHB, plastered both sides		sqm		
2.7	Slope Protection	1.00	lot		
	2.7.1. River Rock		cu.m		
	2.7.2. Landscaping cum slope protection		cu.m		
2.8	Demolition Works	1.00	lot		
	2.8.1. Existing Guard House		sqm		
	2.8.2. Existing Perimeter Fence		sqm		
2.9	Gravel Bedding	1.00	lot		
	2.9.1. G1 gravel		cu.m		

<b>3</b>	<b>FORMWORKS AND SCAFFOLDINGS</b>				
3.1	Forms			sqm	
3.2	Scaffoldings (GI pipes)			pcs	
<b>4</b>	<b>ARCHITECTURAL WORKS</b>				
4.1	Ceiling Finishes	1.00		lot	
	4.1.1. PVC wood panel (eaves)			sqm	
4.2	Floor Finishes	1.00		lot	
	4.2.1. 600mmx600mm porcelain tiles			sqm	
	4.2.2. 600mmx600mm ceramic bathroom tiles, 3 coats waterproofing (bathroom)			sqm	
4.3	Wall Finishes	1.00		lot	
	4.3.1. Skim coated and sanded, flat primer, 3 coats semi-gloss (interior)			sqm	
	4.3.2. Skim coated and sanded, flat primer, 3 coats semi-gloss stucco finish (exterior)			sqm	
	4.3.3. 300mmx600mm ceramic bathroom wall tiles			sqm	
	4.3.4. Fluted wood cladding with framing			sqm	
	4.3.5. Manufactured stone cladding			sqm	
	4.3.6. Skim coated and sanded, 3 coats waterproofing, flat primer, 3 coats elastomeric paint firewall			sqm	
4.4	Roofing Works	1.00		lot	
	4.4.1. GI flashing			lm	
	4.4.2. Ga24, GI pre-painted long span rib-type			sqm	
	4.4.3. Double sided foam insulation			sqm	
	4.4.4. 50x100x1.5mm C-purlin			pcs	
	4.4.5. 50x150x3mm Rafter			pcs	
	4.4.6. 10mm dia round bar			pcs	
	4.4.7. 1"x1"x1/4" angle bar			pcs	
	4.4.8. 4.5mm thk FiCem board			pcs	
	4.4.9. Ga24, GI pre-painted gutter			lm	
4.5	Carpentry and Joinery	1.00		lot	
	4.5.1. 12mm thk ordinary gypsum board			sqm	
	4.5.2. Metal furring framing			sqm	
	4.5.3. Hanging cabinet			set	
	4.5.4. Undersink cabinet			sets	
4.6	Doors and Windows	1.00		lot	
	4.6.1. D-A door, with jamb and lever type lockset			sets	
	4.6.2. D-B door, with jamb and lever type lockset			set	
	4.6.3. W-A window			set	
	4.6.4. W-B window			set	
	4.6.5. W-C window			set	
4.7	Specialized Items	1.00		lot	
	4.7.1. 2.4x1.5m Bulletin board, with wire mesh, 2"x2" angle bar framing			set	
	4.7.2. Security Office Signage			set	
4.8	Kitchen and Countertop	1.00		lot	
	4.8.1. 1" thk Granite Slab			sqm	
4.9	Reception	1.00		lot	
	4.9.1. 1" thk Granite Slab			sqm	
4.10	Bathroom and countertop	1.00		lot	
	4.10.1. 1" thk Granite Slab			sqm	
<b>5</b>	<b>ELECTRICAL WORKS</b>				
5.1	Conduits, Boxes, & Fittings (conduit works/conduit rough-in)	1.00		lot	
	5.1.1. 1/2" PVC pipe			pcs	
	5.1.2. 1/2" RSC pipe			pcs	
	5.1.3. PVC utility box			pcs	
	5.1.4. PVC junction box			pcs	
5.2	Wirings and other accessories	1.00		lot	
	5.2.1. #12 THHN wire			box	
	5.2.2. #8 THHN wire			box	

	5.2.3. 1-gang switch		pcs		
	5.2.4. 2-gang switch		pcs		
	5.2.5. 3-gang switch		pcs		
	5.2.6. 1-gang convenience outlet		pcs		
	5.2.7. 2-gang convenience outlet		pcs		
5.3	Panel Board and Breakers	1.00	lot		
	5.3.1. Panel Board, 6 holes		set		
	5.3.2. 40 amp breaker		pcs		
	5.3.3. 20 amp breaker		pcs		
	5.3.4. 15 amp breaker		pcs		
5.4	Lighting, Fixtures, and other Accessories	1.00	lot		
	5.4.1. Pin light		pcs		
	5.4.2. 150mm dia beehive downlight		pcs		
	5.4.3. Undercabinet warm lighting		pcs		
	5.4.4. 36" 6-blade ceiling fan		set		
	5.4.5. 10"x10" ceiling-mounted silent-type exhaust fan, with flexible ducting		sets		
<b>6</b>	<b>SANITARY/PLUMBING WORKS</b>				
6.1	Drainage System	1.00	lot		
	6.1.1. 75mm PVC pipe		pcs		
	6.1.2. 50mm PVC pipe		pcs		
	6.1.3. Stainless Steel Floor Drain		pcs		
6.2	Sewer System	1.00	lot		
	6.2.1. Portable Septic Tank, 750 gal		set		
	6.2.2. 75mm PVC pipe		pcs		
	6.2.3. 50mm PVC pipe		pcs		
6.3	Plumbing Fixtures and Accessories	1.00	lot		
	6.3.1. Stainless steel kitchen, double tub, with stainless steel lever-type gooseneck faucet		set		
	6.3.2. Ceramic lavatory, with stainless steel faucet		set		
	6.3.3. 1-piece watercloset, with complete accessories		set		
	6.3.4. Stainless steel grease trap, with complete accessories		set		
	6.3.5. Stainless steel shower head, with complete accessories		set		
<b>7</b>	<b>CONSTRUCTION SAFETY &amp; HEALTH</b>	1.00	lot		
	7.1.1. Safety shoes	5.00	pairs		
	7.1.2. Reflective vests	5.00	pcs		
	7.1.3. Hard hats	5.00	pcs		
	7.1.4. Safety signages	1.00	lot		
TOTAL BID PRICE:					
TOTAL AMT. IN WORDS: (in words)					

REPUBLIC OF THE PHILIPPINES  
CORDILLERA ADMINISTRATIVE REGION

Contract Reference Number:

Name of Project: **Proposed Additional Improvements for RSCC Building**

Location of the Project: **DSWD\_CAR Reception and Study Center for Children, Wangal, La Trinidad, Benguet 2601**

Standard Form Number SF-INFR-55

**BILL OF QUANTITIES**

Columns 1, 2, 3, & 4 are to be filled up by the Procuring Entity				Columns 5 & 6 are to be filled by the bidders	
ITEM NO.	ITEM DESCRIPTION 2	QTY 3	UNIT 4	UNIT PRICE (PESOS) 5	AMOUNT (PESOS) 6
<b>1</b>	<b>GENERAL REQUIREMENTS</b>				
1.1	Mobilization/Demobilization	1	lot		
1.2	Permits, Licenses, & Clearances: -Building Permit -Fencing Permit -Electrical Permit -Sanitary Permit	1	lot		
1.3	Project Billboard and Signboard		pcs		
1.4	Hauling, Clearing & Grubbing	1	lot		
1.5	Water and Electricity Consumption	1	lot		
1.6	Temporary Fence and Facilities	1	lot		
<b>A</b>	<b>IMPROVEMENT OF MAIN KITCHEN OF RSCC BUILDING</b>				
<b>1</b>	<b>DEMOLITION WORKS</b>				
1.1	Removal of Existing Structures	1	lot		
<b>2</b>	<b>ARCHITECTURAL WORKS</b>				
2.1	FINISHES				
	2.1.1. Tiles		sqm		
	2.1.2. Kitchen Counter (Granite Slab) a. White Marble Finish Granite Slab b. Marine Plywood (3/4" thk.)		sqm		
2.2	CEILING WORKS				
	2.2.1. Ceiling Works		sqm		
2.3	DOORS & WINDOWS				
	2.3.1. Doors		sqm		
	2.3.2. Windows a. W1 - uPVC Powder Coated b. W2 - uPVC Powder Coated c. W3 - Wood Stained & Varnished		sqm		
2.4	PAINTING WORKS				
	2.4.1 Painting Works (Ceiling & Walls)		sqm		
2.5	CABINETRY & SHELVING				
	2.5.1 Cabinetry & Shelving	1.00	lot		
<b>3</b>	<b>PLUMBING WORKS</b>				
3.1	PLUMBING/ SANITARY WORKS				
	3.1.1. Sewerline	1.00	lot		
	3.1.2. Waterline	1.00	lot		
	3.1.3. Fixtures and Accessories a. 4" x 4" Stainless floor drain b. 2-tub S.S. Kitchen Sink c. 1/2" brass hose bibb d. S.S. Grease Trap	1.00	lot		



<b>4</b>	<b>ELECTRICAL WORKS</b>			
	4.1.1. Electrical Works:	1	lot	
<b>5</b>	<b>CONSTRUCTION SAFETY &amp; HEALTH</b>			
	5.1.1. Construction Safety & Health	1	lot	
<b>B</b>	<b>CONSTRUCTION OF COMFORT ROOM AND LACTATION STATION COMPARTMENTS IN RSCC BUILDING</b>			
<b>1</b>	<b>ARCHITECTURAL WORKS</b>			
	1.1. Common Comfort Room Station	1	lot	
	1.2. Office Comfort Room Station	1	lot	
	1.3. Lactation Room Station	1	lot	
	1.4. Room Signages	1	lot	
	1.5. Building Marker	1	lot	
<b>2</b>	<b>CONSTRUCTION SAFETY &amp; HEALTH</b>			
	2.1.1. Construction Safety & Health	1	lot	
<b>C</b>	<b>CONSTRUCTION OF ACCESS RAMP AT RSCC BUILDING</b>			
<b>1</b>	<b>ARCHITECTURAL WORKS</b>			
	2.1 RAILINGS			
	2.1.1. Steel Works	1	lot	
	2.1.2. Painting Works		sqm	
<b>2</b>	<b>PLUMBING/ SANITARY WORKS</b>			
	2.1 WEEP HOLES			
	2.1.1. Weep Holes	1	lot	
<b>3</b>	<b>STRUCTURAL WORKS</b>			
	3.1 EARTHWORKS			
	2.1.1. Earthworks	1	lot	
	3.2 CONCRETE WORKS, 3000 PSI @ 28 DAYS			
	2.2.1. Concrete Works	1.00	lot	
	3.3 STRUCTURAL STEEL WORKS			
	2.3.1. Structural Steel Works	1.00	lot	
	3.4 FORMWORKS AND FALSEWORKS			
	2.2.1. Formworks and Falseworks	1.00	lot	
	3.5 SLOPE PROTECTION			
	3.5.1. Cribwall	1.00	lot	
<b>4</b>	<b>CONSTRUCTION SAFETY &amp; HEALTH</b>			
	4.1.1. Construction Safety & Health	1	lot	
TOTAL BID PRICE:				
TOTAL AMT. IN WORDS: (in words)				

## GENERAL SPECIFICATIONS

# “CONSTRUCTION OF RSCC GUARD HOUSE”

PROJECT TITLE

## DSWD-CAR, RECEPTION & STUDY CENTER FOR CHILDREN, WANGAL, LA TRINIDAD, BENGUET

PROJECT LOCATION

Written and Prepared by:

**ARCH. JIMMY M. MAYORES**, UAP  
*ARCHITECT II, AD/BGMS*  
PRC REG. NO.: **0049778**

**ENGR. COLLIN JONES C. TUNGOL**, CE  
*ENGINEER II, AD/BGMS*  
PRC REG. NO.:



# GENERAL SPECIFICATIONS

## DIVISION 1 - "GENERAL PARAGRAPHS"

14 JUNE 2023

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ARJMM/ENGRCJCT/REV. 00

Revision	Date	Description



## DIVISION 1 - GENERAL PARAGRAPHS

### **PART 1. GENERAL**

#### **1.1. DESCRIPTION**

1.1.1. The work specified herein is the **CONSTRUCTION OF RSCC GUARD HOUSE, DSWD-CAR, Reception and Study Center, Wangal, La Trinidad, Benguet.**

#### **1.2. PROJECT INFORMATION**

1.2.1. The work shall confirm the following contract drawings, details and maps, all of which form part of these specifications.

1.2.2. Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customary performed, shall not relieve the Contractor from performing as if fully and correctly set forth and described in the drawings and specifications.

1.2.3. The Contractor shall check all drawings and furnish it immediately upon receipt and shall promptly notify the Project Engineer/Architect of any discrepancies. Figures marked on drawings shall be followed in preference to scale measurements. Large scale drawings shall govern small scale drawings. The contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

1.2.4. All drawings issued for construction to General Contractor/s, Sub-contractor shall be furnished solely by the Buildings and Grounds Management Section.

1.2.5. Physical Data: The physical conditions indicated on the drawings and in the specifications are the results of site investigations by survey and soil investigations conducted. However, it is expressly understood that the Architect/Designer will not be responsible for any interpretations or conclusions drawn therefrom.

#### **1.3. EXISTING WORK**

1.3.1. The disassembling, disconnecting, cutting, removal, or altering of existing work in any way shall be carried on in such a manner as to prevent damage on all portions of existing work, whether they are to remain in place, reused in the new work, or salvaged and stored.

1.3.2. All portions of existing work which have been cut, damaged or altered in any way during construction operations shall be repaired or replaced with a kind which matches the existing or adjoining work. All work of this nature shall, at the completion of all operations, be left in a condition which is as good as what existed before the new work started.

### **PART 2 SUBMITTALS**

#### **2.1. PROPOSED MATERIAL SUBMITTALS, CATALOGUE DATA AND SAMPLES**

2.1.1. Proposed material submittals required of the Contractor shall be submitted with ample time period prior to the execution of related scope of work to allow sufficient time for processing, review, approval and procurement before the Contractor is ready to use the material. **No material shall be used prior to the approval of the Building and Grounds Management Section (BGMS).**

2.1.2. The Contractor shall furnish the name and address of the manufacturer of each item of material and equipment. Each submittal shall be accompanied by a cover letter signed by the Contractor.



2.1.3. The Contractor shall furnish two (2) copies for approval, giving full information, such as identifying description, catalogue numbers, catalogue cuts, and data sheets as may be required for all material and equipment designated in the technical sections of this specification. Clearly mark each item proposed to be the item number of the contract and identify in the submittals, with cross references to the item number of the Contract drawings and specifications so as to clearly identify the use for which it is intended. Data submitted in a bound volume in the same numerical sequence as specification section paragraphs.

2.1.4. The Contractor shall certify on all submittals that the material being proposed conforms to the contract requirements. In the event of any variance, the Contractor shall state specifically which portions vary, and request approval of a substitute. Incomplete submittals and submittals with inadequate data will be rejected.

## 2.2. SHOP DRAWINGS

2.2.1. Before starting the fabrication or installation of any of this work, the Contractor shall submit drawings as may be required and designated in the technical sections of this specification.

2.2.2. In addition to the drawings designated in the technical sections, the Contractor shall submit drawings as may be required and designated in the technical sections of this specification.

2.2.3. The Contractor shall prepare at his own expense and submit with such promptness as to cause no delay in his work or in that of any other Contractor doing work on the same building, two (2) blueprint copies in 30" x 20" or A1/A3 size of all shop drawings, as well as schedules, required corrections, including all necessary corrections to artistic effect. The Contractor shall make any corrections required by the Architect, file with him two (2) corrected copies and furnish such other copies as may be needed.

2.2.4. Shop drawings are to be submitted with ample time period prior to the execution of related scope of work to allow sufficient time for processing, review and approval.

**2.3.** The Contractor shall not be relieved of responsibility for any deviation from the requirement of the Contract Documents by the Architect's approval of Shop Drawings, Product Data or samples unless the Contractor has specifically informed the Architect in writing such deviation at the time of submission and the Architect has given written approval to the specific deviation.

**2.4.** The Contractor shall not be relieved from the responsibility for errors or omissions in the Shop Drawings, Product Data or samples by the Architect's approval thereof.

**2.5.** No portion of work requiring submission of Shop Drawings, Product Data or sample shall be commenced until the submittal has been approved by the Architect. All such portions of the work shall be in accordance with approved submittals.

## 2.6. MOCK-UP:

2.6.1. *GENERAL:* As soon as practicable, provide a complete installation of mock-up test panels as required by the Contract Documents, Modifications deemed necessary shall be made in mock-up for evaluation, and re-tested until specified results are obtained.

2.6.2. Tests shall be conducted at Contractor's expense; Modifications for the mock-up as required from the result shall be obtained.

2.6.3. Coordinate mock-up test conditions and procedure with the BGMS prior to the test.

**2.7. Architect's Review of Material Submittals:** The Architect shall review Shop Drawings, Product Data, and Samples with reasonable promptness upon Architect's receipt and will apply Architect's stamp thereto. Notations by the Architect which would increase contract cost or time of completion shall be



brought to the Architect's attention before proceeding with the Work. Each submittal will be stamped indicating appropriate action as follows:

2.7.1. **"A" Action:** Means that fabrication, manufacture, or construction may proceed providing that all submittal complies with the Architect's notations and Contract Documents.

2.7.2. **"B" Action:** Means that fabrication, manufacture, or construction may proceed, provided with submittal which complies with the Architect's notations and Contract Documents. If, for any reason, Contractor cannot comply with notations, Contractor shall make revisions and resubmit as described for submittals stamped "C" action.

2.7.3. **"B" Action-resubmit:** Means that fabrication, manufacture, construction may proceed; however, if the submittal did not fully demonstrate the full extent of all conditions, details, or coordination with other surrounding work, and, therefore, requires additional information and rework as noted. These shop drawings shall be submitted for final "A" and "B" action. Specific areas requiring additional information shall not be fabricated, manufactured or constructed prior to resubmission.

2.7.4. **"C" Action:** Means that submittal does not comply with design intent of Contract Documents. Submittals stamped "C" Action are not to be used. Contractor shall make revisions and resubmit.

## **2.8. IMPLEMENTING AGENCY (DSWD) REQUIREMENTS FOR APPROVAL, TESTING AND COMMISSIONING OF THE FOLLOWING:**

### **2.8.1. For Architectural Systems:**

The contractor shall submit all required certifications pertaining to the relevant floor, walls and ceiling systems as part of the conformance of the Buildings and Ground Management Section's requisitions.

### **2.8.2. For Electrical System:**

Conduct Electrical Insulation Resistance Test, balancing of load, current reading during lean & peak loads and voltage reading along with a submission of Certificate of Calibration for kW-Hr meter if required, and all Certificate of Commissioning for all electrical works.

### **2.8.3. For Plumbing/Sanitary System:**

Conduct Water Pressure Testing, 24-hour flood testing of waterproofing prior to floor topping, hydrostatic leak test of piping works with a submission of Certificate of Flood Testing to the area waterproofed and all Certificate of Commissioning for all plumbing works along with a provision of water meter with a Certificate of Calibration from the pertinent local water district or such other water concessionaire.

### **2.8.4. For Ventilation System:**

Ventilation Testing & Commissioning to conduct a light test of ductworks along with submission of Certificate of Commissioning for all ventilation works.

### **2.8.5. For Fire Sprinkler System**

Conduct hydrostatic leak testing at 150psi for two (2) hours. Contractor shall submit Certificate of hydrostatic test for sprinkler pipe and all Certificate of commissioning for the fire sprinkler system.

**\*\*\* END OF SECTION \*\*\***



# GENERAL SPECIFICATION

## DIVISION 2 - "SITE CONDITIONS"

14 JUNE 2023

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ARJMM/ENGR CJCT/REV. 00

Revision	Date	Description



## SITE CONDITIONS

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUMMARY

1.2.1. This section includes:

- 1.2.1.1. Site clearing
- 1.2.1.2. Removal and Disposal of Construction Materials
- 1.2.1.3. Storage and Filing of materials
- 1.2.1.4. Site Preparation
- 1.2.1.5. Earthwork
- 1.2.1.6. Foundation Works
- 1.2.1.7. Filing and Backfilling

#### 1.3. SITE CLEARING

1.3.1. Should the existing RSCC Building has structural and utility deficiencies found by the General Contractor, it shall be completely demolished together with all concerned structure involved prior to the approval of the BGMS.

#### 1.4. REMOVAL AND DISPOSAL OF CONSTRUCTION MATERIALS

1.4.1. Legal and proper waste management and disposal shall be observed during and after the construction. All abandoned footings, utilities, etc. that interferes with new construction shall be removed.

#### 1.5. STORAGE AND FILING OF MATERIALS

1.5.1. **Delivery:** General Contractor shall ensure that materials are properly turned over and delivered on site in good quality and condition. A time and delivery record shall be available.

1.5.2. **Storage:** General Contractor shall designate and/or allot a space to sub- contractors for storage of their materials and for erection of their sheds and tool houses (if necessary). Materials shall be arranged properly and warehouse shall be maintained properly by a designated person of the General Contractor.

1.5.3. All cement, lime and other materials affected by moisture shall be stored on platforms and protected from weather. Materials shall be stored to insure the preservation of their quality and fitness for their work. Stored materials shall be located so as to facilitate prompt inspection.

1.5.4. Should it be necessary at any time to move materials, sheds or storage platforms, the Contractor shall do so at his own expense.





## 1.6. SITE PREPARATION

1.6.1. **Staking Out:** The building shall be staked out with all the lines and grades in accordance to the drawings and shall be established before excavation starts. Basic batter boards and reference work shall be erected at such places where they will not be disturbed during the construction of the foundation.

## 1.7. EARTHWORK

1.7.1. All earthwork shall be done in accordance with proper and immediate recommendation.

1.7.2. **Excavation and Leveling:** Excavation shall be constructed or protected so that they do not endanger life or property. Existing footings or foundations which may be affected by any excavation shall be underpinned adequately or otherwise protected against settlement and shall be protected against lateral movement. Before commencing the excavation, the person in charge of the excavation shall notify in writing (if needed) the owners of adjoining buildings and should be protected. The Contractor assumes full responsibility to provide necessary temporary support during excavation to protect adjacent properties from any damages.

## 1.8. FOUNDATION

1.8.1. Foundation is designed for a soil bearing capacity of 3000 psi or 144 MPa (or referred to in its geotechnical report). Confirmation of actual soil bearing capacity shall be done prior to construction of foundation.

1.8.2. Foundation shall rest on natural soil, unless otherwise noted by the civil/structural engineer; no part of the foundation shall rest on fill. The contractor shall notify the civil/structural engineer after footing excavation has been completed and prior to concreting to confirm the design soil bearing capacity. In case, actual soil bearing capacity is found to be less than the recommended, notify the structural engineer for proper revision of footing design.

\*\*\* END OF SECTION \*\*\*



# STRUCTURAL SPECIFICATION

## DIVISION 3 - "CONCRETE"

14 JUNE 2023

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ENGR CJCT/ REV. 00

Revision	Date	Description



## CONCRETE

### **PART 1 GENERAL**

#### **1.1. RELATED DOCUMENTS**

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### **1.2. SUMMARY**

1.2.1. This section includes:

1.2.1.1. General requirements for all concrete works

#### **1.3. REFERENCES**

1.3.1. ACI 315 - Specifications for Structural Concrete for Buildings; American Concrete Institute International.

1.3.2. ACI 318.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International.

1.3.3. IBC - International Building Code: Current Editions.

1.3.4. National Building Code of the Philippines

1.3.5. National Structural Code of the Philippines

1.3.6. Local Building Codes and Regulations

#### **1.4. DELIVERY, STORAGE, AND HANDLING**

1.4.1. All materials shall be delivered in manufacturer's containers, dry, undamaged and unopened, including instructions. All clearly labelled with the manufacturer's name, product identification, expiration date, etc.

1.4.2. Store materials strictly in accord with manufacturer's printed recommendations.

1.4.3. Cement and aggregates shall be stored in such a manner as to prevent their deterioration or the intrusion of foreign matter. Cement shall be stored immediately upon arrival on the site of the work, in substantial, waterproof bodegas. The floor must be sufficiently elevated to deter dampness. Aggregates shall be stored separately from other foreign materials.

1.4.4. Water to be used for mixing the concrete shall be clean and free from injurians, amount of oil acids, alkaline, salt and other organic materials. Mixers, which have been out of use for more than 30 minutes, shall be thoroughly cleaned before fresh concrete is mixed. Mixers shall be cleaned out before changing to another type of cement.

### **PART 2 PRODUCTS**

#### **2.1. MANUFACTURERS**

2.1.1. Portland Cement must be approved by the Civil/Structural Engineer

### **PART 3 EXECUTION**

#### **3.1. EXAMINATION**

3.1.1. Embedded materials such as gravel and sand should have been inspected and tested, cleared and graded washed.

3.1.2. Verify that areas of execution are acceptable to receive the work of this section.



3.1.3. Alert the BGMS of any discrepancies, prior to commencing the Work of this section.

3.1.4. Coordinate the Work of this section with applicable trades.

### **3.2. MIXING OF CONCRETE**

3.2.1. All concrete shall be mixed thoroughly and should be deposited as nearly as practicable. Make sure that the concrete is of the required workability at the point and time of placing.

3.2.2. 1.5 cu.m. mixer capacity and not less than 90 seconds for more than 1.5 cu.m. mixer capacity. Interval of placing the concrete shall not be so long allowing the concrete in place to harden partially. The time elapsing between mixing, transporting, placing and compaction altogether of a batch of concrete shall not be longer than the initial setting time of the concrete.

3.2.3. Retempering of concrete will not be permitted.

### **3.3. PLACING PROCEDURES**

3.3.1. The concrete shall be deposited as nearly as possible in its final position. It shall be placed so as to avoid segregation of the concrete and displacement of the reinforcement, other embedded items or formworks. When placing on a nearly horizontal surface, placing shall start at the lower end of the surface to avoid decompaction of concrete.

3.3.2. For pouring of concrete for columns, the Contractor shall use drop chute with a maximum drop height of 1.50 meters or less. For pouring of concrete for slab, the Contractor shall execute the placing direction with backward movement. Concrete slab on fill with 100 mm thick shall be poured on gravel bed and shall be placed with the 10mm diameter Reinforcement Steel Bar (RSB) spaced at 400mm both ways.

3.3.3. Layers shall not be placed so that they form featheredges nor shall they be placed on a previous layer, which has taken its initial set. In order to comply with this requirement, another layer may be started before the initial set of the preceding layer.

3.3.4. Concrete shall not be placed during rain, which is sufficiently heavy or prolonged to wash mortar from coarse aggregate on the exposed faces of fresh concrete. Means shall be provided to remove any water accumulating on the surface of the placed concrete. Concrete shall not be deposited into such accumulations of water.

3.3.5. In dry weather, covers shall be provided for all fresh concrete surfaces, which are not being worked on. Water shall not be added to concrete for any reason.

### **3.4. CURING OF CONCRETE**

3.4.1. Concrete shall be protected during the first stage of hardening from loss of moisture and from the development of temperature differentials within the concrete sufficient to cause cracking. The methods used for curing shall not cause damage of any kind to the concrete.

3.4.2. Curing shall be continued for as long as may be necessary to achieve the above objectives but not less than 7 days until the concrete is covered by successive construction whichever is the shortest period. The curing process shall commence as soon as the concrete is hard enough to resist damage from the process.

3.4.3. Exposed concrete surfaces shall be closely covered with impermeable sheeting, properly secured to prevent its removal by wind and the development of air spaces beneath it. If it is not possible to use impermeable sheeting, the Contractor shall keep the exposed surfaces continuously wet by means of water spray or by covering with a water absorbent material, which shall be kept wet.



3.4.4. The contractor shall provide a suitable form of shading to prevent the direct rays of the sun reaching the concrete surfaces for at least the first four days of the curing period.

### 3.5. GENERAL REQUIREMENTS FOR ALL CONCRETE

3.5.1. All materials and workmanship shall conform to the latest building code of American Concrete Institute (ACI-318).

3.5.2. All concrete shall develop a minimum compressive strength at the end of twenty-eight (28) days with corresponding maximum size aggregate and slumps as follows:

LOCATION	28DAYS COMPRESSIVE STRENGTH	MAXIMUM SIZE AGGREGATE	MAXIMUM SLUMP
<b>Curbs &amp; Slab on Grade except Foundation</b>	3000 psi (21 mPA)	1 in. (25mm)	4 in (100mm)
<b>Foundation &amp; Retaining Wall</b>	3000 psi (21 mPA)	3/4 in. (19mm)	4 in (100mm)
<b>Beams, Slabs, Columns &amp; Shear walls</b>	3000 psi (21 mPA)	3/4 in. (19mm)	4 in (100mm)

3.5.3. In general, the latest edition of ACI- 315, manual of standard practice detailing reinforced concrete structures shall be adhered to, unless otherwise shown or noted.

3.5.4. Minimum concrete cover to be maintained for reinforcing steel:

Suspended Slabs	3/4 in. (19mm)
Slab on Grade	1 ½ in. (38mm)
Walls Above Grade	1 in. (25mm)
Beam Stirrups and Column Ties	1 ½ in. (38mm)
where concrete is exposed to earth but poured against forms	2 in. (50mm)
where concrete is deposited directly against earth	3 in. (75mm)

3.5.5. All anchor bolts, dowels, and other inserts, shall be properly positioned and secured in placed prior to placing of concrete contractor shall note and provide all miscellaneous curbs, sills, stools, equipment, and mechanical bases that are required by the Architectural, Electrical, and Mechanical drawings.

3.5.6. All concrete shall be kept moist for a minimum of seven (70 consecutive days) immediately after pouring by the use of wet burlap, fog spraying, curing compounds or other approved methods.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 4 - "MASONRY"

14 JUNE 2023

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ARJMM/ENGR CJCT/REV. 00

Revision	Date	Description



## UNIT MASONRY ASSEMBLY

### PART 1 GENERAL

#### 1.2. DEFINITIONS

##### 1.2.1. Concealed Masonry Surfaces:

- 1.2.1.1. Surfaces of foundation walls against which backfill is placed.
- 1.2.1.2. Surfaces covered by furring and wallboard plaster, stucco, or masonry facings.
- 1.2.1.3. Surfaces above suspended ceilings.
- 1.2.1.4. Surfaces within attic spaces, crawl spaces, pipe or duct chases and elevator shafts.

##### 1.2.2. Exposed Masonry Surfaces

Masonry surfaces other than those listed above including those to be painted.

##### 1.2.3. Grout Lift and Grout Pour

A grout lift is the layer of grout placed in a single continuous operation. A grout pour is the entire height of grout fill placed in one day and is composed of a number of successively placed grout lifts.

##### 1.2.4. Reinforced Hollow Unit Masonry

Hollow concrete masonry units reinforced vertically and horizontally with steel bars located within cells or kerfs in the units and with cells containing reinforcing bars filled solidly with grout.

##### 1.2.5. Additional Definitions:

- 1.2.5.1. *Back-Up*: That part of masonry walls which is behind the exterior facing.
- 1.2.5.2. *Bed Joint*: The horizontal layer of mortar on which a masonry unit is laid.
- 1.2.5.3. *Head Joint*: The vertical mortar joint between ends of masonry units. Sometimes
- 1.2.5.4. *Kerf*: A cut or notch made with a saw, or with a cutter, part way through a portion of a unit.
- 1.2.5.5. *Low Lift Grouting*: The technique of grouting masonry in 0.20 to 1.8 meters lifts as the wall is being laid.
- 1.2.5.6. *Reinforced Masonry*: Masonry in which reinforcement is embedded in such a manner that the components act together to resist lateral forces.

#### 1.3. PERFORMANCE REQUIREMENTS

1.3.1. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

- 1.3.1.1. For Concrete Unit Masonry: f'm = 1500 psi (10.3 MPa)
- 1.3.1.2. For Load Bearing Concrete Unit Masonry: f'm = 2000 psi (13.8 MPa)

##### 1.3.2. Samples for Verification:

For the following:

- 1.3.2.1. Full-size units for each different masonry unit required, showing the full range of exposed dimensions to be expected in the completed construction.



1.3.2.2. Accessories embedded in the masonry.

## 1.4. DELIVERY, STORAGE & HANDLING

1.4.1. Handle, store and protect masonry units to avoid chipping, breakage or contact with the soil. Keep steel reinforcing bars free of rust and loose scale. Reject rusted steel reinforcing bars. Deliver cement and lime in unbroken bags, barrels, or other sealed containers. Keep cementitious materials dry. Store and handle cement to prevent the inclusion of foreign materials. Store aggregates in a manner to avoid contamination or segregation. Plainly mark and label containers with the manufacturer's names and brands.

## PART 2 PRODUCTS

### 2.1. Masonry Units

2.1.1. **Masonry unit:** Subject to compliance with requirements and as approved by the Architect.

2.1.2. **Concrete Masonry Units (CHB):**

2.1.2.1. *Aggregates:* ASTM C33

2.1.2.2. *Linear Drying Shrinkage:* Not to exceed 0.065 percent when tested in accordance with ASTM 426.

2.1.2.3. *Kinds and Shapes:* In addition to the requirements specified, concrete masonry units of the various kinds shall conform to PNS 16, Type II for 150 mm thick ( $f'm = 7$  MPa / 5 MPa) and for 100 mm thick ( $f'm = 2.5$  MPa). Include closer, jamb, lintel and bond beam units and special shapes and sizes to complete the work as indicated.

### 2.2. Centering Device

2.2.1. Provide centering clips that prevent displacement of reinforcing bars during the course of construction.

### 2.3. Deformed Reinforcing Bars

ASTM A615, Grade 275 (40,000 psi).

### 2.4. Materials for Mortar and Grout

2.4.1. **Admixtures**

2.4.1.1. *Admixtures:* May be used in mortar or grout provided that the admixture does not adversely affect bond or compressive strength of mortar or grout.

2.4.1.2. *Prohibited Ingredients:* Do not use air entraining compounds, calcium chloride salts or other chemicals that will adversely affect metals or the coatings of metals embedded in the mortar or grout.

2.4.2. **Aggregate for Mortar**

ASTM C 144, except that not less than 3 percent nor more than 15 percent shall pass the No. 100 sieve. Aggregate used in mortar for joints 6 mm or less shall have 100 percent passing the No. 8 sieve with 10 percent being retained on the No. 16 sieve.

2.4.3. **Aggregate for Grout:**

2.4.3.1. *Fine Aggregate:* ASTM C 404, Size No. 2 or ASTM C 144.

2.4.3.2. *Pea Gravel:* ASTM C 404, except that 100 percent shall pass the 9 mm screen and not more than 5 percent shall pass the No. 8 sieve.





2.4.3.3. *Coarse Aggregate*: ASTM C 404, size No. 8.

2.4.4. **Portland Cement** : ASTM C150, Type I.

#### 2.4.5. **Lime Putty**

Slaked according to the manufacturer's instructions.

2.4.5.1. *Hydrated Lime*: SAO 181.

2.4.5.2. *Pulverized Quicklime*: SAO 181 except 100 percent shall pass the No. 20 sieve and 90 percent shall pass the No. 50 sieve.

2.4.5.3. *Lime Paste*: Lime paste shall be made with pulverized quicklime or hydrated lime. Hydrated lime processed by the steam method shall be allowed to soak not less than 24 hours. Quicklime and other hydrated lime shall be allowed to soak not less than 72 hours. In lieu of hydrated lime paste for use in mortar, the hydrated lime may be added in the dry form.

2.4.6. **Water**: Potable.

### 2.5. Mortar Mixes

#### 2.5.1. **Proportions**:

2.5.1.1. Type M in accordance with the proportion specifications of ASTM C 270. The mortar shall have a flow, after 11 minutes, of 75 percent or more when tested for water retention in accordance with ASTM C 91 except mortar shall be mixed to an initial flow of 105 to 115 percent.

### 2.6. Grout Mixtures

#### 2.6.1. **Proportions**:

Mix in laboratory established proportions to in a compressive strength at 28 days of not less than 17.20 MPa (2500 psi) when tested in accordance with ASTM C 91 for fine aggregate and ASTM C 39 for grout containing coarse aggregate. Grout shall be classified as fine and low lift types as specified below.

2.6.2. *Fine Grout*: Portland cement, fine aggregate, and sufficient water to obtain a pouring consistency without segregation of the constituents. Slump shall be approximately 125 mm.

2.6.3. *Low Lift Grout*: Portland cement, lime paste or hydrated lime, fine aggregate and coarse aggregate, and sufficient water to obtain a pouring consistency without segregation of the constituents. Slump between 200 and 250 mm.

### 2.7. Source Quality Control

2.7.1. Prior to delivery of masonry units to the site, select by random sampling nine individual whole units from the units proposed for use. Select units free from cracks or other structural defects. Test in accordance with PNS 16.

## **PART 3 EXECUTION**

### 3.1. Preparation

#### 3.1.1. **Examination**

3.1.1.1. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.



3.1.1.1.1. For the record, prepare a written report, endorsed by Installer, listing conditions detrimental to performance.

3.1.1.1.2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.1.1.2. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

### 3.1.2. Protection

3.1.2.1. *Forms and Shores*: Where required, construct forms to the shapes, lines, and dimensions of the members indicated. Construct forms sufficiently rigid to prevent deflections which may result in cracking or other damage to supported masonry and sufficiently tight to prevent leakage of mortar and grout. Do not remove supporting forms or shores until the supported masonry has acquired sufficient strength to support its weight and construction loads to which it may be subjected. In no case shall supporting forms or shores be removed in less than 10 days. Wait at least 16 hours after grouting masonry walls after applying uniform loads and wait an additional 48 hours before applying concentrated loads.

3.1.2.2. *Wall Bracing*: Brace walls against wind and other forces during construction. Allow sufficient time between lifts to prevent cracking of face shells of hollow masonry units. If blowouts, misalignment, or cracking of face-shells should occur during construction, tear down and rebuild the wall at no additional cost to the DSWD.

### 3.1.3. Surface Preparation

3.1.3.1. Clean laitance, dust, dirt, oil, organic matter or foreign materials from concrete surface upon which reinforced masonry is to be placed. Use sandblasting, if necessary, to remove laitance from pores and expose to the aggregate.

## 3.2. Laying Masonry Units

### 3.2.1. Wet Masonry Units

Do not wet concrete masonry units. Do not lay units having a film of water on the surface.

### 3.2.2. Embedded Items

Build in wall plugs, accessories, flashings, pipe sleeves and other items required being built-in as the masonry works progresses. Fill cells receiving anchor bolts and cells of the first course below bearing plates with mortar or grout. Fill spaces around metal door frames and other built-in items with mortar. Point openings around flush-mounted electrical outlet boxes in wet locations, including the flush joint above the box with mortar. Do not embed aluminum items.

### 3.2.3. Bond Beams and Lintels

Install bond units, reinforced as indicated, filled with grout. Install open bottom type bond beam units over cells to be filled. Place wire mesh or small mesh metal lath under open bond beam units if used over cells not to be filled.

### 3.2.4. Unfinished Work

Step back-unfinished work for joining with new work. Do not use toothing without the written approval of the DSWD-BGMS. Remove loose mortar and thoroughly clean the exposed joints before laying new work.

### 3.2.5. Placing Units



Lay hollow masonry units so as to preserve the vertical continuity of cells filled with grout. The minimum clear horizontal dimensions of vertical cores shall be 50 mm by 75 mm. Masonry bond units at corners. Anchor intersections by reinforcing bars as indicated. Adjust each unit to its final position while mortar is still soft and plastic. If any unit is disturbed after mortar has stiffened, remove and relay in fresh mortar. Keep chases, raked out joints, and spaces to be grouted, free from mortar and other debris.

### 3.2.6. Bond Pattern

Lay masonry units in running bond.

### 3.2.7. Cutting and Fitting

Wherever possible, use full units of the proper size in lieu of cut units.

Use power masonry saws for cutting and fitting. Concrete-masonry units shall be wet cut. Make cut edges clean, true and sharp. Make openings carefully so that wall plates, cover plates or escutcheons required by the installation will completely conceal the openings and will be aligned at the bottom with the masonry joints. Cut webs of hollow masonry units to the minimum required for proper installation. Provide reinforced masonry lintels, above openings over 300 mm wide for pipes, ducts and cables trays unless steel sleeves are used.

### 3.2.8. Mortar Joints

Spread bed joints with mortar for the full thickness of the face shells. Where only cells containing reinforcement are to be grouted, spread cross webs around such cell with mortar to prevent leakage of grout. Butter head joints for full thickness of the face shell and place the units. Avoid fins of mortar that protrude into cells to be grouted.

### 3.2.9. Jointing

Tool joints when the mortar is thumbprint hard. Tool horizontal joints first. Brush joints to remove loose and excess mortar. Mortar joints shall be finished as follows:

3.2.9.1. *Flush Joints*: Flush cut joints in concealed masonry surfaces and joints above electrical outlet boxes in wet areas. Make flush cut joints by cutting off the mortar flush with the face of the wall.

3.2.9.2. *Tooled Joints*: Tool joints in exposed exterior and interior masonry surfaces slightly concave. Use a jointer of sufficient length to obtain straight and true mortar joints.

3.2.9.3. *Joint Width*: 9 mm wide.

## 3.3. Placing Reinforcing Steel

Prior to placing grout, clean, reinforcement of loose, flaky rust, scale, grease, mortar, grout, or other coating which might destroy or reduce its bond with the grout. Details of reinforcement shall be in conformance with ACI 315. Do not bend or straighten reinforcing in a manner injurious to the steel. Do not use bars with kinks or bends not shown on the drawings. Placement of reinforcement shall be inspected and approved prior to placing grout.

3.3.1. **Positioning Bars**: Position vertical bars accurately at the centerline of the wall. Maintain a minimum clearance between the bars and masonry units of 12 mm and between parallel bars of one diameter of the reinforcement. Hold vertical reinforcing in place using metal support, centering clips, spacers, ties or caging devices located near the ends of each bar and at intermediate intervals of not more than 192 diameters of the reinforcement.



3.3.2. **Splices:** Locate splices only as indicated. Stagger splices in adjacent bars at least 600 mm. Lap bars a minimum of 40 diameters of the reinforcement or 600 mm, whichever is greater. Welded or mechanical connections shall develop the full strength of the reinforcement.

### 3.4. Placing Grout

Use a hand bucket, concrete hopper or grout pump. Place grout in the final position within 1-½ hours after mixing. Where grouting is discontinued for more than one hour, stop the grout 25-mm below the top of a course to form a key at pour points. Place grout to completely fill the grout spaces without segregation of the aggregates.

#### 3.4.1. Low Lift Grout Method

Place grout as masonry is erected at a rate that will not cause displacement of the masonry due to hydrostatic pressure of the grout. If mortar has been allowed to set prior to grouting, remove fins protruding more than 12 mm into the grout space. Rod or puddle grout during placement using a long 25-mm by 50-mm wood stick or a mechanical vibrator.

### 3.5. Tolerance

Lay masonry plumb, true to line, with course level. Keep bond patterns plumb throughout.

### 3.6. Field Quantity Control

#### 3.6.1. Grout

3.6.1.1. DSWD/BGMS will engage a qualified independent testing agency to perform field quality-control testing indicated below.

3.6.1.1.1. Payment for these services will be made by Contractor.

3.6.1.1.2. Retesting of materials failing to meet specified requirements shall be done at contractor's expense.

3.6.1.2. *Testing Frequency:* Tests and Evaluations listed in this Article will be performed during construction for each 5000 sq. ft. (465 sq. m) of wall area or portion thereof. C. Mortar properties will be tested per ASTM C 780.

3.6.1.3. Grout will be sampled and tested for compressive strength per ASTM C 1019. Employ a qualified testing laboratory to proportion and test grout. Do not change laboratory established proportions or use materials with different physical or chemical characteristics in grout for the work unless additional evidence is furnished that the grout meets the specified requirements.

3.6.1.4. *Concrete Masonry Unit Tests:* For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

#### 3.6.2. Repairing, Pointing and Cleaning

3.6.2.1. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

3.6.2.2. *Pointing:* During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application.

3.6.2.3. *In-Progress Cleaning:* Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.



3.6.2.4. *Final Cleaning:* After mortar is thoroughly set and cured, clean exposed masonry as follows:

3.6.2.4.1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

3.6.2.4.2. Test cleaning methods on sample wall panels; leave one-half of the panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

3.6.2.4.3. Protect adjacent stone and non-masonry surfaces from contact with the cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

3.6.2.4.4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing the surfaces thoroughly with clear water.

3.6.2.4.5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

3.6.2.4.6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

3.6.2.4.7. After mortar joints have attained their initial set but prior to hardening, completely remove mortar and grout daubs or splashing from exposed masonry surfaces. Before completion of the work, make out defects in joints in exposed masonry surfaces filled with mortar and tool to match existing joints. Immediately after grout work is completed remove scum and stains which have percolated through the masonry using a high-pressure steam of water and a stiff fiber bristle brush. Do not use metal tools or metal brushes for cleaning. Dry brush exposed concrete masonry unit surfaces at the end of work each day.

### 3.6.3. **Masonry Waste Disposal**

3.6.4. *Recycling:* Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

3.6.5. *Disposal as Fill Material:* Dispose of clean masonry waste, including broken masonry units, waste mortar, and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.

3.6.6. *Excess Masonry Waste:* Remove excess, clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of the DSWD's property.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 1. Cementitious Waterproofing

14 JUNE 2023

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JMM/ REV. 00

Revision	Date	Description



## CEMENTITIOUS WATERPROOFING

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUMMARY

1.2.1. This Section includes the following:

1.2.1.1. Polymer-modified cementitious waterproofing (two coat application; minimum 2mm wet film thickness) with all ancillary materials and components required for a complete watertight system for water tanks to take cement sand rendering / tiling finishes, and in other cases as indicated in drawings.

1.2.1.2. Polymer-modified cementitious waterproofing against negative water pressure (two coat application; minimum 1mm wet thick for each coat) with all ancillary materials and components required for a complete waterproofing system applied as indicated in drawings.

#### 1.3. PERFORMANCE REQUIREMENTS

1.3.1. **For potable water tanks:** Any part or component of the waterproofing system should be non-toxic; and must be complied with the requirements of British Water Research Council in relation to "Suitable Use in Contact with Potable Water"; or other equivalent standard of other national water research institutes.

1.3.2. **For resistance against negative water pressure:** The waterproofing shall be able to achieve the following minimum performance requirements according to the specified standard or equivalent recognized standards:

1.3.2.1. Resistance to negative water pressure: 3 bar minimum (DIN 1048);

1.3.2.2. Resistance to positive water pressure: 7 bar minimum (DIN 1048);

1.3.2.3. Abrasion resistance: Wear Index 1 or equivalent to 40MPa Concrete (ASTM D4060).

#### 1.4. SUBMITTALS

1.4.1. **Product data:** Manufacturer's detailed product data, method of application, recommendations and limitations of use, include manufacturer's written instructions for evaluating, preparing, and treating substrate, technical data, and tested physical and performance properties of waterproofing.

1.4.2. **Shop drawings:**

1.4.2.1. Indicate details of penetrations, abutments curb and wall transitions, internal and exterior corners, terminations, water stops, drains, outlets and sub- drainage system including tie-in with sub-drainage pipework, at construction and expansion joints and at interface with other materials.

1.4.2.2. Include drawings, elevations and details where applicable.



1.4.3. **Samples:** Contractor shall submit adequate samples for inspection and review.

## 1.5. QUALITY ASSURANCE

1.5.1. **Source Limitations:** Obtain waterproofing materials through one source from a single manufacturer. Provide accessory materials that are approved by the membrane manufacturer.

### 1.5.2. **Manufacturer Qualifications:**

1.5.2.1. Specializing in manufacturing of specified systems and high performance, commercial grade waterproofing systems and material for at least 10 years.

1.5.2.2. Waterproofing manufacturers shall be capable of providing field service, if necessary, during construction; approving acceptable applicator and application methods.

## 1.6. DELIVERY, STORAGE, AND HANDLING

1.6.1. All materials shall be delivered in manufacturer's containers, dry, undamaged and unopened. All clearly labelled with the manufacturer's name, product identification, expiration date, etc.

1.6.2. Store materials strictly in accord with manufacturer's printed recommendations.

1.6.3. Strictly follow special precautions recommended by manufacturers where flammable and hazardous materials are involved or released. Hazardous waste materials shall be legally transported and disposed of in strict conformance to local regulations.

## 1.7. PROJECT CONDITIONS

1.7.1. Do not apply waterproofing systems until substrates are in conditions that are recommended by the manufacturer.

1.7.2. Apply waterproofing system only when air and surface temperatures are between 5 deg. Celsius and 38 deg. Celsius.

## **PART 2 PRODUCTS**

### 2.1. SUPPLIER

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

### 2.2. CEMENTITIOUS WATERPROOFING SYSTEM

2.2.1. General: The waterproofing system shall be a Polymer Modified Cementitious Waterproofing system including all ancillary materials and components required for a complete watertight system in strict accord with manufacturer's recommendations.

### 2.3. CEMENTITIOUS WATERPROOFING SYSTEM AGAINST NEGATIVE WATER PRESSURE

2.3.1. General: The waterproofing system shall be a two-component Polymer Modified Cementitious Waterproofing system including all ancillary material and components required for a complete watertight system in strict accord with manufacturer's recommendations.

## **PART 3 EXECUTION**

### 3.1. EXAMINATION

3.1.1. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements and other conditions affecting performance.





3.1.2. Verify that concrete has cured and aged for a minimum time period recommended by waterproofing manufacturers.

3.1.3. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2. SURFACE PREPARATION**

3.2.1. Clean and prepare substrate according to manufacturer's written recommendations. Provide clean, dust-free, and dry substrate for waterproofing application.

3.2.2. Mask off adjoining surfaces not receiving waterproofing to prevent spillage affecting other construction.

3.2.3. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.

3.2.4. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.

3.2.5. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

### **3.3. APPLICATION**

3.3.1. Installation sequencing, timing and procedures shall be in strict accord with manufacturer's instructions and recommendations.

3.3.2. Perform application in strict accordance with manufacturer's written specification or endorsed method statement.

### **3.6. PROTECTION**

3.6.1. Ensure that waterproofing is protected from traffic, weather and damage during construction. Repair or replace all damaged waterproofing before covering with other finish materials.

3.6.2. Protect adjacent surfaces and materials from damage and soiling by the work of this Section.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 2. Cold Liquid Applied Elastomeric Waterproofing

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## COLD LIQUID APPLIED ELASTOMERIC WATERPROOFING

### PART 1 GENERAL

#### 1.1. SUMMARY

1.1.1. Section includes:

- 1.1.1.1. [07:WP1] Elastomeric urethane membrane waterproofing systems.
- 1.1.1.2. [07:WP2] Elastomeric synthetic resin based waterproofing systems
- 1.1.1.3. [07:WP3] Elastomeric rubber polymer waterproofing systems
- 1.1.1.4. [07:WP4] Elastomeric urethane membrane waterproofing exposed systems

1.1.2. Related Sections include the following:

- 1.1.2.1. "Concrete Finishing" for finishing requirements of concrete substrates, and hardener sealers applied to uncured concrete.
- 1.1.2.2. "Cementitious Waterproofing" for alternative waterproofing for immersion that may be substituted for waterproofing for immersion specified in this Section.
- 1.1.2.3. "Joint Sealers" for sealants used in conjunction with Work of this Section.
- 1.1.2.4. "Concrete and Masonry Coatings" for water repellent sealers applied to cured concrete and masonry.

#### 1.2. REFERENCES

- 1.2.1. ASTM C836 - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
- 1.2.2. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers. Tensile strength and elongation tests.
- 1.2.3. ASTM E96 - Standard Test Method for Water Vapour Transmission of Materials. Method BW.
- 1.2.4. ASTM D2240 - Shore A hardness testing
- 1.2.5. ASTM G 26 - weather-ometer testing
- 1.2.6. American Concrete Institute ACI Publication 515. IR - Guide to The Use of Waterproofing, Damp proofing, Protective and Decorative Barrier Systems for Concrete, 1985.
- 1.2.7. National Roofing Contractors' Association - NRCA Roofing And Waterproofing Manual, 4<sup>th</sup> Edition, 1996.
- 1.2.8. Local rules and regulations: current editions
- 1.2.9. National Building Code 2004

#### 1.3. SUBMITTALS

1.3.1. Shop drawings:

- 1.3.1.1. Indicate details of penetrations, abutments curb and wall transitions, internal and exterior corners, terminations, water stops, drains, outlets and sub-drainage system including tie-in with sub-drainage pipe work, at construction and expansion joints and at interface with other materials.



1.3.1.2. Include drawings, elevations and details where applicable.

1.3.2. Samples: 300 mm x 300 mm (12 in. square) of each cured membrane system specified herein, showing build-up, thickness, colour and texture specified.

1.3.2.1. Subsequently, and before any installation work commences on the project site, the applicant shall provide the DSWD with one reproducible and two prints of the approved shop drawings incorporating the modifications made.

## 1.4. QUALITY ASSURANCE

1.4.1. **Source Limitations:** Obtain waterproofing materials through one source from a single manufacturer. Provide accessory materials that are approved by the membrane manufacturer.

### 1.4.2. **Manufacturer Qualifications:**

1.4.2.1. Specializing in manufacturing of specified systems and high performance, commercial grade waterproofing systems and material for at least 10 years.

1.4.2.2. Waterproofing manufacturers shall be capable of providing field service, if necessary, during construction; approving acceptable applicator and application methods.

1.4.3. **Mock-up:** Prior to Pre-Installation Conference, prepare a mock-up of the work of this Section at a location on the job site where approved by the Architect.

1.4.3.1. Make a mock-up for each of the various types of installation (Minimum size: 6m x 6m).

1.4.3.2. The work is to be carried out under the direct supervision of the Contractor and the waterproofing manufacturer's technical representative.

1.4.3.3. Show all aspects of the work of this Section to the quality specified.

1.4.3.4. Make necessary adjustments or re-installation in the mock-up(s) to satisfy requirements of this section and secure the Architect's approval.

1.4.3.5. The mock-up(s), when approved by the Architect, will be used as a datum point for comparison with the remainder of the work of this Section for the purpose of acceptance or rejection.

1.4.3.6. Upon approval of the Architect, the mock-up(s) may become an actual part of the installation required for this Work.

### 1.4.4. **Maintenance manual:**

1.4.4.1. Upon completion of work in this section, submit one maintenance manual, identified with project name, location and date; type of system applied and surface to which system was applied, and shop drawings where necessary to fully describe the applied system.

1.4.4.2. Include recommendations for periodic inspections, care and maintenance.

1.4.4.3. Identify common causes of damage with instructions for temporary patching until permanent repairs can be made.

1.4.5. **Reference Standard:** For Work of this Section used as primary waterproofing on exterior horizontal applications, comply with applicable recommendations in the NRCA Roofing and Waterproofing Manual



## 1.5. PROJECT CONDITIONS

### 1.5.1. Environmental requirements:

1.5.1.1. Do not apply waterproofing systems until substrates are in a condition that is recommended by the manufacturer.

1.5.1.2. Apply waterproofing system only when air and surface temperatures are between 5 deg. C and 38 deg. C.

## **PART 2 PRODUCTS**

### 2.1. WATERPROOFING SYSTEMS – GENERAL

2.1.1. **General:** All waterproofing materials shall be from the same manufacturer, compatible with each other, and compatible with adhesive mortar and grout for tile and stone placed over waterproofing systems.

### 2.2. ELASTOMERIC URETHANE MEMBRANE SYSTEM

2.2.1. **Available Products:** Subject to compliance with requirements products that may be incorporated into the Work.

2.2.2. All ancillary materials and components required for a complete water-tight system in strict accord with manufacturer's instructions including, but not limited to:

2.2.2.1. Crack and joint treatment systems;

2.2.2.2. Expansion/Movement Joint Treatment:

2.2.2.3. Cold Joint treatment

2.2.2.4. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing;

2.2.2.5. Corner angle fillets and water stops where necessary recommended by waterproofing manufacturer;

2.2.2.6. Protection boards to vertical surfaces; board: As recommended by waterproofing membrane manufacturer:

2.2.2.7. Services and entry penetration accessories.

### 2.3. ELASTOMERIC SYNTHETIC RESIN BASED SYSTEMS

#### 2.3.1. **Waterproofing Membrane:**

2.3.1.1. Cold, liquid applied elastomeric solvent-free synthetic resin based waterproofing system suitable for direct application of adhesive mortar.

2.3.1.2. Acceptable products, subject to compliance with requirements, include:

2.3.2. All ancillary materials and components required for a complete, compatible water-tight system, including but not limited to:

2.3.2.1. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing

2.3.2.2. Joint treatment, corner angle fillets, and wall to wall junctions:

2.3.2.3. Services and entry penetration, and floor drain accessories.



## 2.4. WATERPROOFING FOR IMMERSION

### 2.4.1. Waterproofing Membrane:

2.4.1.1. Cold, liquid applied elastomeric solvent-free, load-bearing, self-curing liquid rubber polymer waterproofing system suitable for cementitious substrates and direct application of tile and stone using adhesive mortar.

2.4.2. All ancillary materials and components required for a complete, compatible water-tight system, including but not limited to:

2.4.2.1. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing

2.4.2.2. Joint treatment, corner angle fillets, and wall to wall junctions:

2.4.2.3. Services and entry penetration, and floor drain accessories.

## 2.5. ELASTOMERIC URETHANE MEMBRANE EXPOSED SYSTEM

2.5.1. **Available Products:** Subject to compliance with requirements products that may be incorporated into the Work.

2.5.2. All ancillary materials and components required for a complete water-tight system in strict accord with manufacturer's instructions including, but not limited to:

2.5.2.1. Crack and joint treatment systems;

2.5.2.2. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing;

2.5.2.3. Corner angle fillets and water stops where recommended by waterproofing manufacturer;

2.5.2.4. Services and entry penetration accessories.

### 2.5.3. Performance Requirements:

2.5.3.1. Description: Composite liquid polyurethane waterproofing system designed for use as waterproofing and as an exposed wearing surface on plaza decks, pedestrian walkways, and balconies.

a. Cures to form a seamless, monolithic, waterproof, abrasion resistant surface

b. Adheres to smooth concrete, to well-anchored and primed wood and to primed metal surfaces.

## 2.6. PRODUCT HANDLING

2.6.1. **Procedures:** All material shall be delivered in manufacturers' containers, dry, undamaged and unopened. All clearly labeled with the manufacturer's name, product identification, expiration date, and lot numbers intact.

2.6.1.1. Identify each container with manufacturer's name, brand name, material type, stock number, color, and application instructions.

2.6.2. Store materials strictly in accord with manufacturer's printed recommendations, copies of which will be furnished to DSWD/BGMS.

2.6.3. Special precautions recommended by the manufacturer shall be strictly followed where flammable and hazardous materials are involved or released. Hazardous waste materials shall be legally transported and disposed of in strict conformance to local regulations.



## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

- 3.1.1. Examine surfaces for conditions that will adversely affect execution, permanence, and quality of work.
- 3.1.2. Before commencing any waterproofing works, the Contractor must demonstrate on site that all materials are fully compatible with each other and with the substrates.
- 3.1.3. Examine substrates for contaminants such as water, curing compounds, hardeners, bond breakers, etc. No work shall be undertaken when the substrate surface moisture exceeds the permissible maximum, as present on site.
- 3.1.4. Verify that concrete substrates are dry and curing methods (or compounds) are compatible with waterproof system materials. Perform moisture tests as directed by waterproof system manufacturers to ensure that concrete substrates are sufficiently dry for application of elastomeric coating systems.
- 3.1.5. Do not proceed with work until unsatisfactory conditions have been corrected and examined by the manufacturer's representative.

### **3.2. PREPARATION**

- 3.2.1. Check concrete surfaces and confirm that surfaces to receive waterproofing are cured (not less than 14 days) and are dry. Concrete surfaces shall be a floated finish, free from cavities and projecting nibs, shuttering faces shall be of an equivalent standard, damaged concrete shall be made good with waterproof cement sand mortar.
- 3.2.2. Check masonry surfaces and confirm that surfaces to receive waterproofing have smooth, flush-pointed joints or cement parge coats over the entire surface. Rough brick or open texture blocks shall be made smooth by application of a waterproof sand cement render.
- 3.2.3. Prepare cracks, joints (expansion, control and construction), penetrations (drains, pipe, and columns/stanchions), wall junctures (base) and similar details in accord with manufacturer's recommendations. Remove ridges and fins.
- 3.2.4. Remove from substrate surface all contaminants which would affect bond by sandblasting, mechanical grinding, abrading, or high pressure water blasting
- 3.2.5. High-pressure air, in accord with manufacturer's recommendations. Completely remove dust, loose particles, and debris.

### **3.3. APPLICATION**

- 3.3.1. All installation sequencing, timing and procedures to be in strict accord with manufacturer's instructions and carried out under supervision of the manufacturer's technical representative.
- 3.3.2. Install sealants or apply "detail", "face" or "stripe" coating in accord with manufacturer's recommendations.
- 3.3.4. Apply primer coating in accord with manufacturer's recommendations. Conform to manufacturer's recommendations of "recoat time" for applying base coat; re-prime if "recoat time" is exceeded.
- 3.3.5. Perform application in strict accord with manufacturer's written specifications.
- 3.3.6. Apply waterproofing base coat(s) at the rate or wet film thickness required to achieve the minimum or average dry film thickness recommended by the manufacturer. Allow to cure as



recommended by the manufacturer. Where multiple base coats are indicated, apply and cure separately.

3.3.7. Fillet (at intersections of vertical and horizontal surfaces):

3.3.7.1. At all wall to floor junctions, form 25mm angle fillet.

3.3.7.2. A 25 x 25mm chamfer should be provided to all external angles / corners. All in accord with manufacturer's recommendations.

3.3.8. Protection course to vertical surfaces: Apply protection boards over waterproofing surfaces using proprietary adhesives or adhesive tapes in accord with manufacturer's recommendations.

### 3.4. FIELD QUALITY CONTROL

3.4.1. **Visual inspection:** Visually inspect waterproofing system installation thoroughly in presence of the manufacturer's representative and repair any defects as recommended by the manufacturer.

3.4.2. **Testing of Horizontal Installations:**

3.4.2.1. After allowing waterproofing system installation to completely cure and set, flood test horizontal installations with a minimum of 50 mm (2 in.) of water for at least 48 hours. Examine for, identify, and repair any leaks, then retest.

### 3.5. PROTECTION

3.5.1. Ensure that all waterproofing is protected from traffic, weather and damage during construction. Repair or replace all damaged waterproofing before covering with other finish materials.

3.5.2. Protect all insulation from damage from wetting, loading or abuse until they are under protective covering material or finish.

3.5.3. Protect adjacent surfaces and materials from damage and soiling by the work of this Section.

### 3.6. CLEANING

3.6.1. Remove all debris after completion of the work of this section. Store left over materials as agreed by DSWD/BGMS.

2.6.2. Clean adjacent surfaces and materials soiled by any work of this section.

**\*\*\* END OF SECTION \*\*\***





# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 3. Fire Stopping Sealant

14 JUNE 2023

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## **FIRESTOPPING**

### **PART 1 GENERAL**

#### **1.1. DESCRIPTION**

1.1.1. Provide UL or equivalent approved firestopping system for the closures of openings in walls, floors, and roof decks against penetration of flame, heat, and smoke or gases in fire resistant rated construction.

1.1.2. Provide UL or equivalent approved firestopping system for the closure of openings in walls against penetration of gases or smoke in smoke partitions.

#### **1.2. REFERENCES**

1.2.1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials

1.2.2. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials

1.2.3. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems

1.2.4. UL 1479 - Fire Tests of Through-Penetration Firestops

1.2.5. FIRE CODE OF THE PHILIPPINES

1.2.6. INTERNATIONAL BUILDING CODE

1.2.7. National Building Code of Philippines

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Deliver firestopping materials to the job site in factory sealed, unopened containers bearing manufacturer's name, brand, product designation, batch number and packaging date.

1.3.2. Store in unopened containers. Follow manufacturer's recommendations for storage temperatures and shelf life.

1.3.3. Follow manufacturer's recommendations for handling products containing toxic materials. Use recommended solvents and cleaning agents for cleaning tools, equipment and skin.

#### **1.4. QUALITY ASSURANCE**

1.4.1. FM, UL, or WH or other approved laboratory tested products will be acceptable. Firestopping systems shall be the products of one manufacturer Coordinate the work of the trades toward achieving this end.

#### **1.5. PROJECT CONDITIONS**

##### **1.5.1. Environmental Requirements:**

1.5.1.1. Furnish adequate ventilation if using solvent.

1.5.1.2. Furnish forced air ventilation during installation if required by the manufacturer.

1.5.1.3. Keep flammable materials away from sparks or flame.

1.5.1.4. Provide masking and drop cloths to prevent contamination of adjacent surfaces by firestopping materials.



1.5.1.5. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.

1.5.2. **Existing Conditions:** Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding. Proceed with installation only after penetrations of substrates have been completed and supporting brackets installed.

## **PART 2 PRODUCTS**

### **2.1. FIRESTOP SYSTEMS**

2.1.1. Provide either factory built (Firestop Devices) or field erected (through- Penetration Firestop Systems) to form a specific building system maintaining required integrity of the fire barrier and stop the passage of gases or smoke. Firestop systems to accommodate building movements without impairing their integrity.

2.1.2. Firestop sealants used for firestopping or smoke sealing to have the following properties:

2.1.2.1. Contain no flammable or toxic solvents.

2.1.2.2. Release no dangerous or flammable outgassing during the drying or curing of products.

2.1.2.3. Water-resistant after drying or curing and unaffected by high humidity, condensation or transient water exposure.

2.1.2.4. When installed in exposed areas, capable of being sanded and finished with similar surface treatments as used on the surrounding wall or floor surface.

2.1.3. Classified for use with the particular type of penetrating material used.

2.1.3.1. Penetrations containing loose electrical cables, computer data cables, and communications cables protected using firestopping systems that allow unrestricted cable changes without damage to the seal.

2.1.4. FM, UL, or WH rated or tested by an approved laboratory in accordance with local standards.

2.1.5. Materials to be nontoxic and noncarcinogen at all stages of application or during fire conditions and to not contain hazardous chemicals. Provide firestop material that is free from Ethylene Glycol, PCB, MEK, and asbestos.

2.1.6. For firestopping exposed to view, traffic, moisture, and physical damage, provide products that do not deteriorate when exposed to these conditions.

2.1.6.1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.

2.1.6.2. For floor penetrations with annular spaces exceeding 101 mm (4 in.) or more in width and exposed to possible loading and traffic, provide firestop systems capable of supporting the floor loads involved either by installing floor plates or by other means acceptable to the firestop manufacturer.

2.1.6.3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.



## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

3.1.1. Examine substrates and conditions with an installer present for compliance with requirements for opening configuration, penetrating items, substrates, and other conditions affecting performance of firestopping. Do not proceed with installation until unsatisfactory conditions have been corrected.

### **3.2. CONDITION OF SURFACES**

3.2.1. Inspect surfaces to receive firestopping materials and report any defects to Project Manager. Do not start work until defects have been corrected. Starting work implies acceptance of surfaces as satisfactory.

3.2.2. Unless otherwise permitted by manufacturer, do not apply firestopping materials to polycarbonates; materials that bleed oils, plasticizers or solvents; organo-metallic compounds; silicone rubber containing organo-tin compound; sulfur, polysulfides, polysulfides and other sulfur containing materials; amines, urethanes and amine-containing materials; and unsaturated hydrocarbon plasticizers.

3.2.3. Do not apply materials in confined spaces where material is not exposed to atmospheric moisture.

### **3.3. PREPARATION**

3.3.1. Remove dirt, grease, oil, laitance and form-release agents from concrete, loose materials, or other substances that prevent adherence and bonding or application of the firestopping or smoke stopping materials.

3.3.2. Remove insulation on insulated pipe for a distance of 150 mm (6 inches) on each side of the fire rated assembly prior to applying the firestopping materials unless the firestopping materials are tested and approved for use on insulated pipes.

3.3.3. Prime substrates were required by the joint firestopping system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3.4. Masking Tape: Apply masking tape to prevent firestopping from contacting adjoining surfaces that will remain exposed upon completion of work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestopping materials. Remove tape as soon as it is possible to do so without disturbing the seal of firestopping with substrates.

### **3.4. INSTALLATION**

3.4.1. Do not begin firestopping work until the specified material data and installation instructions of the proposed firestopping systems have been submitted and approved.

3.4.2. Install firestopping systems with smoke stopping in accordance with FM, UL, WH, or other approved system details and installation instructions.

3.4.3. Install smoke stopping seals in smoke partitions.

### **3.5. FIELD QUALITY CONTROL**

3.5.1. Perform manufacturer's quality control check program at least once daily and upon changing to a new lot of materials.



3.5.2. Inspect cured seals after 24 hours by removing damming materials to examine seals. Replace dams where a required part of assembly.

3.5.3. Where voids occur, fill with freshly mixed foam or solid sealant. Reinspect after added material has cured 24 hours.

3.5.4. Ensure that cured foam sealants show acceptable or better color and cell structure range per manufacturer's recommendations.

3.5.5. Remove unacceptable sealants and replace with new.

### **3.6. CLEAN-UP**

3.6.1. As work on each floor is completed, remove materials, litter, and debris.

3.6.2. Clean up spills of liquid type materials.

3.6.3. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials approved by manufacturers of firestopping products and of products in which opening and joints occur.

3.6.4. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to provide firestopping complying with specified requirements.

### **3.7. INSPECTIONS AND ACCEPTANCE OF WORK**

3.7.1. Do not conceal or enclose firestop assemblies until inspection is complete and approved by the BGMS.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 4. Joint Sealers

14 JUNE 2023

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Revision	Date	Description



## JOINT SEALERS

### **PART 1 GENERAL**

#### 1.1. Sections includes:

- 1.1.1. Sealants and joint backing with no fire resistance rating.
- 1.1.2. Pre-compressed foam sealers with no fire resistance rating.

#### 1.2. RELATED SECTIONS:

- 1.2.1. "Cold Liquid Applied Elastomeric Membrane Waterproofing": Sealants required in conjunction with waterproofing.
- 1.2.2. "Fire Resistive Joint Sealants": Sealants with fire resistance rating
- 1.2.3. "Glazing": Glazing sealants and accessories.
- 1.2.4. "Ceramic Tiling": Installation of sealant at tile.
- 1.2.5. Civil / Structural Engineer's Specifications for Structural Concrete.
- 1.2.6. Civil / Structural Engineer's Specifications for Structural Steelwork.

#### 1.3. REFERENCES

- 1.3.1. ASTM C 834 - Standard Specification for Latex Sealants.
- 1.3.2. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications.
- 1.3.3. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
- 1.3.4. ASTM C 1193 - Standard Guide for Use of Joint Sealants.
- 1.3.5. ASTM D 1667 - Standard Specification for Flexible Cellular Materials—Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
- 1.3.6. Local Rules and Regulations: Current Editions.
- 1.3.7. IBC - International Building Code; 2003 Edition.

#### 1.4. SUBMITTALS

- 1.4.1. **Samples:** Submit two samples, in appropriate size illustrating sealant colors for selection and approval.
- 1.4.2. **Manufacturer's Installation Instructions:** Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

#### 1.5. ENVIRONMENTAL REQUIREMENTS

- 1.5.1. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

### **PART 2 PRODUCTS**

#### 2.1. MANUFACTURERS

- 2.1.1. Subject to compliance with requirements and as approved by the Project Architect/Engineer. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect/engineer.



## 2.2. SEALANTS

2.2.1. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single component.

2.2.1.1. Color: Colors matching finished surfaces and approved by Architect.

2.2.1.2. Applications: Use for:

2.2.1.2.1. Control, expansion, and soft joints in masonry.

2.2.1.2.2. Joints between concrete and other materials.

2.2.1.2.3. Joints between metal frames and other materials.

2.2.1.2.4. Joints in cast plastic and FRP.

2.2.1.2.5. Other exterior joints for which no other sealant is indicated.

2.2.2. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, non-skinning, non-curing.

2.2.2.1. Applications: Use for:

2.2.2.1.1. Concealed sealant bead in sheet metal work.

2.2.2.1.2. Concealed sealant bead in siding overlaps.

2.2.3. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.

2.2.3.1. Color: Colors matching finished surfaces and approved by Architect.

2.2.3.2. Applications: Use for:

2.2.3.2.1. Interior wall and ceiling control joints.

2.2.3.2.2. Joints between door and window frames and wall surfaces.

2.2.3.2.3. Other interior joints for which no other type of sealant is indicated.

2.2.3.1. Applications: Use for concealed locations only at walls with STC requirement:

2.2.3.1.1. Sealant bead between top stud runner and structure and between bottom stud track and floor.

2.2.4. Silicone Sealant [07:JT1]: ASTM C 920, Grade NS, Class 25, Uses NT, A, G, M, O; single component, solvent curing, non-sagging, non-staining, fungus resistant, non-bleeding.

2.2.4.1. Color: Colors matching finished surfaces and approved by Architect.

2.2.4.2. Movement Capability: Plus and minus 25 percent.

2.2.4.3. Service Temperature Range: -54 to 82 degrees C.

2.2.4.4. Shore A Hardness Range: 15 to 35.

2.2.4.5. Applications: Use for:

2.2.4.5.1. Glazing.

2.2.4.5.2. Tile at wet areas

2.2.5. Polysulphide Sealant [07:JT6]: One or two-part polysulphide base polymer sealing compound conforming to ASTM C920 and ANSI A-1 16.1, Class B (non-sag grade)





2.2.5.1. Subject to compliance with requirements, available products include, but are not limited to the following:

2.2.5.1.1. Degussa; Expanseal Polysulphide Joint Sealant.

2.2.5.1.2. Pacific Polymers, Inc.; Elastoseal 230 Type I or Elasto-Seal 227 Type II (Gun Grade).

2.2.5.1.3. Pecora Corporation; Synthacalk GC-2+.

2.2.5.1.4. Polymeric Systems Inc.; PSI-350.

2.2.5.1.5. PolySpec Corp.; T-2235-M, T-2282, Thiokol 2P

2.2.5.1.6. Sika; Duoflex NS

2.2.5.1.7. Sonneborn, Division of ChemRex Inc.; Sonolastic Polysulfide Sealant.

2.2.5.1.8. Approved substitute

2.2.5.2. Type and Grade: S or M and NS (nonsag).

2.2.5.3. Class: 25.

2.2.5.4. Uses Related to Exposure: NT (non-traffic).

### **2.3. ACCESSORIES (if applicable only)**

2.3.1. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

2.3.2. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

2.3.3. Joint Backing: [07:JT21] Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

2.3.4. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

2.3.5. Compressible Neoprene Filler [07:JT31]: Any product compliant with needed requirements.

## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

3.1.1. Verify that substrate surfaces are ready to receive work.

3.1.2. Verify that joint backing and release tapes are compatible with sealant.

3.1.3. Alert the Architect/Engineer of any discrepancies, prior to commencing the Work of this section.

3.1.4. Coordinate the Work of this section with applicable trades.

### **3.2. PREPARATION**

3.2.1. Remove loose materials and foreign matter which might impair adhesion of sealant.

3.2.2. Clean and prime joints in accordance with manufacturer's instructions.

3.2.3. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.

3.2.4. Protect elements surrounding the work of this section from damage or disfigurement.



### **3.3. INSTALLATION**

- 3.3.1. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- 3.3.2. Perform installation in accordance with ASTM C 1193.
- 3.3.3. Perform acoustical sealant application work in accordance with ASTM C 919.
- 3.3.4. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- 3.3.5. Install bond breaker where joint backing is not used.
- 3.3.6. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- 3.3.7. Apply sealant within recommended application temperature ranges. Consult the manufacturer when sealant cannot be applied within these temperature ranges.
- 3.3.8. Tool joints: concave.
- 3.3.9. Pre-compressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 3 to 6 mm below adjoining surface.

### **3.4. CLEANING**

- 3.4.1. Clean adjacent soiled surfaces.

### **3.5. PROTECTION OF FINISHED WORK**

- 3.5.1. Protect sealants until cured.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 5. Architectural Joint System

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## ARCHITECTURAL JOINT SYSTEM

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUMMARY

1.2.1. This Section includes the following:

1.2.1.1. Architectural joint systems for building interiors.

1.2.1.2. Architectural joint systems for building exteriors.

1.2.2. Related Sections include the following:

1.2.2.1. "Unit Masonry Assemblies" for masonry wall joint systems.

1.2.2.2. "Firestopping" for firestopping materials

1.2.2.3. "Joint Sealers" for liquid-applied joint sealants.

#### 1.3. DEFINITIONS

1.3.1. **Maximum Joint Width:** Widest linear gap a joint system tolerates and in which it performs its designed function without damaging its functional capabilities.

1.3.2. **Minimum Joint Width:** Narrowest linear gap a joint system tolerates and in which it performs its designed function without damaging its functional capabilities.

1.3.3. **Movement Capability:** Value obtained from the difference between widest and narrowest widths of a joint opening typically expressed in numerical values (mm or inches) or a percentage (plus or minus) of nominal value of joint width.

1.3.4. **Nominal Joint Width:** The width of the linear opening specified in practice and in which the joint system is installed.

#### 1.4. SUBMITTALS

1.4.1. **Shop Drawings:** Provide the following for each joint system specified:

1.4.1.1. **Placement Drawings:** Include line diagrams showing plans, elevations, sections, details, splices, blockout requirement, entire route of each joint system, and attachments to other work. Where joint systems change planes, provide isometric or clearly detailed drawings depicting how components interconnect.

1.4.2. **Samples for Verification:** For each type of architectural joint system indicated.

1.4.2.1. Full width by 150 mm long, for each system required.

#### 1.5. QUALITY ASSURANCE

1.5.1. **Source Limitations:** Obtain interior architectural joint systems through one source from a single manufacturer.

1.5.2. **Product Options:** Drawings indicate size, profiles, and dimensional requirements of architectural joint systems and are based on the specific systems indicated.



1.5.2.1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to the Architect for review.

## 1.6. COORDINATION

1.6.1. Coordinate installation of exterior wall and soffit joint systems with roof expansion assemblies to ensure that wall transitions are watertight.

## 1.7. DELIVERY, STORAGE AND HANDLING

1.7.1. Exercise proper care in the handling of all work so as not to injure the finished surface, and take proper precautions to protect the work from damage after it is in place.

1.7.2. Deliver materials to the job site ready for use, and fabricated in as large sections and assemblies as practical. Assemblies shall be identical to submitted and reviewed shop drawings, samples and certificates.

1.7.3. Store materials under cover in a dry and clean location off the ground. Remove materials that are damaged or otherwise not suitable for installation from the job site and replace them with acceptable materials at no additional cost.

## 1.8. PROJECT CONDITIONS

1.8.1. Where necessary, check actual locations of walls and other construction to which work must fit, by accurate field measurements before fabrication. Show recorded measurements on final shop drawings and coordinate fabrication schedule with construction progress to avoid delay of work.

## PART 2 PRODUCTS

### 2.2. ARCHITECTURAL JOINT SYSTEMS, GENERAL

2.2.1. **General:** Provide architectural joint systems of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.

2.2.1.1. Furnish units in longest practicable lengths to minimize field splicing. Install hairline mitered corners where the joint changes direction or abuts other materials.

2.2.1.2. Include factory-fabricated closure materials and transition pieces, tee joints, corners, curbs, cross-connections, and other accessories as required to provide continuous joint systems.

2.2.2. Design architectural joint systems for 40mm nominal joint width and plus or minus 50 percent joint movement in all directions unless otherwise indicated in drawings.

### 2.3. ARCHITECTURAL JOINT SYSTEMS FOR BUILDING INTERIORS

2.3.1. **Manufacturers:** Subject to compliance with requirements, provide products approved by the architect.

#### 2.3.2. Architectural Joint Systems for Building Interior:

2.3.2.1. *Exposed Metal:* Aluminum or as otherwise indicated in drawings.

2.3.2.2. *Finish:* Clear anodized unless otherwise indicated in drawings.

2.3.2.3. *Gasket color:* As selected by Architect from manufacturer's full range.

2.3.2.4. *Products:* As indicated in drawings.



2.3.2.5. *Fire-Resistance Rating*: Provide joint system and fire-barrier assembly with a rating not less than that of adjacent construction unless otherwise indicated.

## 2.4. ARCHITECTURAL JOINT SYSTEMS FOR BUILDING EXTERIORS

2.4.1. **Manufacturers**: Subject to compliance with requirements and as approved by the Architect.

### 2.4.2. Architectural Joint Systems for Building Exterior:

2.4.2.1. *Exposed Metal*: Stainless steel grade 316 or as otherwise indicated in drawings.

2.4.2.2. *Gasket color*: As selected by Architect from manufacturer's full range.

2.4.2.3. *Products*: As indicated in drawings.

2.4.2.4. *Fire-Resistance Rating*: Provide joint system and fire-barrier assembly with a rating not less than that of adjacent construction unless otherwise indicated.

## 2.5. FINISHES

2.5.1. Comply with standards for recommendations for applying and designating finishes.

2.5.2. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.5.3. Appearance of Finished Work: Noticeable variations in the same piece are not acceptable.

## PART 3 EXECUTION

### 3.1. EXAMINATION

3.1.1. Examine surfaces and block outs where architectural joint systems will be installed for installation tolerances and other conditions affecting performance of work.

3.1.1.1. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2. PREPARATION

3.2.1. Prepare substrates according to architectural joint system manufacturer's written instructions.

3.2.2. Repair concrete slabs and block outs using manufacturer's recommended repair grout of compressive strength adequate for anticipated structural loadings.

3.2.3. Coordinate and furnish anchorages, setting drawings, and instructions for installing joint systems. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of joint systems.

### 3.3. INSTALLATION

3.3.1. Comply with manufacturer's written instructions for storing, handling, and installing architectural joint assemblies and materials unless more stringent requirements are indicated.

3.3.2. **Metal Frames**: Perform cutting, drilling, and fitting required to install joint systems.

3.3.2.1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.

3.3.2.2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation. Notify Architect where discrepancies occur that will affect proper joint installation and performance.



3.3.2.3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.

3.3.2.4. Locate in continuous contact with adjacent surfaces.

3.3.2.5. Standard-Duty Systems: Shim to level where required. Support underside of frames continuously to prevent vertical deflection when in service.

3.3.2.6. Heavy-Duty Systems: Repair or grout block out as required for continuous frame support and to bring frame to proper level. Shimming is not allowed.

3.3.2.7. Locate anchors at intervals recommended by the manufacturer, but not less than 3 inches (75 mm) from each end and not more than 24 inches (600 mm) o.c.

3.3.3. **Seals in Metal Frames:** Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions. Install with a minimum number of end joints.

3.3.3.1. Provide in continuous lengths for straight sections.

3.3.3.2. Seal transitions according to manufacturer's written instructions. Vulcanize or heat-weld field-spliced joints as recommended by the manufacturer.

3.3.3.3. Installation: Mechanically lock seals into frames or adhere to frames with adhesive or pressure-sensitive tape as recommended by the manufacturer.

3.3.4. **Compression Seals:** Apply adhesive or lubricant adhesive as recommended by manufacturer to both frame interfaces before installing compression seals.

3.3.5. **Foam Seals:** Install with adhesive recommended by the manufacturer.

3.3.6. **Epoxy-Bonded Seals:** Pressurize seal for time period and to pressure recommended by manufacturer. Do not over pressurize.

3.3.7. Terminate exposed ends of joint assemblies with field- or factory-fabricated termination devices.

3.3.8. **Fire-Resistance-Rated Assemblies:** Coordinate installation of architectural joint assembly materials and associated work so complete assemblies comply with assembly performance requirements.

3.3.9. **Fire Barriers:** Install fire barriers to provide continuous, uninterrupted fire resistance throughout the length of joint, including transitions and field splices.

3.3.10. **Water Barrier:** Provide water barrier at exterior joints and where called for on Drawings. Provide drainage fittings at a maximum of 50 feet (15.2 m) or where indicated.

### 3.4. PROTECTION

3.4.1. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.

3.4.2. Protect the installation from damage by work of other Sections. Where necessary due to heavy construction traffic, remove and properly store cover plates or seals and install temporary protection over joints. Reinstall cover plates or seals prior to Substantial Completion of the Work.

\*\*\* END OF SECTION \*\*\*



# ARCHITECTURAL SPECIFICATION

## DIVISION 8 - "DOORS & WINDOWS"

### Section 1. Wood Door

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description





## WOOD DOORS

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

- 1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- 1.1.2. Wood doors; configuration; fire rated and non-rated.

#### 1.2. SUMMARY

- 1.2.1. This Section includes the following:
  - 1.2.1.1. Wood doors , medium-density overlay, hardboard, and plastic- laminate faces.
  - 1.2.1.2. Factory finishing flush wood doors.
  - 1.2.1.3. Factory fitting flush wood doors to frames and factory machining for hardware.
  - 1.2.1.4. Louvers for flush wood doors.
- 1.2.2. Related Sections include the following:
  - 1.2.2.1. "Finish Carpentry" for wood door frames.
  - 1.2.2.2. "Glazing" for glass view panels in flush wood doors.

#### 1.3. REFERENCES

- 1.3.1. AWI P-200 – Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute.
- 1.3.2. NFPA 80 – Standard for Fire Doors and Fire Windows; National Fire Protection Association.
- 1.3.3. NFPA-105 Recommended Practice for Installation of Smoke-Control Door Assemblies.
- 1.3.4. NFPA 252 – Standard Methods for Fire Tests of Door Assemblies; National Fire Protection Association.
- 1.3.5. WDMA – Window and Door Manufacturers Association: I.S. 1-A Industry Standard for Architectural Flush Wood Doors.
- 1.3.6. UL (BMD) – Building Materials Directory; Underwriters Laboratories Inc.
- 1.3.7. British Standards Institution (BSI)
- 1.3.8. National Building Code of the Philippines
- 1.3.9. Quezon City's Local Rules and Regulations
- 1.3.10. Fire Code of the Philippines

#### 1.4. SUBMITTALS

- 1.4.2. **Shop Drawings:** Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.
  - 1.4.2.1. Indicate dimensions and locations of mortises and holes for hardware.
  - 1.4.2.2. Indicate dimensions and locations of cutouts.



1.4.2.3. Indicate requirements for veneer matching.

1.4.2.4. Indicate doors to be factory finished and finish requirements.

1.4.2.5. Indicate fire ratings for fire doors.

1.4.3. **Samples for Initial Selection:** Color charts consisting of actual materials in small sections for the following:

1.4.3.1. *Plastic-Laminate Door Faces:* Show the full range of colors, textures, and patterns available.

1.4.3.2. *Faces of Factory-Finished Doors:* Show the full range of colors available for stained and opaque finishes.

1.4.4. **Samples for Verification:**

1.4.4.1. For each door type specified, provide one full size mockup completed with hardware installation, representing actual product, color, and finishes for verification.

## 1.5. QUALITY ASSURANCE

1.5.1. **Source Limitations:** Obtain flush wood doors through one source from a single manufacturer.

1.5.2. **Fire-Rated Wood Doors:**

1.5.2.1. *Local codes and regulations:* Fire-rated doors to comply with local codes and regulations and approved by the Fire Services Department.

1.5.3. **Non-Rated Wood Doors:** Conform to National building code and local codes and regulations for fire retardant requirements, and approved by Fire Department.

1.5.4. Maintain at the project site a copy of all specified door quality standards for review during installation and finishing.

## 1.6. DELIVERY, STORAGE, AND HANDLING

1.5.6.1. Comply with the Care and Installation guidelines as described in AWI Quality Standards Illustrated, Section 1300 and manufacturer's written instructions.

1.5.6.2. Package doors individually in plastic bags or cardboard cartons. Plastic wrap and protect doors during transit, storage and handling to prevent damage, soiling or deterioration.

1.5.6.3. Accept doors on site in manufacturer's packaging. Inspect for damage.

1.5.6.4. Mark each door on top and bottom rail with the opening number used on Shop Drawings.

## 1.7. PROJECT CONDITIONS

1.7.1. Coordinate the work with door opening construction, door frame and door hardware installation.

## 1.8. WARRANTY

1.8.1. The manufacturers and installers shall jointly provide a twenty years warranty against material defects, fire protection and workmanship for work of this section.



## **PART 2 PRODUCTS**

### **2.1. MANUFACTURER**

2.1.1. All doors specified in this section shall be proprietary products from a single manufacturer. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

### **2.2. DOOR CONSTRUCTION, GENERAL**

2.2.1. Requirements for all doors:

2.2.1.3. Construction: Five plies with stiles and rails bonded to core, then the entire unit abrasive planed before veneering or before faces and crossbands are applied unless otherwise specified.

2.2.1.3.1. Wood veneer faced doors: Minimum face veneer thickness shall be 0.5mm at 12% moisture content after finish sanding.

2.2.1.4. *Thickness*: 45mm unless otherwise specified.

2.2.1.5. *Blocking*: Provide composite blocking with improved screw- holding capability approved for use in doors of fire ratings indicated as needed to eliminate through-bolting hardware.

2.2.1.6. ANSI/WDMA I.S. 1-A Performance Duty Level: Heavy-duty.

### **2.3. FABRICATION**

2.3.1. Fabricate doors in sizes indicated for Project-site fitting.

2.3.2. Fabricate wood doors in accordance with required sizes and standards.

2.3.3. Fabricate fire rated doors in accordance with requirements of Underwriters' Laboratories. Attach fire rating label to door.

2.3.4. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements in NFPA 80 for fire-rated doors.

2.3.7. **Fire Retardant Treatment**: Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 50, maximum, when tested in accordance with ASTM E84.

2.3.8. **Transom and Side Panels**: Fabricate matching panels with same construction, exposed surfaces, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.

2.3.8.1. Fabricate door and transom panels with full-width, solid lumber meeting rails. Provide factory-installed spring bolts for concealed attachment into jambs of metal door frames.

2.3.9. **Openings**: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required.

2.3.10. **Light Openings**: Trim openings with moldings of material and profile indicated.

2.3.11. **Exterior Doors**: Factory treat exterior doors with water repellent after manufacturing has been completed.



## 2.4. FACTORY FINISHING

2.4.1. **General:** Comply with the required design and finish indicated on drawings unless otherwise noted.

## **PART 3 EXECUTION**

### 3.1. EXAMINATION

3.1.1. Examine doors and install door frames before hanging doors.

3.1.1.1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.

3.1.1.2. Reject doors with defects.

3.1.2. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2. INSTALLATION

3.2.1. **Hardware:** For installation, see "Door Hardware."

3.2.2. Install doors to comply with manufacturer's written instructions, and as required and indicated.

3.2.3. Install fire-rated doors in corresponding fire-rated frames according to local standards.

3.2.4. Condition doors to average temperature and humidity in the area of installation for not less than 48 hours prior to installation. Store doors per recommendations.

3.2.5. Set plumb, level, square and true. Install work after building humidity is at an acceptable level.

3.2.6. Install in a neat and workmanlike manner, free from hammer or tool marks, open joints or slivers.

3.2.7. Remove and replace all doors found to be warped, twisted, bowed, or otherwise damaged. Do not install doors which cannot be properly fitted to frames.

3.2.8. Coordinate installation of doors with installation of frames and hardware.

3.2.9. Ensure that smoke gaskets are in-place before prefinished door installation.

3.2.10. **Job-Fitted Doors:** Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.

3.2.10.1. Clearances: Provide 3.2 mm at heads, jambs, and between pairs of doors. Provide 3.2 mm from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 6.4 mm from bottom of door to top of threshold.

3.2.10.1.1. Comply with NFPA 80 for fire-rated doors.

3.2.10.2. Bevel non-fire-rated doors 3-1/2 degrees at lock and hinge edges.

3.2.10.3. Bevel fire-rated doors 3-1/2 degrees at lock edge; trim stiles and rails only to extent permitted by labeling agency.

3.2.11. **Factory-Fitted Doors:** Align in frames for uniform clearance at each edge.

3.2.12. **Factory-Finished Doors:** Restore finish before installation if fitting or machining is required at Project site.



### 3.3. ADJUSTMENTS

3.3.1. **Operation:** Rehang or replace doors that do not swing or operate freely.

3.3.2. **Finished Doors:** Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

### 3.4. PROTECTION

3.4.1. Provide temporary and removable protection for installed products to protect installed work from damage by construction operations.

3.4.2. Do not partially cover door surfaces with paper, cardboard, or any other opaque covering that will create uneven aging of wood veneer.

3.4.3. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 8 - "DOORS & WINDOWS"

### Section 4. Door Hardware

14 JUNE 2023

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Revision	Date	Description



## DOOR HARDWARE

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUBMITTALS

1.2.1. **Product Data:** Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

1.2.2. **Samples for Initial Selection:** For each finish, color, and texture required for each type of door hardware indicated.

##### 1.2.3. **Samples for Verification:**

1.2.3.1. Submit minimum 50-by-100-mm plate Samples of each type of finish required, except primed finish.

1.2.3.2. For exposed door hardware of each type, in specified finish, full size. Tag with full description for coordination with the door hardware sets. Submit Sample before, or concurrent with, submission of the final door hardware sets.

1.2.3.3. Samples will be returned to the Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.

1.2.4. **Shop Drawings:** Details of electrified door hardware, indicating the following:

1.2.4.1. *Wiring Diagrams:* Power, signal, and control wiring. Include the following:

1.2.4.1.1. System schematic.

1.2.4.1.2. Point-to-point wiring diagram.

1.2.4.1.3. Riser diagram.

1.2.4.1.4. Elevation of each door.

1.2.4.2. Detail interface between electrified door hardware, access control and life safety system.

1.2.4.3. *Operation Narrative:* Describe the operation of doors controlled by electrified door hardware.

#### 1.3. DELIVERY, STORAGE AND HANDLING

1.3.1. **Delivery:** coordinate delivery to appropriate locations (shop or field).

1.3.1.1. Permanent keys and cores: secured delivery direct to the DSWD/BGMS

1.3.2. **Acceptance at Site:** Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

1.3.3. **Storage:** Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.



## 1.4. PROJECT CONDITIONS

1.4.1. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical as the same operation and quality as type specified, subject to Architect's approval.

## PART 2 PRODUCTS

### 2.1. DISCLAIMER

2.1.1. Named Manufacturers or Manufacturers' products are for reference of quality and standard required for the type of specified product only. The acceptance of the actual product for the works is subject to compliance with requirements of this specification, including compliance with Philippine National Building codes and regulations and accepted by the Philippine Fire Code.

2.1.2. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

### 2.2. SCHEDULED DOOR HARDWARE

2.2.1. **General:** Provide door hardware for each door to comply with requirements in this Section and door hardware sets indicated in the door schedule.

2.2.1.1. **Door Hardware Sets:** Provide quantity, item, size, finish or color indicated, and products equivalent in function and comparable in quality to named products and complying with standards referenced.

2.2.1.2. **Sequence of Operation:** Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

### 2.3. HINGES

2.3.1. **Butts and Hinges:** Approved Brand only.

2.3.2. **Door swing:** drawings typically depict doors at 90 degrees, doors will actually swing to maximum allowable. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow the door to stand parallel to the wall for true 180-degree opening. Advise the architect if 8-inch width is insufficient.

2.3.3. **Conventional Hinges:** Steel or stainless steel pins and concealed bearings. Hinge open widths minimum, but of sufficient throw to permit maximum door swing.

2.3.3.1. Three hinges per leaf to 7-foot, 6-inch height. Add one for each additional 30 inches in height, or any fraction thereof.

2.3.3.2. Extra heavy weight hinges on doors over 3 foot, 5 inches in width.

2.3.3.3. Extra-heavy weight hinges on doors with panic hardware or fire exit devices.

2.3.3.4. Out swinging exterior doors: non-ferrous with non-removable (NRP) pins.

2.3.3.5. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.

2.3.3.6. Provide shims and shimming instructions for proper door adjustment.

2.3.4. **Continuous Hinges:**

2.3.4.1. *Geared-type aluminum at exteriors.*

2.3.4.1.1. Heavy-duty, extra-bearing units for doors over 3 foot, 5 inches in width.





2.3.4.1.2. Heavy-duty, extra-bearing units for doors with panic hardware or fire exit devices.

2.3.4.1.3. Use wide-throw units where needed for maximum degree of swing, advise the architect if commonly available hinges are insufficient.

2.3.4.2. *Pinned steel/stainless steel type*: continuous stainless steel, 0.25-inch diameter stainless-steel hinge pin.

2.3.4.2.1. Use engineered application-specific wide-throw units as needed to provide maximum swing degree of swing, advise the architect if required width exceeds 8 inches.

2.3.5. **Pivots**: high-strength forged bronze or stainless steel, tilt-on precision bearing and bearing pin.

2.3.5.1. Bottom and intermediate pivots: adjustability of minus 1/16 inch, plus 1/8 inch.

## 2.4. LOCKSETS, LATCHSETS, DEADBOLTS

2.4.1. **Mortise Locksets and Latch sets**: as scheduled.

2.4.1.1. *Chassis*: cold-rolled steel, handing field-changeable without disassembly.

2.4.1.2. *Latch bolts*: 3/4-inch throw stainless steel anti-friction type.

2.4.1.3. *Lever Trim*: through-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tube design unacceptable.

2.4.1.3.1. *Spindles*: security design independent breakaway. Breakage of the outside lever does not allow access to the inside lever's hub works to gain wrongful entry.

2.4.1.4. *Thumb turns*: accessible design not requiring pinching or twisting motions to operate.

2.4.1.5. *Deadbolts*: stainless steel 1-inch throw.

2.4.1.6. *Electric operation*: Manufacturer-installed continuous duty solenoid.

2.4.1.7. *Strikes*: 16 gauge curved steel, bronze or brass with 1-inch deep box construction, lips of sufficient length to clear trim and protect clothing.

2.4.1.8. *Certifications*:

2.4.1.9. ANSI A156.13, 1994, Grade 1 Operational, Grade 1 Security.

2.4.1.10. ANSI/ASTM F476-84 Grade 31 UL Listed.

2.4.2. **Extra Heavy Duty Cylindrical Locks and Latches**: as scheduled.

2.4.2.1. *Chassis*: cylindrical design, corrosion-resistant plated cold-rolled steel, through-bolted.

2.4.2.2. *Locking Spindle*: stainless steel, interlocking design.

2.4.2.3. *Latch Retractors*: forged steel. Balance of inner parts: corrosion resistant plated steel, or stainless steel.

2.4.2.4. *Backset*: 2-3/4" typically, more or less as needed to accommodate frame, door or other hardware.



2.4.2.5. *Lever Trim*: accessible design, independent operation, spring-cage supported, minimum 2" clearance from lever mid-point to door face.

2.4.2.6. *Electric operation*: Manufacturer-installed continuous duty solenoid.

2.4.2.7. *Strikes*: 16 gauge curved steel, bronze or brass with 1" deep box construction, lips of sufficient length to clear trim and protect clothing.

2.4.2.8. *Certifications*:

2.4.2.8.1. ANSI A156.2, 1994, Series 4000, Grade 1.

2.4.2.8.2. UL listed for A label and lesser class single doors up to 4ft x 8ft.

2.4.3. **Standard Duty Cylindrical Locks and Latches**: as scheduled.

2.4.3.1. *Chassis*: cylindrical design, corrosion-resistant plated cold-rolled steel, through-bolted.

2.4.3.2. *Locking Spindle*: stainless steel, interlocking design.

2.4.3.3. *Latch Retractors*: forged steel. Balance of inner parts: corrosion resistant plated steel or stainless steel.

2.4.3.4. *Backset*: 2-3/4" typically, more or less as needed to accommodate frame, door or other hardware.

2.4.3.5. *Lever Trim*: accessible design, independent operation, spring-cage supported, minimum 2" clearance from lever mid-point to face of door.

2.4.3.6. *Certifications*:

2.4.3.6.1. ANSI A156.2, 1994, Series 4000, Grade 2

2.4.3.6.2. UL listed for A label and lesser class single doors up to 4ft x 8ft.

## 2.5. EXIT DEVICES / PANIC HARDWARE

2.5.1. **General features**:

2.5.1.1. Independent lab-tested 1,000,000 cycles.

2.5.1.2. Push-through push-pad design. No exposed push-pad fasteners, no exposed cavities when operated. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices.

2.5.1.3. 0.75-inch throw deadlocking latch bolts.

2.5.1.4. End caps: impact-resistant, flush-mounted. No raised edges or lips to catch carts or other equipment.

2.5.1.5. No exposed screws to show through glass doors.

2.5.1.6. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.

2.5.1.7. Releasable in normal operation with 15-lb. maximum operating force per UBC Standard 10-4, and with 32 lb. maximum pressure under 250- lb. load to the door.

2.5.1.8. Flush end cap design as opposed to typical "bottle-cap" design end cap.

2.5.2. **Specific features**:



2.5.2.1. *Non-Fire Rated Devices*: cylinder dogging.

2.5.2.2. *Lever Trim*: Breakaway type, forged brass or bronze escutcheon min .130" thickness, compression spring drive, match lockset lever design.

2.5.2.3. *Rod and latch guards* with sloped full-width kick plates for doors fitted with surface vertical rod devices with bottom latches.

2.5.2.4. *Fire-Labeled Devices*: UL label indicating "Fire Exit Hardware". Vertical rod devices less bottom rod (LBR) unless otherwise scheduled.

2.5.2.5. *Impact recessed devices*: 1-1/4inch projection when push-pad is depressed. Sloped metal end caps to deflect carts, etc. No pinch points to catch skin between the touch bar and door.

2.5.2.6. *Delayed Egress Devices*: Function achieved within a single exit device component, including latch, delayed locking device, request-to-exit switch, nuisance alarm, remote alarm, key switch, indicator lamp, relay, internal horn, door position input, external inhibit input plus fire alarm input. NFPA 101 "Special Locking Arrangement" compliant.

2.5.2.7. *Electrically Operated Devices*: Single manufacturer source for electric latch retraction devices, electrically controlled trim, power transfers, power supplies, monitoring switches and controls.

2.5.2.8. *Removable Mullions*: Removable with a single turn of building key. Securely reinstalled without need for key. Furnish storage brackets for securely storing the mullion away from the door when removed.

## 2.6. CLOSERS

2.6.1. **Accessibility Requirements**: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with ANSI A117.1.

2.6.2. Comply with the following maximum opening-force requirements:

2.6.2.1. *Interior, Non-Fire-Rated Hinged Doors*: 5lbf (22.2 N) applied perpendicular to door.

2.6.2.2. *Sliding or Folding Doors*: 5 lbf (22.2 N) applied parallel to the door at latch.

2.6.2.3. *Fire Doors*: Minimum opening force allowable by authorities having jurisdiction.

2.6.2.4. *Means of Egress Doors*: Comply with NFPA 101. Door closers shall not require more than 30 lbf (133 N) to set the door in motion and not more than 15 lbf (67 N) to open the door to minimum required width.

2.6.3. **Surface Closers**:

2.6.3.1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome silicon steel spring.

2.6.3.2. ISO 2000 certified. Units stamped with date-of-manufacture code.

2.6.3.3. Independent lab-tested 5,000,000 cycles.

2.6.3.4. Non-sized, non-handed and adjustable. Place closers inside buildings, stairs and rooms.



2.6.3.5. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.

2.6.3.6. Separate adjusting valves for closing speed, latching speed and backcheck, fourth valve for delayed action where scheduled.

2.6.3.7. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.

2.6.3.8. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.

2.6.3.9. Exterior doors do not require seasonal adjustments in temperatures from 120 degrees F to 0 degrees F, furnish data on request.

2.6.3.10. Non-flaming fluid will not fuel door or floor covering fires.

2.6.3.11. Pressure Relief Valves (PRV): unsafe, not permitted.

2.6.4. **Floor Closers:** hydraulically controlled, cement case, maximum degree dead stop permitted by trim or adjacent structure. Special pins, floor pans and longer spindles when needed to accommodate floor and jamb conditions.

2.6.5. **High Security Closers:** Removable heavy gauge metal case. Cylinders independent test lab certified to exceed 10,000,000 cycles. Vandal and tamper resistant forged steel arm. Exposed fasteners: pinned TORX type.

2.6.5.1. *Advanced Variable Backcheck (AVB):* where scheduled, these units commence backcheck at approximately 45 degrees.

2.6.6. **Overhead Concealed Closers:** Power transmitted to the door separately from hanging means. Closer spindles do not support the door. Cast iron cylinders with hydraulically checked rack and pinion construction and single piece forged pistons. Separate noncritical sweep and latch speed valves.

2.6.6.1. Concealed in 1-3/4inch x 4-1/2inch tube, double-lever arm power transmission.

2.6.6.2. 10,000,000 cycle-tested cylinder, double-lever arm power transmission.

2.6.7. **Electromagnetic Hold-Open Closers:** Integrate with UL listed fire/life-safety alarm systems.

2.6.7.1. Multi-point units: hold-open bypass at 80 deg or 140 deg. Swingfree/no-drift arms at pull-side mounted units.

2.6.8. **Low-Energy Door Operators:** Comply with ANSI/BHMA 156.19 Electric power-open, hydraulically checked spring power closing. Modular construction. Finished metal cover. Field-adjustable opening force, opening speed, time-open, closing and latching speeds. Door reopens and the timing cycle restores if the system reacts during the closing cycle. Breakaway clutch protection from forced closing. Door, frame, motor and drivetrain protected by attenuated initiation of opening cycle.

2.6.8.1. Self-contained low-voltage power supply, terminal strip and sequencing for incorporation of electric hardware with system operation.

## 2.7. OTHER HARDWARE

2.7.1. **Automatic Flush Bolts:** Low operating force design, "LBR" type where scheduled.

2.7.2. **Overhead Stops:** Stainless steel (100 series). Non-plastic mechanisms and finished metal end caps. Field-changeable hold-open, friction and stop-only functions.



2.7.3. **Kick Plates:** Four beveled edges, .050 inches minimum thickness, height and width as scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.

2.7.4. **Door Stops:** Provide stops to protect walls, casework or other hardware.

2.7.5. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide an overhead type.

2.7.5. **Seals:** Finished to match adjacent frame color. Resilient seal material: polypropylene, nylon brush, or solid high-grade neoprene. UL label applied to seals on rated doors. Substitute products: certify that the products equal or exceed specified material's thickness and durability. Proposed substitutions: submit for approval.

2.7.5.1. *Solid neoprene:* MIL Spec. R6855-CL III, Grade 40.

2.7.5.2. Non-corroding fasteners at in-swinging exterior doors.

2.7.5.3. *Sound control openings:* Use components tested as a system using nationally accepted standards by independent laboratories. Ensure that the door leafs have the necessary sealed-in-place STC ratings. Adhesive mounted components are not acceptable. Fasten applied seals over the bead of sealant.

2.7.5.4. *Fire-rated Doors, Resilient Seals:* UL10C compliant. Coordinate with selected door manufacturers' and selected frame manufacturers' requirements. Where rigid housed resilient seals are scheduled in this section and the selected door manufacturer only requires an adhesive mounted resilient seal, furnish rigid housed seal at minimum, or both the rigid housed seal plus the adhesive applied seal. Adhesive applied seals alone are deemed insufficient for this project where rigid housed seals are scheduled.

2.7.5.5. *Fire-rated Doors, Intumescent Seals:* Furnished by selected door manufacturer. Furnish fire-labeled opening assembly complete and in full compliance with UL10C. Where required, intumescent seals vary in requirement by door type and door manufacture -- careful coordination required. Adhesive Applied intumescent strips are not acceptable, use concealed-in-door-edge type or kerfed-in-frame type.

2.7.6. Automatic door bottoms: low operating force units. Doors with automatic door bottoms plus head and jamb seals cannot require more than two pounds operating force to open when closer is disconnected.

2.7.7. **Thresholds:** Comply with requirements below, as scheduled and per details.

2.7.7.1. Standard: BHMA A156.21.

2.7.7.2. *Accessibility Requirements:* Where thresholds are indicated to comply with accessibility requirements, comply with ANSI A117.1.

2.7.7.2.1. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.

2.7.7.2.2. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.

2.7.7.3. *Exteriors:* Seal perimeter to exclude water and vermin. Use butyl rubber or polyisobutylene sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Non-ferrous 1/4inch fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).



2.7.7.4. Fire-rated openings, 90min or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use the threshold unit as scheduled. If none is scheduled, request direction from the Architect.

2.7.7.5. Fire-rated openings, 3hour duration: Thresholds, where scheduled, to extend full jamb depth.

2.7.7.6. Acoustic openings: Set units in full bed of Division-7-compliant butyl rubber or polyisobutylene sealant, leave no air space between threshold and substrate.

2.7.7.7. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.

2.7.7.8. Substitute products: certify that the products equal or exceed specified material's thickness and quality.

2.7.7.9. Proposed substitutions: submit for approval.

2.7.8. **Fasteners:** Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

2.7.9. **Through-bolts:** Do not use. Coordinate with wood doors, ensure provision of proper blocking to support wood screws for mounting panic hardware and door closers. Coordinate with metal doors and frames, ensure provision of proper reinforcement to support machine screws for mounting panic hardware and door closers.

2.7.10. **Silencers:** Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Omit where adhesive mounted seal occurs. Leave no unfilled/uncovered pre-punched silencer holes.

2.7.11. **Key Control Software:** Same manufacturer as key cylinders, supply to DSWD.

2.7.12. **Wall- & Floor-mounted electromagnetic door holders:** Incorporate into the U.L.-listed fire & life-safety system, doors release to allow closure and latching when the door's zone is in alarm state. Use the minimum projection required to allow the door to open as widely as allowed by wall conditions and projection of door hardware.

2.7.13. **Stainless Steel Guard Rails:** Tubular stainless steel welded construction, #8 standard finish, no mid-panels, 6-inch minimum concrete embedment of forward vertical member, wall attachment at four points using 1/4-inch minimum diameter fasteners through integral welded strap.

## 2.8. FINISH

2.8.1. **Standard:** BHMA A156.18, as indicated in door hardware sets and schedule.

2.8.2. Areas using BHMA 626 to have push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.

2.8.3. **Door closers:** factory powder coated to match other hardware, unless otherwise noted.

2.8.4. **Aluminum items:** match predominant adjacent material. Seals to coordinate with frame color.

## 2.9. KEYING REQUIREMENTS

2.9.1. **Key System:** Manufacturer's utility-patented keyway, conventional cylinders. Utility patent protection to extend at least until 2014. Key blanks available only from factory direct sources, not available from after-market key blank manufacturers. For estimate use factory GMK charge.



Initiate and conduct meetings(s) with DSWD and Security & Safety Consultants representatives to determine system keyway(s), structure and degree of geographic exclusivity. Furnish DSWD's written approval of the system.

2.9.1.1. New factory registered master key system.

2.9.1.2. *Non-I.C. construction keying*: furnish inserted type partial key. At substantial completion, remove inserts in DSWD's presence; demonstrate consequent non operability of construction key. Give all removed inserts and all construction keys to DSWD/BGMS.

2.9.4. **Permanent keys**: furnish secured shipment direct from point of origination to DSWD.

## **PART 3 EXECUTION**

### **3.1. PREPARATION**

3.1.1. Ensure that walls and frames are square and plumb before hardware installation.

3.1.2. Locate hardware per ANSI A250.8 and applicable building, fire, life-safety, accessibility, and security codes.

3.1.2.1. Notify the Architect of any code conflicts before ordering material.

3.1.2.2. **Mounting Heights**: Mount door hardware units at heights indicated on Drawings unless otherwise indicated or required to comply with governing regulations.

3.1.2.3. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.

3.1.3. **Overhead stops**: before installing, determine proposed locations of furniture items, fixtures, and other items to be protected by the overhead stop's action.

3.1.4. Existing frames and doors scheduled to receive new hardware: carefully remove existing hardware, tag and bag, and turn over to DSWD.

3.1.4.1. Patch and fill wood frames and doors with solid wood dutchments before cutting for new hardware. Do not reuse existing screw holes - - fill with dowel plugs and re-pilot.

3.1.4.2. *Metal doors/frames*: Weld or fasten with screws: filler pieces in existing hardware cut-outs and mortises not scheduled for re-use by new hardware. Leave surfaces smooth - - no applied patches.

3.1.4.3. Remove unused existing floor closers, fill empty floor closer cavities with concrete.

### **3.2. INSTALLATION**

3.2.1. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by the Architect.

3.2.1.1. *Gaskets*: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

3.2.1.2. When hardware is to be attached to an existing metal surface and insufficient reinforcement exists, use approved or as indicated anchoring devices for screws.

3.2.1.3. Use manufacturers' fasteners furnished with hardware items, or submit a Request for Substitution with the Architect.



3.2.1.4. Replace fasteners damaged by power-driven tools.

3.2.2. Locate floor stops no more than 4 inches from walls and not within paths of travel. See paragraph 2.3 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where the situation is questionable or difficult, contact the Architect for direction.

3.2.3. Locate overhead stops for minimum 90 degrees and maximum allowable degree of swing.

3.2.4. Drill pilot holes for fasteners in wood doors and/or frames.

3.2.5. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to DSWD items not scheduled for reuse.

### 3.3. ADJUSTING

3.3.1. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.

3.3.1.1. Hardware damaged by improper installation or adjustment methods to be repaired or replaced to DSWD's satisfaction.

3.3.1.2. Adjust doors to fully latch with no more than 1 pound of pressure.

3.3.1.3. Adjust delayed-action closers on fire-rated doors to fully close from fully opened position in no more than 10 seconds.

3.3.2. **Inspection:** Use hardware supplier. Include supplier's report with closeout documents.

### 3.4. DEMONSTRATION

3.4.1. Demonstrate electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

### 3.5. PROTECTION/CLEANING

3.5.2. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.

3.5.3. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

### 3.6. SCHEDULE OF FINISH HARDWARE

3.6.1. See door schedule for hardware set assignments.

**\*\*\* END OF SECTION \*\*\***





# ARCHITECTURAL SPECIFICATION

## DIVISION 8 - "DOORS & WINDOWS"

### Section 5. Glazing Works

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## GLAZING WORKS

### **PART 1 GENERAL**

#### **1.1. SCOPE**

- 1.1.1. The work includes the supply and furnishing of materials, including equipment, and performing labor necessary to complete the installation of glazing works as specified and as shown on drawings and schedules.

#### **1.2. SUBMITTALS**

##### **1.2.1. Samples**

Submit duplicate 250 mm (10 inch) glass samples, factory labeled, of each type of glass specified herein.

##### **1.2.2. Shop Drawings**

Show complete details of setting methods and materials for the type of glazing material specified.

#### **1.3. DELIVERY AND STORAGE**

Deliver products to the project site in unopened containers, labeled plainly with manufacturer's names and brands. Store glass and setting materials in a safe, dry location and do not unpack until needed for installation. Handle and install materials in a manner that will protect them from damage.

#### **1.4. ENVIRONMENTAL CONDITIONS**

Provide sufficient ventilation to prevent condensation of moisture on glazing work during installation. Do not perform glazing work during damp or rainy weather.

### **PART 2 PRODUCTS**

#### **2.2. GLASS**

Conforming to Fed. Specs. DD-G-451d and DD-G-1403B, unless specified otherwise. In certain glazed panels, provide safety glazing material conforming to Consumer Product Safety Commission.

##### **2.2.1. Clear Sheet or Float Glass**

Shall be transparent flat glass that meets the requirements and tolerances of Fed. Specs. DD-G-451d, 6 mm (1/4 inch) thick, unless otherwise specified. Provide at windows where clear glass is indicated or specified.

##### **2.2.2. Tinted Float Glass**

Conforming to Fed. Specs. DD-G-451d, of high quality and effective in reducing glare and heat transmittance, 6 mm (1/4 inch) thick. Tint and shade will be with a light transmittance of approximately 50%. Provide at windows where tinted glass is indicated or specified.

##### **2.2.3. Tempered Glass (Clear and Tinted)**

Tempered glass shall be 12 mm (1/2 inch) thick, reflective glass and clear glass as indicated on the drawings.

##### **2.2.4. Mirror Glass**

Shall be of high quality float glass free from imperfections and impurities, 6 mm (1/4 inch) thick. Silvering shall be performed by modern continuous operation



under controlled conditions. The coating shall be of pure silver and of adequate thickness to provide reflectivity of 83% or more of incident light, and shall be without pinholes or other defects visible to the naked eye.

**2.2.5. Reflective Glass / Reflective Blue**

Shall be 12 mm (1/2 inch) thick, unless otherwise specified. Shade shall be selected by the Architect.

**2.2.6. Wired Glass**

Shall meet the requirements of Underwriters Laboratories as a fire retardant material. Wire glass shall also conform to the requirements of the National Fire Protection Association (NFPA) 257 "Standard for Fire Test of Window Assemblies". Wire glass shall be clear, polished, diamond mesh and a minimum of 6 mm (1/4 inch) thick. Provide wire glass to glass areas wherever safety requirements from fire are necessary.

**2.2.7. Low-E**

Shall conform to the Philippine green building code and other reference codes.

**2.2.8. Double Glazed**

Shall conform to the Philippine Green Building Code and other reference codes.

**2.2. SETTING MATERIALS**

Provide setting materials of the types required for the applicable setting method, unless specified otherwise herein. Do not use metal sash putty, non-skinning compound, nonresident preformed sealers, or impregnated preformed gaskets. Materials exposed to view and unpainted shall be gray or neutral color.

**2.2.1. Elastomeric Sealant**

Use a channel or stop glazing metal sash. Sealant shall be chemically compatible with setting blocks, edge blocks, and sealing tapes. Color of sealant shall be as selected.

**2.2.2. Preformed Channels**

Neoprene, vinyl or rubber, NAAMM SG-1, or any recommended product by the glass manufacturer for the particular condition.

**2.2.3. Sealing Tapes**

Preformed, semisolid, polymeric based material of proper size and compressibility for the particular condition. Use only where glazing rabbet is designed for tape recommended by the glass or sealant manufacturer. Provide spacer shims for use with compressible tapes.

**2.2.4. Setting Blocks and Edge Blocks**

Lead or neoprene of 70 to 90 Shore "A" durometer hardness, chemically compatible with sealant used, and of sizes recommended by the glass manufacturer.

**2.2.5. Accessories**

As required to provide a complete installation, including glazing point clips shams, angles, beads, and spacer strips. Provide non-corroding metal accessories. Provide primers sealers and cleaners as recommended by the glass and sealant manufacturers.

**PART 3 INSTALLATION**



### **3.1. PRECAUTIONS AND PROCEDURES**

Installation shall be according to the manufacturer's guide or manual. Determine the sizes to provide the required edge clearances by measuring the actual opening to receive the glass. Grind smooth all edges of glass that will be exposed in finish work. Leave labels in place until the installation is approved. Securely fix movable items or keep in a closed and locked position until the glazing compound has thoroughly set.

### **3.2. GLASS SETTING**

Items to be glazed shall be either shop or field glazed using glass of the quality and thickness specified or indicated. Preparation and glazing, unless otherwise specified or approved. Aluminum windows may be glazed in conformance with one of the glazing methods described in the standards under which they are produced, except that face puttying with no bedding will not be permitted. Handle and install glazing materials in accordance with the manufacturer's instructions. Use beads or stops, which are furnished with the items to be glazed to secure the glass in place.

### **3.3. CLEANING**

Thoroughly clean glass surfaces and removes labels, paint spots, putty and other defacement. Glass shall be clean at the time the work is accepted.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 1. Homogeneous Ceramic Tiles

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## HOMOGENEOUS CERAMIC TILES

### **PART 1 GENERAL**

#### **1.1. SCOPE**

1.1.1. The work includes the supply and furnishing of materials and performing labor necessary for the complete installation of all ceramic tile-work as shown or indicated on drawings and as specified herein.

#### **1.2. SUBMITTALS**

1.2.1. **Samples:** Submit samples of each type of floor and wall tiles including all required beads, molding, and trim units.

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Deliver materials (except bulk materials) in manufacturer's unopened containers fully identified with manufacturer's name, trade name, type, class, grade, size and color.

1.3.2. Store materials in unopened containers off ground and under cover, protected from damage.

#### **1.4. EXTRA STOCK**

1.4.1. Supply an extra two percent of each type of tile used in clean, marked cartons for emergency use.

### **PART 2 PRODUCTS**

#### **2.1. SUPPLIERS**

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

#### **2.2. MATERIALS**

2.2.1. All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the Architect upon submission of samples. Samples of all tiles shall be submitted to the Architect for approval before placing orders. All tiles shall be delivered to the jobsite in unopened grade-sealed containers.

##### **2.2.1. Colors and Patterns**

Tile Colors and patterns shall be selected by the architect and approved by the DSWD. Colors and patterns by reference to manufacturer's name and designations are for color and pattern identification only and are not intended to limit selection of other manufacturer's products with similar color and patterns.

##### **2.2.2. Floor Tile**

###### *2.2.2.1. Unglazed Ceramic Tile*

For floors, shall be vitrified floor tiles, porcelain or natural clay with cushioned edges. Sizes and colors shall be as indicated on drawings.

##### **2.2.3. Wall Tile**

###### *2.2.3.1. Glazed Ceramic Tile*



Bright or matte finish with cushioned edges. Sizes and colors shall be as indicated on drawings.

2.2.4. **Hydrated Lime:** ASTM C206, Type S; or ASTM C207, Type S.

2.2.5. **Sand:** ASTM C144, for mortar setting beds, grouting and pointing.

2.2.6. **Water:** Clean, potable.

2.2.7. **Portland cement:** ASTM C1500, Type I, white for grout, gray for other uses.

## **PART 3 EXECUTION**

### **3.1. INSTALLATION**

3.1.1. Do not start tile work until roughing-in for plumbing and electrical work has been completed and tested. All surfaces to receive tile-work shall be cleaned of loose materials and given proper surface preparation prior to ceramic tile-work. Prepare and install in accordance with ANSI A108.1 and ANSI A108.5.

#### **3.1.2. Application of Scratch Coat**

3.1.2.1. Thoroughly dampen, but not saturate, surfaces of masonry or concrete walls before applying the scratch coat. Make surface areas appear slightly damp. Allow no free water on the surface.

3.1.2.2. On masonry, first apply a thin coat with great pressure, then bring it out sufficiently to compensate for the major irregularities on the masonry surfaces to a thickness of not less than 6 mm at any point.

3.1.2.3. Evenly rake scratch coats, but not dash coats, to provide a good mechanical key for subsequent courses before the mortar has fully hardened.

3.1.2.4. On surfaces not sufficiently rough to provide a good mechanical key, dash on the first coat with a whisk by broom or fiber brush using a strong whipping motion. Do not trowel or otherwise disturb mortar applied by dashing until it is hardened.

#### **3.1.3. Floor Tile Installation on Mortar Bed**

3.1.3.1. Before spreading the setting bed, establish lines of borders and center the fieldwork in both directions to permit the pattern to be laid with a minimum of cut tiles.

3.1.3.2. Clean concrete subfloor then moisture but not soak. Afterwards sprinkle dry cement over the surface and spread the mortar on the setting bed.

3.1.3.3. Mix mortar 1 part Portland cement to 2 parts sand. Tamp to assure good bond over the entire area and screed to provide a smooth and level bed at proper height and slope.

3.1.3.4. Pitch floor to drain as required.

3.1.3.5. After setting the bed has set sufficiently to be worked over, sprinkle dry cement over the surface and lay tile.

3.1.3.6. Keep the joints parallel and straight over the entire area by using straight edges.

3.1.3.7. Tamp the tile solidly onto the bed, using wood blocks of size to ensure solid bedding free from depressions.

3.1.3.8. Lay tiles from center outward and make adjustments at walls.

#### **3.1.4. Wall Tile Installation on Mortar Bed**



3.1.4.1. Before application of the mortar bed, dampen the surface of the scratch coat evenly to obtain a uniform section.

3.1.4.2. Use temporary or spot grounds to control the thickness of the mortar bed. Fill out the mortar bed even with the grounds and rod it to a true plane.

3.1.4.3. Apply the mortar bed over an area no greater than can be covered with tile while the coat is still plastic.

3.1.4.4. Allow no single applications of mortar to 19 mm thick.

3.1.4.5. Completely immerse wall tile in clean water and soak it at least ½ hour. After removal, stack tile on edge long enough to drain off excess water. Re-soak and drain individual tiles then dry along edges. Allow no moisture to remain on the back of tile during setting.

3.1.4.6. Apply a bond coat 0.8 mm thick to the plastic setting bed or to the back of each sheet or tile.

3.1.4.7. Press tile firmly into the bed and beat into place within 1 hour.

3.1.4.8. Lay tile field in rectangular block areas not exceeding 600 mm x 600 mm. cut the setting bed through its entire depth along the edges of each block area after placement and before subsequent blocks are installed.

### 3.1.5. Grouting

3.1.5.1. Within 1 hour after installation of tile, remove strings from string-set tile and wet the faces of face-mounted tile and remove the paper and glue. Avoid using excess water. Adjust any tile that is out of alignment.

3.1.5.1.1. After the tile has sufficiently set, force a maximum of grout into joints by trowel, brush or finger application.

3.1.5.1.2. Before grout sets, strike or tool the joints of cushion-edge tile to the depth of the cushion.

3.1.5.1.3. Fill all joints of square-edged tile flush with the surface of the tile. Fill all gaps or sips.

3.1.5.1.4. During grouting clean all excess grout off with clean burlap, other cloth or sponges.

## 3.2. CLEANING

3.2.1. Sponge and wash tile thoroughly with clean water after the grout has stiffened. Then clean by rubbing with damp cloth or sponges and polish clean with dry cloth.

## 3.3. PROTECTION

3.3.1. Cover finished tile floors with clean 13.6 kg. Natural Kraft paper before permitting foot traffic. Place board walkways on floors that are to be continuously used as passageways by workers. Protect tiled corners external angles, with board corner strips in areas used as passageways by workers.

**\*\*\* END OF SECTION \*\*\***





# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 3. Resilient Flooring

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## RESILIENT FLOORING

### PART 1. GENERAL

#### 1.1. SCOPE

This specification covers the furnishing of materials and labor necessary to complete the installation of all vinyl flooring and base as shown in drawings and finish schedule and as specified herein.

#### 1.2. SUBMITTALS

##### 1.2.3. Colors and Patterns

1.2.3.1. One (1) sample of each color and pattern of each of the following items:

1.2.3.1.1. Floor tile

1.2.3.1.2. Wall base

1.2.3.2. Where colors and patterns are not indicated, submit not less than 3 different samples of the manufacturer's standard colors and patterns for selection by the Architect and/or DSWD.

#### 1.3. DELIVERY AND STORAGE

1.3.1. Deliver materials to the job in the manufacturer's original unopened containers with the brands, names, and production runs clearly marked thereon. Handle materials carefully and store them in their original containers at not less than 21 degrees C for at least 48 hours before work is started. Do not open containers until inspected and accepted.

#### 1.4 ENVIRONMENTAL CONDITIONS

1.4.1. Maintain spaces in which flooring work is to be performed at not less than 18 degrees C at the floor level for at least 48 hours prior to starting the work, during the time work is performed, and for at least 48 hours after the work is completed. Maintain a minimum temperature of 12 degrees C thereafter. Provide adequate ventilation to remove moisture and fumes from the area.

### PART 2 PRODUCTS

#### 2.1. MATERIALS

2.1.1. Resilient floors shall conform to the respective specifications and standards and to the requirements specified herein.

2.1.1.1. **Color and Pattern:** The color and pattern of tile shall be uniformly distributed throughout the thickness of the tile. Resilient flooring materials of the same type, pattern, and color shall be of the same production run and shall be so marked. Variations in shades and off-pattern matches between containers will not be acceptable. Flooring in any one continuous area or that used in replacement of damaged flooring in a continuous area shall be from the same lot and have the same shade and pattern.

2.1.1.2. **Resilient Composition Tile:**

2.1.2.1. *Floor Tile.* Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers will be approved by the architect.



2.1.2.2. **Leveling compounds, underlayment, and patching compounds.** Leveling compounds, underlayment, and patching compounds as recommended or approved by flooring manufacturers.

2.1.2.3 **Accessories.** Accessories shall be standard products of the flooring manufacturer.

## **PART 3 EXECUTION**

### **3.1. CONDITION OF SURFACES**

3.1.1. The flooring shall not be installed on surfaces that are unsuitable and will prevent a proper installation. Floor surfaces that are to receive flooring shall be clean, thoroughly dry, smooth, firm and sound, and free from oil, paint, wax, dirt, and any other damaging material.

3.1.1.1. Prepare substrates according to manufacturer's written instructions to ensure adhesion of floor coverings.

3.1.1.2. Concrete Substrates: Prepare according to ASTM F 710.

3.1.1.2.1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

3.1.1.2.2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by the manufacturer. Do not use solvents.

3.1.1.2.3. Alkalinity and Adhesion Testing: Perform tests recommended by the manufacturer. Proceed with installation only after substrates pass testing.

3.1.1.2.4. Moisture Testing: Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing.

3.1.1.2.4.1. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m in 24 hours.

3.1.1.2.4.2. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

3.1.1.3. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

3.1.1.4. Do not install floor coverings until they are the same temperature as space where they are to be installed.

3.1.1.4.1. Move floor coverings and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

3.1.1.5. Sweep and vacuum clean substrates to be covered by floor coverings immediately before installation.

### **3.1.2. Preparation of Concrete Floor Surfaces**

Grind all ridges and other uneven surfaces smooth. Concrete curing compounds, other than the type that does not adversely affect adhesive, shall be entirely removed from the slabs. Cut out and fill cracks with 1.5mm wide and wider with a crack filler as specified for this application.



Provide latex underlayment to fill the remaining holes, cracks, and depressions, and for smoothing, leveling, and feather edging the concrete. Remove loose particles, vacuum chalky, dusty surfaces and prime the cleaned surfaces if recommended by the flooring manufacturer.

### 3.1.3. Moisture Test for Concrete Floors

As recommended by the floor covering manufacturer.

## 3.2. APPLICATION

3.2.1. Install flooring after work of other trades that might damage flooring has been completed. Apply flooring and accessories in accordance with the manufacturer's installation procedure. Work shall be performed by workmen experienced in the application of such flooring.

3.2.2. Detailed requirements are as follows:

### 3.2.2.1. Adhesives

Apply adhesives in accordance with the adhesive manufacturer's printed directions, unless specified or directed otherwise. Smoking, the use of open flames and other immediate sources of ignition are strictly prohibited in the area where solvent-containing adhesives are being used or spread. Post conspicuous signs reading "NO SMOKING OR OPEN FLAME" in the area of spread adhesive.

### 3.2.2.2. Flooring

Apply tile flooring in the patterns indicated. Start in the center of the room or area, and work from the center towards the edges. Keep tile line and Joint Square, symmetrical, tight, and vent; and keep each floor in true, level plans, except where indicated as sloped. Vary edge width as necessary to maintain full-size tiles in the field but no edge tile shall be less than one-half (1/2) the field tile size, except where irregular shaped rooms make it impossible.

### 3.2.2.3. Cutting

Cut flooring to and fit around all permanent fixtures, built-in furniture and cabinets, pipes and outlets. Cut edges, fit, and scribed to walls and partitions after field flooring has been applied.

### 3.2.2.4. Edge Strips

Provide edging strips where flooring terminates at points higher than the contiguous finished flooring, except at doorways where the thresholds are provided. Secure plastic strips with adhesives.

### 3.2.2.5. Application of Resilient Tile

Prime concrete slabs in contact with the ground with cut-back type primer if recommended by the flooring manufacturer. Work primer with a non-absorptive base completely into the surface. Allow the primer to become roughly dry before applying adhesive. Apply only cut-back adhesive to primed concrete surfaces.

## 3.3. CLEANING AND PROTECTION

3.3.1. Remove all excessive adhesives from the surface of the flooring and the cove.

3.3.2. Perform initial maintenance on the completed installation as recommended by the flooring manufacturer.

3.3.3. Protect the flooring as recommended by the flooring manufacturer from damage by other trades and by the placement of fixtures and furnishings.



### 3.4. WARRANTY

3.4.1. Manufacturer shall warrant that its conductive vinyl tile is free from defects in materials and workmanship for a period of one year and that it will meet the electrical resistance requirements of NFPA Standard 99 for a period of five (5) years.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 5. *Paints & Coats*

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## PAINTS AND COATINGS

### **PART 1 GENERAL**

#### **1.1. RELATED DOCUMENTS**

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### **1.2. SUMMARY**

1.2.1. This Section includes the following:

1.2.1.1. Surface preparation.

1.2.1.2. Field application of paints, stains, varnishes, and other coatings.

#### **1.3. REFERENCES**

1.3.1. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.

1.3.2. ASTM D 4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.

1.3.3. ASTM D3960 “ Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings”.

1.3.4. ASTM D2486-79 “ Standard Test Method for Scrub Resistance of Wall Paints”.

1.3.5. ASTM E84-01 “ Standard Test Method For Surface Burning Characteristics of Building Materials.”

1.3.6. ASTM D1653 “Test Methods for Water Vapour Transmission of Organic Coating Films”.

1.3.7. PDCA (MAN) - Architectural Specification Manual; Painting and Decorating Contractors of America.

1.3.8. SSPC (PM1) - Steel Structures Painting Manual, Vol. 1, Good Painting Practice; The Society for Protective Coatings.

1.3.9. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications, the Society for Protective Coatings.

1.3.10. National Building Code of the Philippines

1.3.11. Local Rules and Regulation

1.3.12. Philippine Green Building Code

#### **1.4. DEFINITIONS**

1.4.1. Conform to ASTM D 16 for interpretation of terms used in this section.

#### **1.5. SUBMITTALS**

1.5.1. **Product Data:** Provide data on all finishing products.

1.5.2. **Samples for Selection:** Submit two paper chip samples, 300 x 300 mm in size illustrating range of colors and textures available for each surface finishing product scheduled.



1.5.3. **Samples for Review:** Submit two painted samples, illustrating selected colors and textures for each color and system selected with specified coats cascaded. Submit on actual receiving substrate, 600 x 600 mm in size.

1.5.4. **Manufacturer's Instructions:** Indicate special surface preparation procedures, substrate conditions requiring special attention, and recommended area coverage for specified product.

1.5.5. At project completion, provide an itemized list complete with manufacturer, paint type and color-coding for all colors used for DSWD/BGMS's later use in maintenance.

1.5.6. **Maintenance Data:** Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

## 1.6. REGULATORY REQUIREMENTS

1.6.1. Conform to applicable codes, including local rules and regulations, for flame and smoke rating requirements for products and finishes, subject to acceptance by the Local Fire Department.

## 1.7. MOCK-UP

1.7.1. Provide panel, 2440 mm long by 1220 wide, illustrating special coating color, texture, and finish.

1.7.2. Provide door and frame assembly illustrating paint, stain and varnish coating color, texture, and finish.

1.7.3. For the sky ceiling, 3000 (H) x 3000(W) x 5000 projection covering different eventual substrates.

1.7.4. Locate where directed

1.7.5. Mock-up may or may not remain as part of the Work

## 1.8. DELIVERY, STORAGE, AND PROTECTION

1.8.1. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

1.8.2. **Container Label:** Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

1.8.3. **Paint Materials:** Store at minimum ambient temperature of 7 degrees C and a maximum of 32 degrees C, in ventilated area, and as required by manufacturer's instructions.

## 1.9. ENVIRONMENTAL REQUIREMENTS

1.9.1. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

1.9.2. Do not apply exterior coatings during rain, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

1.9.3. Apply paint only on dry, clean, properly cured and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of the finished surface.

1.9.4. Minimum Application Temperatures for Latex Paints: 7 degrees C for interiors; 10 degrees C for exterior; unless required otherwise by manufacturer's instructions.





1.9.5. Minimum Application Temperature for Varnish Finishes: 18 degrees C for interior or exterior, unless required otherwise by manufacturer's instructions.

1.9.6. Provide lighting level of 860 lx measured mid-height at substrate surface.

## **1.10. EXTRA MATERIALS**

1.10.1. Supply 3 L of each color; store where directed.

1.10.2. Label each container with color in addition to the manufacturer's label.

## **PART 2 PRODUCTS**

### **2.1. MANUFACTURERS**

2.1.1. As specified and subject to Compliance with Local Regulation, Fire Code and Green Building Code

2.1.2. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre approved by the architect.

### **2.2. PAINTS AND COATINGS – PERFORMANCE**

Paint materials including primers, colourants, pigments, tints, and bases shall be free (absolute zero % content, except for trace amounts) of lead, cadmium, hexavalent chromium, or mercury. Formulate paint materials, at the factory, with anti-mildew agents so that colours are not affected; incorporated into the formulation. In addition, include carefully balanced ultraviolet inhibitors for exterior material.

### **2.3. PAINTS AND COATINGS – GENERAL**

2.3.1. Paints and Coatings: Ready mixed, except field-catalyzed coatings. Prepare pigments:

2.3.1.1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.

2.3.1.2. For good flow and brushing properties.

2.3.1.3. Capable of drying or curing free of streaks or sags.

### **2.4. PAINT SYSTEMS – EXTERIOR**

#### **2.4.1. Wood, Opaque, Alkyd, 3 Coat:**

2.4.1.1. One coat of alkyd primer sealer.

2.4.1.2. Gloss: Two coats of alkyd enamel.

#### **2.4.2. Wood, Transparent, Stain:**

2.4.2.1. Two coats of stain.

#### **2.4.3. Concrete/Masonry/Cement Plaster, Opaque, Alkyd modified, vinyl-acrylic latex, 3 coat:**

2.4.3.1. One coat of water repellent primer sealer.

2.4.3.2. Flat: Two coats of alkyd modified, vinyl-acrylic latex enamel.

#### **2.4.4. Gypsum Board and Plaster, Opaque, Latex, 3 Coat:**

2.4.4.1. One coat of latex primer sealer.

2.4.4.2. Flat: Two coats of latex.

**2.4.5. Ferrous Metals, Unprimed, Latex, 3 Coat:**

2.4.5.1. One coat of latex primer.

2.4.5.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.4.6. Ferrous Metals, Primed, Latex, 2 Coat:**

2.4.6.1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.

2.4.6.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.4.7. Galvanized Metals, Latex, 3 Coat:**

2.4.7.1. One coat galvanized primer.

2.4.7.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.4.8. Paint MaE-OP-3A - Aluminum, Unprimed, Alkyd, 3 Coat:**

2.4.8.1. One coat etching primer.

2.4.8.2. Semi-gloss: Two coats of alkyd enamel.

**2.4.9. Pavement Marking Paint:**

2.4.9.1. Two coats of chlorinated rubber base traffic lane paint; yellow or white as indicated on drawings.

**2.5. PAINT SYSTEMS – INTERIOR**

2.5.1. **Wood**, as indicated in Interior Design Documents.

**2.5.2. Wood, Opaque, Latex, 3 Coat:**

2.5.2.1. One coat of latex primer sealer.

2.5.2.2. Semi-gloss: Two coats of latex enamel.

**2.5.3. Wood - Cabinet Interior, Opaque, Latex, 2 Coat:**

2.5.3.1. One coat of latex primer sealer.

2.5.3.2. Semi-gloss: One coat of vinyl-acrylic latex enamel.

**2.5.4. Wood, Transparent, Stain:**

2.5.4.1. Filler coat (for open grained wood only).

2.5.4.2. Two coats of stain; polyurethane, non-yellowing.

2.5.4.3. One coat sealer.

2.5.4.4. Gloss: One coat of polyurethane, non-yellowing.

2.5.4.5. Satin: One coat of; polyurethane, non-yellowing

**2.5.5. Concrete/Masonry, Opaque, Latex, 2 Coat:**

2.5.5.1. One coat of block filler.

2.5.5.2. Flat: One coat of vinyl-acrylic latex enamel.

2.5.6. **Corrugated Metal**: Special finish as indicated in Design Documents.

**2.5.7. Ferrous Metals, Unprimed, Alkyd / Latex, 3 Coat:**



2.5.7.1. One coat of alkyd primer.

2.5.7.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.5.8. Ferrous Metals, Primed, Latex, 2 Coat:**

2.5.8.1. Touch-up with alkyd primer.

2.5.8.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.5.9. Galvanized Metals, Latex, 3 Coat:**

2.5.9.1. One coat galvanized primer.

2.5.9.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.5.10. Aluminum, Unprimed, Alkyd, 3 Coat:**

2.5.10.1. One coat etching primer.

2.5.10.2. Semi-gloss: Two coats of alkyd enamel.

**2.6. ACCESSORY MATERIALS**

2.6.1. **Accessory Materials:** Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.

**PART 3 EXECUTION**

**3.1. EXAMINATION**

3.1.1. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.

3.1.2. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.1.3. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:

3.1.3.1. Plaster and Gypsum Wallboard: 12 percent.

3.1.3.2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.

3.1.3.3. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.

3.1.3.4. Exterior Wood: 15 percent, measured in accordance with ASTM D 4442.

3.1.3.5. Concrete Floors: 8 percent.

3.1.3.6. Alert the Architect of any discrepancies, prior to commencing the Work of this section.

3.1.3.7. Coordinate the Work of this section with applicable trades.

**3.2. PREPARATION**

3.2.1. **Surface Appurtenances:** Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

3.2.2. **Surfaces:** Correct defects and clean surfaces which affect work of this section. No painting work shall commence until all such adverse conditions or defects have been corrected to acceptable level.

3.2.3. **Marks:** Seal with shellac those which may bleed through surface finishes.



- 3.2.4. **Impervious Surfaces:** Remove mildew by scrubbing with solution of tetra- sodium phosphate and bleach. Rinse with clean water and allow the surface to dry.
- 3.2.5. **Concrete and Unit Masonry Surfaces to be Painted:** Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of trisodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- 3.2.6. **Gypsum Board Surfaces to be Painted:** Fill minor defects with filler compound. Spot prime defects after repair.
- 3.2.7. **Plaster Surfaces to be Painted:** Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- 3.2.8. **Asphalt, Creosote, or Bituminous Surfaces to be Painted:** Remove foreign particles to permit adhesion of finishing materials. Apply latex based sealer or primer.
- 3.2.9. **Insulated Coverings to be Painted:** Remove dirt, grease, and oil from canvas and cotton.
- 3.2.10. **Concrete Floors to be Painted:** Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- 3.2.11. **Aluminum Surfaces to be Painted:** Remove surface contamination by steam or high-pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- 3.2.12. **Galvanized Surfaces to be Painted:** Remove surface contamination and oils and wash with solvent. Apply a coat of etching primer.
- 3.2.13. **Uncoated Steel and Iron Surfaces to be Painted:** Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint the entire surface; spot prime after repairs.
- 3.2.14. **Shop-Primed Steel Surfaces to be Finish Painted:** Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re- prime entire shop-primed item.
- 3.2.15. **Interior Wood Items to Receive Opaque Finish:** Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after the primer has dried; sand between coats. Back prime concealed surfaces before installation.
- 3.2.16. **Interior Wood Items to Receive Transparent Finish:** Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after the sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
- 3.2.17. **Exterior Wood to Receive Opaque Finish:** Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after the prime coat has been applied. Back prime concealed surfaces before installation.
- 3.2.18. **Exterior Wood to Receive Transparent Finish:** Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior calking compound after sealer has been applied. Prime concealed surfaces.
- 3.2.19. **Wood Doors to be Field-Finished:** Seal wood door top and bottom edge surfaces with clear sealer.



3.2.20. **Metal Doors to be Painted:** Prime metal door top and bottom edge surfaces.

3.2.21. Protect all interior surfaces and areas, including glass, aluminum surfaces etc. and equipment and any labels and signage from the painting operations and damage by drop cloths, shield masking, templates, or other suitable protective means and make good any damage caused by failure to provide protection.

3.2.22. Erect boundaries or screens and post signs to warn off or limit or direct traffic away or around the work area as required.

### 3.3. APPLICATION

3.3.1. Apply products in accordance with manufacturer's instructions.

3.3.2. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

3.3.3. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before the next coat is applied.

3.3.4. Apply each coat to a uniform appearance. Apply each coat of paint slightly darker than the preceding coat unless otherwise approved.

3.3.5. Sand wood surfaces lightly between coats to achieve required finish.

3.3.6. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying the next coat.

3.3.7. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from the surface.

### 3.4. FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

3.4.1. Refer to MEP specifications of color coding of equipment, duct work, piping, and conduit or as indicated otherwise.

3.4.2. Paint shop-primed equipment, where indicated.

3.4.3. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

3.4.4. Finish equipment, piping, conduit, and exposed ductwork in finished areas in colors according to the color schedule.

3.4.5. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### 3.5. FIELD QUALITY CONTROL

3.5.1. Inspect and test questionable coated areas in accordance with the Architect's instructions.

### 3.6. CLEANING

3.6.1. Collect waste material which may constitute a fire hazard, place it in closed metal containers, and remove daily from the site.

3.6.2. Remove all paint where spilled, splattered or spray as work progresses using means and materials that are detrimental to the affected surface.

### 3.7. SCHEDULE - SURFACES TO BE FINISHED

3.7.1. Do Not Paint or Finish the Following Items:

3.7.1.1. Items fully factory-finished unless specifically noted.



3.7.1.2. Fire rating labels, equipment serial number and capacity labels.

3.7.1.3. Stainless steel items.

3.7.2. Paint the surfaces described in PART 2, Paint Systems Articles.

3.7.3. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.

3.7.3.1. Paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, and hangers, brackets, collars and supports occurring in finished areas to match background surfaces, unless otherwise indicated.

3.7.3.2. Paint shop-primed items occurring in finished areas.

3.7.3.3. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.

3.7.3.4. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

3.7.4. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

3.7.5. Finish surface as indicated in Design Documents.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 6. Stone Finishes

14 JUNE 2023

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Revision	Date	Description



## STONE FINISHES

### **PART 1 GENERAL**

#### 1.1. Section includes:

- 1.1.1. Exterior stone finish system.
- 1.1.2. Metal framing support system.
- 1.1.3. Flashing and trim integral stone cladding system.

#### 1.2. REFERENCES

- 1.2.1. ASTM B 221 - Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wires, Shapes and Tubes.
- 1.2.2. ASTM D 897 - Standard Test Method for Tensile Properties of Adhesive Bonds.
- 1.2.3. ASTM D 1761 - Standard Test Method for Mechanical Fasteners in Wood.
- 1.2.4. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- 1.2.5. ASTM E 283 - Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors.
- 1.2.6. ASTM E 330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors under the Influence of Wind Loads.
- 1.2.7. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- 1.2.8. ASTM E 1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes

#### 1.3. PERFORMANCE REQUIREMENTS

##### 1.3.1. **Design Requirements;** design exterior stone cladding system to withstand:

- 1.3.1.1. Positive and negative design wind loads acting normal to the wall plane in accordance with Building Code.
- 1.3.1.2. Movement caused by an ambient temperature range of 120 degrees F and a surface temperature range of 160 degrees F.

##### 1.3.2. **Performance Requirements:**

- 1.3.2.1. *Water resistance:* No leakage
- 1.3.2.2. *Adhesive bond:* Average bond strength of 284 PSI
- 1.3.2.3. *Fire hazard classification:* Maximum flame spread/smoke developed rating of 10/155

#### 1.4. SUBMITTALS

- 1.4.1. **Shop Drawings:** Include plans, elevations, and details, size and layout of panels, trim, accessories, supports, and attachments.





1.4.1.1. Show locations, mounting details and details of joints both within honeycomb-backed stone cladding assembly and between stone panel cladding assembly and other construction.

1.4.1.2. Include details of all varying joints, anchorage, corners, direction changes and connection to other materials.

1.4.1.3. Show locations and details of the channel system.

1.4.1.4. Show direction of veining, grain, or other directional pattern.

1.4.1.5. Include large-scale elevations of each building elevation with each panel numbered and dimensioned

1.4.2. **Selection Samples:** For each finished product specified, two complete sets of color chips representing the manufacturer's full range of available colors and patterns.

1.4.3. **Verification Samples:** For each finished product specified, two sets of samples, minimum size 6 inches (152 mm) square, representing actual product, color, and patterns and exhibiting the extreme range of color and other visual characteristics to be expected for the project.

## 1.5. QUALITY ASSURANCE

1.5.1. **Mock-Up:** Provide a 4 foot high by 8 foot wide mock-up for evaluation of surface preparation techniques and application workmanship.

1.5.1.1. Finish areas designated by the Architect.

1.5.1.2. Do not proceed with remaining work until color and workmanship is approved by the Architect.

1.5.1.3. Refinish mock-up area as required to produce acceptable work.

1.5.1.4. Approved mockup may remain as part of the Work.

## 1.6. DELIVERY, STORAGE, AND HANDLING

1.6.1. Schedule delivery and installation of stone panel cladding with all parties involved to avoid extended on-site storage and coordinate with work adjacent to stone panel cladding. Ship panels by elevation in a predetermined priority sequence to be determined prior to production.

1.6.2. Store products in manufacturer's properly labeled, unopened packaging until ready for installation.

1.6.3. Store panels off ground; prevent contact with materials that could cause staining or damage.

1.6.4. Store and handle stone and related materials to prevent deterioration or damage due to moisture, temperature changes, contaminates, corrosion, breaking, chipping, and other causes.

1.6.5. Mark stone units, on the surface that will be concealed after installation, with designations used on Shop Drawings to identify individual stone units. Orient markings on vertical panels so that they are right side up when units are installed.

1.6.6. Lay out and arrange panels on the ground in the order of the elevation sequence for inspection of color consistency and panel alignment.

1.6.7. Perform detailed quality control checks on every panel prior to packaging.

1.6.8. Package all panels in custom plywood crates using protective covers on all of the panel edges and fill the gaps between panels with expandable foam for maximum protection.



## 1.7. PROJECT CONDITIONS

1.7.1. **Field Measurements:** Verify locations of structural members and wall opening dimensions by field measurements before stone wall panel fabrication, as the project schedule permits.

1.7.2. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by the manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.9. MAINTENANCE MATERIAL

1.9.1. Furnish extra materials of each product and color installed packaged with protective covering for storage and identified with labels describing contents.

## PART 2 PRODUCTS

### 2.1. EXTERIOR STONE FINISHES

2.1.1. **Stone Finish:** Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

#### 2.1.2. **Accessories:**

2.1.2.1. *Fasteners:* Concealed type except where unavoidable and suited to application, stainless or corrosion resistant coated steel or any product recommended by the manufacturer.

2.1.2.2. *Joint Sealers:* Type recommended by panel manufacturer.

### 2.2. FABRICATION

2.2.1. Fabricate manufacturer's standard interlocking channel system. System shall allow for the free and noiseless vertical and horizontal thermal movement due to expansion and contraction. Buckling of panels, opening of joints, undue stress on fasteners, failure of sealants or any other detrimental effects due to thermal movement will not be permitted

2.2.2. Attach channels to the back of panels in the factory.

2.2.3. Where indicated shop fabricate panels return in the factory with hairline joints to appear as monolithic stone.

2.2.4. Apply clear sealer to exposed stone surfaces at the factory.

## PART 3 EXECUTION

### 3.1. EXAMINATION

3.1.1. Examine surfaces to receive stone panels and conditions under which they will be installed for compliance with installation tolerances and other conditions affecting performance of panels.

3.1.2. Do not begin installation until substrates have been properly prepared.

3.1.3. If substrate preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding.

### 3.2. PREPARATION

3.2.1. Clean surfaces thoroughly prior to installation.

3.2.2. Before setting panels, clean surfaces that are dirty or stained by removing soil, stains and foreign materials. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with



clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

3.2.3. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3. INSTALLATION

3.3.1. Install in accordance with manufacturer's instructions and approved Shop Drawings.

3.3.2. Install interlocking channel system properly aligned for the panel installation.

3.3.3. Set panels aligned, level, and plumb. Shim as required with hard plastic shims up to a maximum of 1/2 inch thick.

3.3.4. Fasten receiving channels to support. Snap panels into receiving channels. Use silicone sealant in the bed of the channel if recommended by the manufacturer.

3.3.5. Seal panel joints with joint sealer.

#### 3.3.6. Allowable Tolerances:

3.3.6.1. *Variation from Plumb:* For vertical lines, external comers and surfaces of walls, do not exceed 1/8 inch in 10 feet, 3/16 inch in 20 feet, or 1/4 inch in 40 feet or more.

3.3.6.2. *Variation from Level:* For lintels, sills, water tables, parapets, horizontal bands, horizontal grooves, and other conspicuous lines, do not exceed 1/16 inch in 10 feet, 1/8 inch in 20 feet or 3/16 inch maximum.

3.3.6.3. *Variation of Linear Building Line:* For positions shown in plan and related portions of walls and partitions, do not exceed 1/8 inch in 20 feet or 1/4 inch in 40 feet or more.

3.3.6.4. *Variation in Cross-Sectional Dimensions:* For thickness of walls from dimensions indicated, do not exceed plus or minus 1/8 inch.

3.3.6.5. *Variation in Joint Width:* Do not vary from average joint width more than plus or minus 1/16 inch or a quarter of nominal joint width, whichever is less. For joints within 60 inches of each other, do not vary more than 1/16 inch or a quarter of nominal joint width, whichever is less from one to the other.

3.3.6.6. *Variation in plane between adjacent stone units (lipping):* Do not exceed 1/16-inch difference between planes of adjacent units.

3.3.7. Separate dissimilar metals and use gasket fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals.

### 3.4. ADJUSTING AND CLEANING

3.4.1. Remove and replace broken, chipped, stained, or otherwise damaged stone, defective joints, and honeycomb-backed stone panel cladding that does not match approved samples.

3.4.2. Repair panels with minor damage as acceptable to the Architect.

3.4.3. Clean stone panel cladding as work progresses. Remove excess sealant and smears as sealant is installed.

3.4.4. Clean stone panel cladding no fewer than six days after completion of pointing and sealing. Clean using clean water and stiff-bristle fiber brushes. Do not use wire brushes, acid-type cleaning agents, cleaning agents containing caustic compounds or abrasives, or other materials or methods that could damage stone.



### **3.5. PROTECTION**

3.5.1. Protect installed products until completion of project.

3.5.2. Prevent staining of stone from mortar, grout, sealants, and other sources. Immediately remove such materials from stone without damage to the stonework.

3.5.3. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

3.5.4. Touch-up, repair or replace damaged products before Substantial Completion.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 7. Gypsum Board Assemblies

14 JUNE 2023

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Revision	Date	Description



## **GYPSUM BOARD ASSEMBLIES**

### **PART 1 GENERAL**

#### **1.1. Section includes:**

- 1.1.1. Gypsum board and joint treatment products
- 1.1.2. Mold and Mildew-resistant gypsum board products
- 1.1.3. Fire-rated gypsum area separation walls
- 1.1.4. Gypsum shaft liner
- 1.1.5. Abuse-resistant gypsum board
- 1.1.6. Mold-resistant gypsum board
- 1.1.7. Sound dampening area separation walls
- 1.1.8. Gypsum soffit board
- 1.1.9. Gypsum sheathing board
- 1.1.10. Accessories for the installation and trimming of gypsum board partitions and ceilings

#### **1.2. RELATED SECTIONS**

- 1.2.1. Metal Framing
- 1.2.2. Access Panels and Frames
- 1.2.3. Plaster and Gypsum Board

#### **1.3. REFERENCES**

- 1.3.1. ASTM C 36 - Standard Specification for Gypsum Wallboard
- 1.3.2. ASTM C 79 - Standard Specification for Gypsum Sheathing Board
- 1.3.3. ASTM C 442 - Standard Specification for Gypsum Backing Board, Gypsum Coreboard
- 1.3.4. ASTM C 475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board
- 1.3.5. ASTM C 514 - Standard Specification for Nails for the Application of Gypsum Board
- 1.3.6. ASTM C 588 - Specification for Gypsum Base for Veneer Plasters
- 1.3.7. ASTM C 630 - Standard Specification for Water-Resistant Gypsum Backing Board
- 1.3.8. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
- 1.3.9. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board
- 1.3.10. ASTM C 931 - Standard Specification for Exterior Gypsum Soffit Board
- 1.3.11. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
- 1.3.12. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs



- 1.3.13. ASTM C 1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base
- 1.3.14. ASTM C 1280 - Standard Specification for Application of Gypsum Sheathing
- 1.3.15. ASTM C 1396 - Standard Specification for Gypsum Board
- 1.3.16. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- 1.3.17. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials
- 1.3.18. CAN/ULC-S101 - Standard Methods of Fire Endurance Tests of Building Construction and Materials
- 1.3.19. GA-214 - Recommended Levels of Gypsum Board Finish; Gypsum Association 09 21 16-3
- 1.3.20. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association
- 1.3.21. GA-231 - Assessing Water damage to Gypsum Board; Gypsum Association
- 1.3.22. GA-238 - Guidelines for the Prevention of Mold Growth on Gypsum Board; Gypsum Association
- 1.3.23. GA-253 - Recommended Specifications for the Application of Gypsum Sheathing; Gypsum Association
- 1.3.24. GA-600 - Fire Resistance Design Manual; Gypsum Association FF. GA-801 - Handling and Storage of Gypsum Panel Product; Gypsum Association
- 1.3.25. UL 263 - Standard for Fire Tests of Building Construction and Materials
- 1.3.26. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc. JJ. ULC (FRD) - Fire Resistance Directory; Underwriters' Laboratories of Canada

#### 1.4. PERFORMANCE REQUIREMENT

- 1.4.1. **Fire-Rated Assemblies:** Provide materials and construction identical to those tested in fire endurance rated assemblies by an independent testing agency acceptable to the authorities having jurisdiction.
- 1.4.2. **Sound-Rated Assemblies:** Provide materials and construction identical to those tested in STC/IIC-rated assemblies by an independent testing agency.

#### 1.5. SUBMITTALS

- 1.5.2. **Shop Drawings:** Indicate special details associated with fireproofing, acoustic seals, or curved sheet installations.

#### 1.6. QUALITY ASSURANCE

- 1.6.2. **Mock-Up:** Provide a mock-up of the area indicated on the Drawings for evaluation of surface preparation techniques and application workmanship.
  - 1.6.2.1. Locate finish areas designated by Architect.
  - 1.6.2.2. Do not proceed with remaining work until workmanship and finish is approved by the Architect.
  - 1.6.2.3. Refinish mock-up area as required to produce acceptable work.



## 1.7. DELIVERY, STORAGE AND HANDLING

- 1.7.1. Deliver and store gypsum board in accordance with prescribed manufacturer's instructions.
- 1.7.2. Ship materials with a weathertight cover and in manufacturer's original packages showing manufacturer's name and product brand name.
- 1.7.3. Remove plastic shipping bags upon receipt and storage. Failure to remove may increase the likelihood of mold growth.
- 1.7.4. Store materials inside and protected from damage by weather and direct sunlight. Stack flat; protect ends, edges, and faces of gypsum boards from damage. Protect steel studs and metal accessories from moisture.

## 1.8. PROJECT CONDITIONS

- 1.8.1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by the manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- 1.8.2. Do not install interior products until installation areas are enclosed and conditioned.
- 1.8.3. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

## PART 2 PRODUCTS

**2.1. MANUFACTURERS;** approved by the architect

### 2.2. PROJECT CONDITIONS

- 2.2.1. **Substitutions:** Not permitted.
- 2.2.2. Requests for substitutions will be pre-approved by the BGMS.

### 2.3. GYPSUM PRODUCTS, GENERAL

- 2.3.1. **Size:** Provide maximum lengths and widths available that will minimize joints in each area that correspond with the support system indicated.
- 2.3.2. **Regional Materials:** Provide a minimum 20 percent of building materials (by cost) that are regionally, extracted, processed and manufactured within a radius of 500 miles from Project.

### 2.4. INTERIOR GYPSUM MATERIAL

- 2.4.1. 16mm thick [unless otherwise indicated] Gypsum Board, taper-edge, with waterproof coating, clear coating, clear color or approved equivalent. Ceiling metal frame assemblies to be to be galvanized steel, gauge 24 thickness, or as indicated in the drawings; all accessories to the assembly to be as recommended by manufacturer.
- 2.4.2. **Fire-Rated Gypsum Board:** Gypsum core panel with glass fibers to enhance fire resistance of the core; surfaced with ivory-colored paper on front and strong liner paper on back; and complying with ASTM C 1396 Section 5 and ASTM C 36, Type X, "Premium".
  - 2.4.2.1. *Acceptable Product:* as approved by the architect.
  - 2.4.2.2. *Thickness:* 1/2 inch (12.7 mm), unless otherwise indicated
  - 2.4.2.3. *Thickness:* 5/8 inch (15.9 mm), unless otherwise indicated
  - 2.4.2.4. *Width:* 48 inches (1219 mm)
  - 2.4.2.5. *Length:* Use longest length available, avoiding unnecessary joints





## 2.5. GYPSUM SHEATHING AND SOFFIT PANELS

2.5.1. **Fire-Rated Exterior Gypsum Soffit Board:** Gypsum core soffit panel with additives to enhance fire-resistance and sag resistance of core; surfaced with paper on front and back; and complying with ASTM C 1396 Section 8 and ASTM C 931, Type X.

2.5.1.1. *Acceptable Product:* as approved by the architect.

2.5.1.2. *Thickness:* 5/8 inch (15.9 mm)

2.5.1.3. *Width:* 48 inches (1220 mm)

2.5.1.4. *Length:* Use longest length available, avoiding unnecessary joints

## 2.6. GYPSUM PLASTER BASE

2.6.1. **Fire-Rated Plaster Base:** Gypsum core lathing panel with additives to enhance fire resistance of core and surfaced with absorptive paper on front and long edges and complying with ASTM C 1396 Section 10 and ASTM C 588, Type X.

2.6.1.1. *Acceptable Product:* as approved by the architect.

2.6.1.2. *Thickness:* 5/8 inch (15.9 mm)

2.6.1.3. *Width:* 48 inches (1220 mm)

2.6.1.3.1. *Length:* Use longest length available, avoiding unnecessary joints

2.6.1.3.2. *Edges:* Tapered

## 2.7. GYPSUM JOINT TREATMENT AND FINISH PRODUCTS

2.7.1. **Joint Treatment Tape:** Complying with ASTM C 475 and GA-216

2.7.2. **Joint Compound:** Vinyl type premixed compound; complying with ASTM C 475; in acceptable product(s) approved by Architect.

2.7.3. **Joint Compound:** Setting type lightweight; job mixed chemical-hardening compound; off white color; complying with ASTM C 475; in acceptable product(s) approved by Architect.

2.7.4. **Joint Compound:** Level Five vinyl type premixed compound; off-white color or tinted gray color; complying with ASTM C 475 and fulfilling ASTM C 840; designed for joint finishing of Level Five gypsum board; in acceptable product(s) approved by Architect.

## 2.8. ACCESSORY MATERIALS

2.8.1. **Corner Bead:** Formed galvanized steel angle, min. base steel 0.014 in. thick, and complying with ASTM C 1047

2.8.2. **Casing Bead:** Formed galvanized steel trim, minimum base steel thickness of 0.014 inch (0.35 mm), complying with ASTM C 1047, type(s) as follows:

2.8.2.1. J-shaped U-bead, for face nailing and finishing with joint treatment

2.8.2.2. J-shaped U-bead, requiring no finishing

2.8.2.3. L-shaped, for application over edge and finishing with joint treatment

2.8.3. **Control Joint:** Extruded vinyl formed with V-shaped slot covered with removable flexible vinyl strip; complying with ASTM C 1047

2.8.4. **Control Joint:** Bent zinc sheet formed with V-shaped slot, covered with plastic tape, with perforated flanges; complying with ASTM C 1047



2.8.5. **Screws:** ASTM C 954 or ASTM C 1002 or both with heads, threads, points, and finish as recommended by panel manufacturer

2.8.6. **Nails:** ASTM C 514 with heads, lengths, configurations, and finish as recommended by panel manufacturer

2.8.7. **Acoustical Sealant:** Non Drying, non hardening, non skinning, nonstaining, nonbleeding, gunnable type as recommended by panel manufacturer

2.8.8. **Insulation:** ASTM C 665, Type I, mineral fiber (either glass, rock, or slag) insulation blankets without membrane facing

## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

3.1.1. Verify site conditions are ready to receive work and framing and opening dimensions are as indicated on the Drawings.

3.1.2. If preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding.

### **3.2. PREPARATION**

3.2.1. Clean surfaces thoroughly prior to installation.

3.2.2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.2.3. Coordinate preparation of Level 5 gypsum board with manufacturer's requirements.

### **3.3. INSTALLATION**

3.3.1. **Application:** Apply and maintain conditions during installation in accordance with manufacturer's instructions and/or as follows:

3.3.1.1. Keep the gypsum board dry throughout the application.

3.3.1.2. Do not use gypsum board that has visible mold growth

3.3.1.3. Apply gypsum board on walls with a minimum 1/4 inch (6.4 mm) gap between the gypsum board and the floor.

3.3.1.4. Do not apply gypsum board over other building materials where conditions exist that are favorable to mold growth.

3.3.1.5. Maintain a sound weather-tight building envelope including, such elements as the roof, sealants, windows, etc.

3.3.1.6. Immediate and appropriate remediation measures must be taken as soon as water leaks or condensation sources are identified.

3.3.1.7. Provide routine cleaning and maintenance operations to prevent saturation of the gypsum board.

3.3.1.8. If a gypsum board is damaged by water, assess the need for replacement in accordance with GA-231.

3.3.2. Install accordance with the following:

3.3.2.1. *Metal Framing:* ASTM C 754.

3.3.2.2. *Gypsum Sheathing Board:* ASTM C 1280 and GA-253



3.3.2.3. *Fire-Resistant Construction*: GA 600.

3.3.2.4. *Gypsum Board and Joint Treatment*: ASTM C 840 and GA-214

3.3.2.5. Gypsum panel manufacturer's published recommendations.

3.3.3. **Finishing**: Tape, fill, sand and finish joints in accordance with ASTM C 840 and GA-214

3.3.3.1. *Level 1*: Plenums and service corridors.

3.3.3.2. *Level 2*: Water-resistant gypsum backing board indicated to receive tile.

3.3.3.3. *Level 3*: Gypsum board indicated to receive heavy or medium textured coatings and heavy-grade wall coverings.

3.3.3.4. *Level 4*: Gypsum board indicated to receive light textured coatings and light- grade wall coverings.

3.3.3.5. *Level 5*: All other gypsum boards.

3.3.3.6. *Level 5 Skim Coated Gypsum Wall Board*: Skim coat joints with Rapid Deco Joint compound specified.

### 3.4. PROTECTION

3.4.1. Protect work from damage and deterioration until the date of Substantial Completion.

3.4.2. Touch-up, repair or replace damaged products before Substantial Completion.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 8. Wood Panel Cladding

14 JUNE 2023

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Revision	Date	Description



## FACADE WOOD PANEL CLADDING

### **PART 1. GENERAL**

#### **1.1. SUMMARY**

- 1.1.1. Section Includes:
  - 1.1.1.1. Facade wood cladding panels.
  - 1.1.1.2. Attachments and fasteners.

#### **1.2. RELATED SECTIONS**

- 1.2.1. Division 1: General Requirements
- 1.2.2. Division 4: Masonry
- 1.2.3. Division 5; Sec. 2. Non-Load Bearing Metal Frames
- 1.2.4. Division 5; Sec. 3. Load Bearing Metal Frames
- 1.2.5. Division 7: Thermal and Moisture Protection
- 1.2.6. Division 9; Finishes

#### **1.3. ACTION SUBMITTALS**

- 1.3.1. **Shop Drawings:**
  - 1.3.1.1. Include plans, elevations, and details, size and layout panels, flashing, rainscreen airflow, supports and attachments.
- 1.3.2. **Color Charts:** Manufacturers standard color options.
- 1.3.3. **Samples:** Submit manufacturers finished samples [3-inch x 3-inch showing available colors] [12-inch x 12-inch in specified color]

#### **1.4. INFORMATIONAL SUBMITTALS**

- 1.4.1. **Installer:** Installation experience statement.

#### **1.5. QUALITY ASSURANCE**

- 1.5.1. **Manufacturer Qualifications:**
  - 1.5.1.1. Minimum of 5 years successful experience producing exterior wood cladding materials.
  - 1.5.1.2. Produce certified materials
  - 1.5.1.3. Domestic factory assembly, shop fabrication and pre-finishing
  - 1.5.1.4. As pre-approved by the architect.
- 1.5.2. **Installer Qualifications:**
  - 1.5.2.1. Minimum 2-years [documented] installation experience of specified materials.
- 1.5.3. **Single Source Responsibility:**
  - 1.5.3.1. Materials from a single manufacturer for each component and warranty.
- 1.5.4. **Pre-Installation:**
  - 1.5.4.1. Convene to review the following:
    - 1.5.4.1.1. Areas of installation.
    - 1.5.4.1.2. Framing and rough carpentry.
    - 1.5.4.1.3. Connections to adjacent surfaces and transitions.



1.5.4.1.4. Structural requirements and anchoring locations.

1.5.5. **Mock-Up:**

1. Provide 8 feet by 8 feet (or as directed by architect) mockup erected at site, to verify color, workmanship and installation details as determined by architect.
2. Complete assembly, color, sheen and model.

**1.6. FIELD CONDITIONS**

- 1.6.1. Do not install panels on wet or frozen substrate.

**1.7. DELIVERY, STORAGE, AND HANDLING**

- 1.7.1. Deliver, store, and handle materials following manufacturer instructions.
- 1.7.2. Immediately upon delivery notify the manufacturer of damaged or defective materials for replacement.
  - 1.7.2.1. Verify manufactures labels meet approved product name, color, texture and finish.
- 1.7.3. Store factory sealed materials indoors, above grade and protected from sun, weather and materials that could cause staining or discoloration of finish.
  - 1.7.3.1. Maintain humidity levels less than 65 percent relative humidity prior to installation.

**1.8. WARRANTY**

- 1.8.1. Manufacturer to warrant against material defects and manufacturing tolerances for a period of 10 years.
- 1.8.2. Installer to warrant against installation defects for a period of 2-4years. Repair or replace materials during warranty period at no cost to DSWD.

**PART 2 - PRODUCTS**

**2.1. MANUFACTURERS**

- 2.1.1. Must be approved by the architect.

**2.2. FABRICATION**

- 2.2.1. **Panels:** Solid phenolic impregnated kraft paper wall panels with no voids, air spaces or foamed insulation in the core material.
- 2.2.2. **Panel Dimensions:** Field fabrication shall be allowed where necessary but shall be kept to an absolute minimum. All fabrication shall be done under controlled shop conditions when possible.
- 2.2.3. **Fabrication Tolerances:** Manufacturer to provide shop fabrication and pre-finishing for a warranted finish.

**2.4. ACCESSORIES**

- 2.4.1. **Fasteners:** Manufacturer approved austenitic stainless-steel fastener with bi-metal welded carbon steel point.
- 2.4.2. **Attachment System:** Manufacturer approved sub-frame system to support a cladding weight of up to 8 pounds per square foot, fabricated of 0.09-inches 6063 T5 extruded aluminum or 16-gauge G90 Galvanized steel.



## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

- 3.1.1. Examine materials, installation instructions, and review manufacturer's instructions on site.
- 3.1.2. Verify panel style, color, and fasteners are approved by the Architect.
- 3.1.3. Verify substrates and adjacent surfaces are level and plumb for installation.
  - 3.1.3.1. Do not begin work until construction has progressed to allow installation of materials.
  - 3.1.3.2. Confirm sheathing is plumb and level, with no deflection greater than 1/4- inch in 20 feet.
  - 3.1.3.3. Verify manufacturers fastener spacing requirements.
  - 3.1.3.4. Verify proper hole diameter in panels per manufacturer's instructions.
- 3.1.4. Proceed with work when construction has progressed to allow a warranted installation.

### **3.2. INSTALLATION**

- 3.2.1. Install in accordance with manufacturer's instructions and Shop Drawings, maintaining required 1-inch ventilation spacing requirement.
- 3.2.2. Fasten panels to an approved attachment system structurally supported by aluminum, galvanized steel or wood stud supported wall.
- 3.2.3. Install panel square, edges clean and true to size.
  - 3.2.3.1. Cut panels to fit at perimeter and around penetrations with minimum 3/8-inch gap.
  - 3.2.3.2. Re-chamfer field cut edges.
- 3.2.4. Do not install damaged, irregular or defective panels.

### **3.3. FIELD QUALITY CONTROL**

- 3.3.1. Inspect panel ventilation at top and bottom of wall for proper vertical air flow required for rainscreen systems.
- 3.3.2. Comply with manufacturer's written installation instructions applicable to products and applications indicated.
- 3.3.3. Verify installation, fasteners and connections with adjacent materials, and transitions have been completed in accordance with shop drawings.
- 3.3.4. Installer is responsible for engineering the connection between the Stonewood system and the supporting wall.

### **3.4. ADJUSTING**

- 3.4.1. Modify, adjust and replace panels not within manufacturer's tolerances and as required by the Architect.

### **3.5. PROTECTION**

- 3.5.1. Protect surface, corners and components from damage prior to DSWD's occupancy using temporary protection.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 10 - "SPECIALTIES"

### Section 1. Signages

14 JUNE 2023

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ARJMM/ REV. 00

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## **SIGNAGES**

### **PART 1 GENERAL**

#### **1.1. SCOPE**

1.1.1. Furnish materials and equipment and perform labor required to complete the installation of exterior/interior signages and digital print/ceramic art on ceramic board, at location indicated on the drawings.

#### **1.2. SUBMITTALS**

The following shall be submitted:

##### **1.2.1. Shop Drawings**

1.2.1.1. Drawings showing elevations of each type of sign, digital print and ceramic art (any applicable) on ceramic board; dimensions, details, and methods of mounting or anchoring; shape and thickness of materials; and details of construction. A schedule showing the location, each sign type, and message as well as digital print and ceramic art on ceramic board shall be included.

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Materials shall be wrapped for shipment and storage, delivered to the jobsite in manufacturer's original packaging, and stored in a clean, dry area in accordance with manufacturer's instructions.

#### **1.4. WARRANTY**

1.4.1. Manufacturer's standard performance guarantees or warranties that extend beyond a one year period shall be provided.

### **PART 2 PRODUCTS**

#### **2.1. MANUFACTURER**

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

#### **2.2. SIGNAGE**

2.2.1. Refer to the plans for the details and requirements.

### **PART 3 EXECUTION**

#### **3.1. INSTALLATION FOR SIGNAGES**

3.1.1. Installations shall be in accordance with the manufacturers guide. It should be free from exposed and unnecessary cuts, holes or blank plates, advertising labels, other than as particularly shown on the Drawings, specified herein or approved by the Architect.

3.1.3. Exposed surfaces shall be clean and free from dust, dirt, scratches, dents, broken parts or units, chips, cracks, misaligned or improperly fitted joints, stains, discoloration or other defects or damage.

3.1.3. Each unit shall be assembled tightly and rigidly, secured in place and free from unnecessary movement.



3.1.4. Each unit assembly shall be set straight, plumb, level, accurately positioned and spaced at locations required.

3.1.5. Signs or dimensional letters shall be installed in accordance with approved manufacturer's instructions at locations shown on the approved detail drawings.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 10 - "SPECIALTIES"

### Section 2. Toilet and Bath Accessories

14 JUNE 2023

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Revision	Date	Description



## TOILET ACCESSORIES

### **PART 1 GENERAL**

#### **1.1. SCOPE**

1.1.1. This specification covers the furnishing of materials and labor necessary to complete the installation of all toilet accessories as shown on drawings and as specified herein.

#### **1.2. SUBMITTALS**

##### **1.2.1. Manufacturer's Catalog Data**

1.2.1.1. Submit for each type of accessories specified. Include descriptions of materials, finishes, fastenings and anchoring devices, and appurtenances.

##### **1.2.2. Samples**

1.2.2.1. Submit one of each type of accessory complete with appurtenances and finish as specified. Approved samples may be installed in the work provided each sample labeled for identification and location recorded.

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Deliver materials to the site in unopened containers, labeled with the manufacturer's names and brands, ready for installation. Store accessories in safe, dry locations until needed for installation.

### **PART 2 PRODUCTS**

#### **2.1. MATERIALS AND FABRICATION**

2.1.1. Fabricate accessories in accordance with commercial practice, with welds ground smooth. Bend, flange, draw, form, and perform similar operations in a manner to ensure no defects. Flanges of recessed accessories to return to walls to provide a continuous, tight-against the wall installation.

#### **2.2. FINISHES**

2.2.1. Finishes on metals not specified otherwise shall be provided as follows: Metal Finish

Corrosion-resisting steel	General-purpose polished (Stainless Steel)
Aluminum	Satin Anodic, Clear
Carbon Steel	Bright Chromium Plate
Copper Alloy (Brass)	Bright Chromium Plate
Zinc Alloy	Bright Chromium Plate

#### **2.3. TOILET ACCESSORIES**

2.3.1. See Plumbing Drawings.

Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.



## **PART 3 EXECUTION**

### **3.1. INSTALLATION**

3.1.1. Shall be in accordance with the manufacturer's guide. Field measurements shall be taken prior to the preparation of drawings and fabrication to ensure proper fits. Surfaces of fastening devices exposed after installation shall have the same finish as the attached fixtures. Exposed screw heads shall be oval. Install fixtures at the location and height as shown on the drawings. Protect exposed surfaces of accessories with strippable plastic or by other means until the installation is accepted. Coordinate fixture manufacturer's mounting details with other trades as their work progresses. After installation, thoroughly clean exposed surfaces and restore damaged work to its original condition or replace with new work.

#### **3.1.1. Recessed Accessories**

Set anchors in mortar in masonry construction or fasten to metal studs or framing with sheet metal screws in metal construction.

#### **3.1.2. Surface Mounted Accessories**

Mounting on concealed back-plates shall have concealed fasteners. Unless indicated or specified otherwise, install fixtures with sheet metal screws or wood screws in lead-lined braided jute, teflon or neoprene sleeves, or lead expansion shield, or other approved fasteners as required by the construction. Install back-plates in the same manner, or provide with lugs or anchors set in mortar, as required by the construction.

### **3.2. QUALITY CONTROL**

3.2.1. Inspect each installed fixture and fitting for damage. Replace damaged units or components. Test fixtures and fittings and accessories to demonstrate proper operation upon completion of installation and after units are pressurized. Replace malfunctioning fixtures and fittings and accessories or components, and re-test. Repeat until all units are operating properly.

### **3.3. ADJUSTING AND CLEANING**

3.3.1. Operate and adjust faucets and controls. Replace damaged units. Adjust water pressure at faucets and valves and flushometers having controls to provide proper flow and stream of water. Replace washers for leaks and drips. Clean fixtures, fittings and accessories and spout and drain strainers with manufacturer's recommended cleaning methods and materials.

### **3.4. PROTECTION**

3.4.1. Provide protective covering for installed fixtures and fittings. Close off water supply until turnover and do not allow use of fixtures and fittings for temporary facilities. Close off the area completely if possible.

**\*\*\* END OF SECTION \*\*\***



# ELECTRICAL SPECIFICATION

## DIVISION 16 - "ELECTRICAL"

14 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## ELECTRICAL SPECIFICATIONS

### **PART 1 GENERAL**

#### **1.1. GENERAL DESCRIPTION**

1.1.1. The work to be done under this divisions of the Specifications consist of the fabrication, furnishing delivery and installation, complete in all details of the Electrical Work, at the subject premises and all work materials incidental to the proper completion of the installation, except those portions of the work which are expressly stated to be done by others. All work shall be done in accordance with the governing Codes and Regulations and with the Specifications, except where the same shall conflict with such codes etc., which latter shall then govern. The requirements with regards to materials and workmanship specify the required standard for the furnishing of all labor, materials and appliances necessary for the complete installation of the work specified herein and indicated on the drawings. The Specifications are intended to provide a broad outline of the requirement and are not intended to include all details of design and construction.

#### **1.1.2. LAWS/CODES and REGULATIONS:**

1.1.2.1. The work under this division shall be executed in accordance with the latest requirements of the following:

1.1.2.1.1. The National Building Code of the Philippines

1.1.2.1.2. Philippine Electrical Code Laws, ordinances, and regulations of the locality having jurisdiction over the project.

1.1.2.1.3. Power and telephone utility companies

1.1.2.1.4. UAP Doc. 301

1.1.2.2. The requirements of the above-mentioned governing laws/codes and the requirements of the companies having involvement/participation are hereby made part of these Specifications and the contractor is required to comply with the same. This does not relieve the contractor from complying with requirements of specifications or drawings in excess of above laws and ordinances, codes and requirements which are not prohibited by the same.

#### **1.1.3. GUARANTEE**

1.1.3.1. The contractor shall guarantee that the electrical system is free from all grounds and defective materials and workmanship for a period of one (1) year from the date of acceptance of the work. All defects arising within the guarantee period shall be reminded by the contractor at his own expense. The contractor shall indemnify and save harmless procuring entities from and against all claims, suits, actions, or liabilities for damages arising from injuries, disabilities or loss of life to persons or damage to public or private properties resulting from fault or any act of contractor or his representative in the execution of this work. The partial acceptance of the work for the purpose of making partial payments, based on the estimated cost satisfactorily completed by the contractor, shall not be considered as final acceptance of that portion of the work.

#### **1.1.4. DRAWINGS & SPECIFICATIONS**

1.1.4.1. The electrical plans, which constitute an integral part of these Specifications, shall serve as the working drawings. The plans indicate the general layout and arrangement of the complete electrical system and other works.



1.1.4.2. The drawings and specifications are meant specifically to be complementary to each other and where it is called for by one shall be binding as if called for by both. Anything which is basically required to complete the installation for proper operation but not expressly mentioned on the drawings and/or specifications shall be furnished and installed by the contractor at no extra cost to the procuring entity as though specifically stipulated or shown in both.

1.1.4.3. Procuring Entity shall have the final decision on any apparent conflict between the drawings and specifications or on any under and controversial point in either or both.

1.1.4.4. All dimensions and locations shown on the plans are approximate and shall be verified in the field, as actual locations, distances, and levels are governed by actual conditions.

## 1.2. SCOPE OF WORK

1.2.1. The work to be done under this division shall include the furnishing of all tools, labor, supervision, equipment, fixtures and all necessary materials, each complete and in proper working condition unless one or other is specifically excluded or stated otherwise in this specification but not limited to the following items of works.

1.2.1.1. All works and material for a complete lighting and power systems including cables and conduits, circuit breakers, panelboard and connection to all lighting fixtures and power outlets, motor appliances, switches, supports and accessories.

1.2.1.2. All excavation works, backfilling, dewatering, removal of surplus earth, preparation of formworks and pouring of concrete envelopes as indicated on the drawings or as required to complete the installation.

1.2.1.3. All steel support for conduits, wires, panelboard, boxes, lighting fixtures, etc. as indicated or as required to complete the installation.

1.2.1.4. A complete grounding system as required by the governing codes.

1.2.1.5. A complete testing of all electrical systems.

1.2.1.6. Where material is furnished and supplied by the Engineer, the Contractor shall receive, unload, handle and transport to the site, assemble and install completely. This Contractor shall be responsible for safekeeping and warehousing of such materials/equipment from the time of his acceptance.

1.2.1.7. All items incidentals to and or required for the proper completion such as painting of boxes, conduits and the likes.

1.2.1.8. Coordination with other trade Contractors.

1.2.1.9. Coordination with other companies/offices including handling of all material related to material testing and application of electrical permits.

1.2.1.10. Preparation of necessary shop drawings required for the proper execution of the works subject to the approval of the Engineer.

1.2.1.11. Preparation of "As-Built" drawings.

1.2.2. Work Not Included Under Electrical Works The work excludes the furnishing of the following:

1.2.2.1. Supply and installation of all motors, pumps and their associated control equipment.





1.2.2.1.1. All electrical system installation beyond the motor branch circuit breakers.

1.2.2.1.2. All motor controllers as indicated to be supplied with equipment.

1.2.2.1.3. Structural foundation of the above.

1.2.3. If any item of works or material has been omitted which are necessary for the completion of the Electrical Work as outlined herein before, then such items shall be hereby included in this section of work.

### **1.3. PROCEDURES**

#### **1.3.1. Workmanship**

1.3.1.1. The contractor shall execute the work in the most thorough, prompt and workmanlike manner and in accordance with the plans and specifications. The installations shall be done through standard methods and good engineering practices.

#### **1.3.2. Materials**

1.3.2.1. All materials to be installed shall be brand new except as otherwise noted on the plans or specifications. The materials shall be as specified. No substitution of materials is allowed. Should the contractor find it necessary to use another type/brand of materials instead of the specified item, he shall first obtain approval from the procuring entity prior to installation. Any substituted material installed without the approval of the procuring entity shall be subject to replacement.

#### **1.3.3. Coordination**

1.3.3.1. It is the sole responsibility of the contractor to conduct coordination of his activities with the following:

1.3.3.1.1. Other trades and suppliers

1.3.3.1.2. Procuring Entity/Engineer

1.3.3.1.3. EPPI

1.3.3.1.4. Local Government Authority

1.3.3.1.5. Deviation From The Plans

1.3.3.2. No deviation from the plans is to be made unless given notice or approval by the procuring entity.

#### **1.3.4. Record Drawings and “As-Built” plan.**

1.3.4.1. The contractor is required to keep an active record of the actual installation during the progress of the job. This shall be the reference in the preparation of the As-Built plans which shall include all pertinent information, complete in all aspects of the actual installation, and all new information not originally shown in the contract drawings. The As-Built plans shall be prepared by the contractor at his expense and shall be submitted to the Procuring Entity for approval upon the completion of the work. The approval of the As-Built drawings shall be a prerequisite for the final acceptance of the electrical works. Submit two (2) copies of the “As-Built” drawings signed and dry sealed by a Registered Professional Electrical Engineer. Original tracing/reproducible copy shall also be submitted to the procuring entity.



## 1.4. SUBMITTALS

1.4.1. Obtain approval before procurement, fabrication or delivery of items to the job site. Partial submittals will not be entertained and will be returned without review. Submittals shall include the manufacturer's name, trade name, place of manufacturer, catalogue model of number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference and technical society publication references, and other information necessary to establish contract compliance of each item to be furnished.

1.4.1.1. Shop Drawings In addition to the requirements of the contract clauses, shop drawings shall meet the following requirements:

1.4.1.1.1. Drawings shall be a minimum of 210 mm x 297 mm in size or in A3 size, except as specified otherwise.

1.4.1.1.2. Drawings shall include wiring diagrams and installation details indicating the proposed location layout and arrangement, control panels, accessories, and other items that must be

1.4.1.1.3. Wiring diagrams shall identify circuit termination and the internal wiring for each item of equipment and its interconnection.

1.4.1.1.4. Drawings shall indicate adequate clearances for operation, maintenance and replacement of equipment devices. If the layout is disapproved, revise the layout and resubmittal. All shall be applied after approval by the DSWD.

1.6.1.2. *"As-Built" Drawings*

1.6.1.2.1. The cost of as-built drawings shall be borne by the Contractor. Submittal of such drawings shall be a condition to final payment.

## 1.5. DELIVERY AND STORAGE

1.5.1. Handle, store, and protect equipment and materials in accordance with the manufacturer's recommendations. Replace damaged or defective items with new one.

## 1.7. ELECTRIC POWER

1.7.1. The contractor shall be responsible for his own electric power needed for the execution of the job.

## 1.8. TEST

1.8.1. Conduit tests on all electrical conductors installed in the presence of the procuring entity's representative.

1.8.1.1. check for grounds

1.8.1.2. insulation resistance test

1.8.1.3. continuity test for all outlets

1.8.1.4. voltage level test

1.8.1.5. phase relationship

1.8.1.6. check circuit connections at panel boards, all single phase circuits shall be connected to phase as shown in the load schedule.

1.8.2. All defects found during the test shall be repaired immediately by the contractor.



1.8.3. All tools, equipment and instruments needed to conduct tests shall be on the account of the contractor. All materials installed without prior approval shall be at the risk of the Contractor.

## 1.9. GENERAL NOTES

1.9.1. All electrical works and installations shall comply with the provisions of the latest edition of the Philippine electrical code with the rules and regulations of the national and local authorities concerned in the reinforcement of electrical laws and with the rules and regulations of utility companies concerned.

1.9.2. Service voltage to the building shall be 230 volts, three phase, three (3) wire systems.

1.9.3. The contractor shall verify the actual location of the concrete terminal pole connection to the power service supply.

1.9.4. All installation and wirings are concealed from view and shall be encased in polyvinyl chloride (PVC) pipes of schedule 40 except for power service entrance which shall be rigid steel conduit (RSC) pipes unless otherwise specified.

1.9.5. Minimum wire and conduit size shall be no. 12 (3.5sq.mm.) TW AWG and 12mm diameter size respectively, for power supply outlets.

1.9.6. Pull boxes of appropriate size shall be provided even if not indicated in drawing to accommodate the number of wires and splices.

1.9.7. All fluorescent fixtures shall be provided with polyester filled, preheat, thermally protected high factor ballast.

1.9.8. All materials to be used shall be new of approved type appropriate for both location and intended use.

1.9.9. Light control switches shall be rated 10a 300v and shall carry a load greater than 50a.

1.9.10. Duplex convenience outlets shall be rated 10a, 250 volts and special purpose outlets shall be rated 15a, 250 volts.

1.9.11. For each spare unit in the panel board, provide an empty 20mm diameter riser terminating in a 2.5" by 4" octagonal box above the ceiling.

1.9.12. All works shall be done under the direct supervision of a duly licensed electrical engineer or a registered master electrician.

1.9.13. Outlet boxes shall be as follows:

1.9.13.1. Light outlets : 1-1/2" deep 4" octagonal box 1 or 2 way entries.  
2-1/3" deep 4" octagonal box 3 or 4 way entries.

1.9.13.2. Receptacles/ telephone outlets: 2-1/8" deep 2"x4" utility box 1 gang raised plastic cover for 3 or 4 raceway entries.

1.9.14. No revision on the design shall be done without the prior knowledge and approval of the designer and the DSWD. Any such revision done without approval causes responsibility of the designer to cease as a whole:

1.9.14.1. Panel box 1.70m from top of panel box to finish floor line

1.9.14.2. Switch/push button 1.37m from center of device to finish floor line

1.9.14.3. Convenience outlet; intercom; telephone outlet; range outlet 0.30m from center of device to finish floor line



1.9.14.4. Buzzer; chime & fire alarm; 1.20m from center line of device to finish floor line.

## **PART 2 PRODUCT**

### **2.1. SUPPLIER**

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

## **PART 3 EXECUTION**

3.1. Installation shall be in accordance with approved shop drawings and manufacturer's installation/guide and directions. Testing and adjustments shall be performed prior to final acceptance.

**\*\*\* END OF SECTION \*\*\***



# PLUMBING SPECIFICATION

## DIVISION 22 - "PLUMBING"

14 JUNE 2023

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Revision	Date	Description



## PLUMBING SPECIFICATIONS

### **PART 1 GENERAL**

#### **1.1. SCOPE OF WORKS**

1.1.1. The work to be undertaken under this section shall consist of the furnishing of all materials, labor tools, equipment and other facilities and the satisfactory performance of all work necessary for the complete installation, testing and operation of the plumbing system accordance with the applicable drawing and this section of that specifications consisting of, but not necessarily limited to the following:

1.1.1.1. Soil, waste and vents pipe system, within the building up to the sewer line.

1.1.1.2. Interior fire protection system consisting of combination standpipes, valves, fire hose cabinets, inlets, connectors and portable fire extinguishers.

1.1.1.3. Water service connection from the main building distribution system.

1.1.1.4. Furnishing, installation and testing of water closets, lavatories, accessories including controls & piping works.

1.1.1.5. Furnishing and installation of all plumbing fixtures, fittings, trims and accessories.

1.1.2. All work shall be performed in accordance with the requirements of all applicable laws of the Republic of the Philippines and all local codes and ordinances.

1.1.3. The contractor is required to refer to all mechanical, electrical, structural and architectural plans and specifications all shall investigate all possible interference and conditions affecting his work in this section and that of the other sections.

1.1.4. All plumbing works to be done and sizes of pipe to be used shall be of the sizes, which are required and in accordance with the National Plumbing Code of the Philippines.

#### **1.2. RELATED SECTIONS**

1.2.1. Toilet and Bath Accessories

1.2.2. Toilet Compartments

#### **1.3. GENERAL REQUIREMENTS**

##### **1.3.1. Construction Requirements**

1.3.1.1. The Contractor before any installation work is started shall carefully examine the plans and shall investigate actual structural and finishing work conditions affecting all the works. Where actual condition necessitates a rearrangement of the approved pipe layout, the Contractor shall prepare a plan for the proposed lay-out.

##### **1.3.2. Drawing and Specifications:**

1.3.2.1. The contract drawings and the specifications are complementary to each other, and any labor or materials called for by both, if necessary, for the successful operation of any other particular types of equipment shall be furnished and installed without additional cost of Procuring Entity.

1.3.2.2. All dimensional locations of fixtures, equipment, floors and roof drains, risers and pipe. Chases shall be verified on the architectural drawings and manufacturer's catalogs.



1.3.2.3. Upon completion of the work as described herein, the Contractor shall at his own expense furnish the Procuring Entity originals and three (3) sets of "AS BUILT" Plans for future reference and maintenance purposes.

### 1.3.3. Protection

1.3.3.1. The contractor shall protect all his work and materials loss, injury or defacement. Protection of fixtures and materials shall be provided by boards, papers and/or cloth as required and any loss, damaged or deface material shall be replaced by the Contractor at his own expense.

### 1.3.4. Installation and Workmanship

1.3.4.1. All labor shall be performed in a first-class, neat and workmanlike manner by mechanics skilled in their work shall be satisfactory to the Project Architect.

1.3.4.2. No piping in any location shall be closed up, furred in or covered before testing and the examination of the same by the inspector, Procuring Entity or their representatives.

## 1.4. IDENTIFICATION OF MATERIALS:

1.4.1. Each length of pipe, fitting, traps, fixtures, and device used in the plumbing system shall have cast, stamped or indelibly marked on it the manufacturer's trademark or name, the weight, the type, and classes of product when so required by the standards mentioned above.

1.4.2. All plumbing fixtures and fittings installed without the above trademarks shall be removed and replaced with probably marked fixtures and fittings without any extra cost to the Procuring Entity.

## 1.5. WATER SUPPLY

1.5.1. Pipes and fittings for the waterline shall be as SPECIFIED BY EPPI.

1.5.2. Valves-All valves, unless otherwise specified shall be gate valves of size as indicated in the drawings: for hot water supply, valves and fittings shall be insulated of a thickness equal to that of the insulation on the adjoining pipe, securely fastened in place.

### 1.5.2.1. SANITARY DRAINAGE

1.5.2.1.1. Soil and waste Pipes and Fittings: Soil and waste pipes and fittings shall be PVC pipes (POLYVINYL CHLORIDE) series 1000.

1.5.2.1.2. Vent Pipes and Fittings: Vent pipes and fittings shall be PVC pipes

1.5.2.1.3. Shower and Floor Drains: Shower and floor drains shall be of high grade, strong, tough, and even grained metals.

1.5.2.1.4. Cleanouts:

1.5.2.1.4.1. Ceiling cleanouts shall be of the same material as pipe with sealed screw type, raised head plug.

1.5.2.1.4.2. Floor cleanouts shall be cast-iron body with brass plug, colt-type or countersunk head; METMA brand.

### 1.5.2.2. HANGERS, INSERTS AND PIPE SUPPORTS

1.5.2.2.1. Provide suitable and substantial hangers and supports for all piping.



1.5.2.2.2. Support horizontal piping in accordingly approved sizes where pipe clamps are too short to connect to the building construction.

## **1.6. SUBMITTALS**

### **1.6.1. Manufacturer's Catalog Data**

1.6.1.1. Submit for each type of fixture specified. Include descriptions of materials, finishes, fastenings and anchoring devices, and appurtenances.

### **1.6.2. Samples**

1.6.2.1. Submit one of each type of accessory complete with appurtenances and finish as specified. Approved samples may be installed in the work provided each sample labeled for identification and location recorded.

## **1.7. DELIVERY AND STORAGE**

1.7.1. Deliver materials to the site in unopened containers, labeled with the manufacturer's names and brands, ready for installation. Store accessories in safe, dry locations until needed for installation.

## **PART 2 PRODUCTS**

### **2.1. MATERIALS AND FINISHES**

2.1.1. This specification covers all plumbing fixtures made from a mixture of white burning clays and finely ground minerals, the wares are subjected to a high temperature rendering them incapable of adsorbing liquid, when unglazed, does not have a mean value of water absorption greater than a 5% of the dry weight making it sanitary and odorless. It is then coated on all exposed surfaces with an impervious non-crazing vitreous glaze giving it a permanent colored finish and retains high quality gloss resistant to acids and alkalis making it easy to maintain.

## **PART 3 EXECUTION**

### **3.1. INSTALLATION**

3.1.1. Surfaces of fastening devices exposed after installation shall have the same finish as the attached fixtures. Exposed screw heads shall be oval. Install fixtures at the location and height as shown in the drawings. Protect exposed surfaces of accessories with strippable plastic or by other means until the installation is accepted. Coordinate fixture manufacturer's mounting details with other trades as their work progresses. After installation, thoroughly clean exposed surfaces and restore damaged work to its original condition or replace with new work.

#### **3.1.2. Surface Mounted Accessories**

3.1.2.1. Mounting on concealed back-plates shall have concealed fasteners. Unless indicated or specified otherwise, install fixtures with sheet metal screws or wood screws in lead-lined braided jute, teflon or neoprene sleeves, or lead expansion shield, or other approved fasteners as required by the construction. Install back-plates in the same manner, or provide with lugs or anchors set in mortar, as required by the construction.

### **3.2. WATER SYSTEM TEST**

3.2.1. Upon completion of the roughing-in and before fixtures, the entire water piping system shall be tested at a hydrostatic pressure of one and half (1-1/2) times the expected working pressure in the system when in operation, and proven tight at this pressure or not less than 150 psi gauge.





3.2.2. Where a portion of the water piping system is to be concealed before completion, this portion shall be tested separately in a manner to that described for the entire system, and in the presence of the Procuring Entity or its representative.

### **3.3. DRAINAGE SYSTEM TEST**

3.3.1. The entire drainage and venting system shall have necessary openings which can be plugged to permit the entire system to be filled with water to the level of the highest vent stack and/or vent above the roof.

3.3.2. The system shall hold this water for a full thirty (30) minutes during which time there shall be no drop more than four inches 100mm (4").

3.3.3. If and when the Procuring Entity decides that an additional test is needed, such as an air or smoke test on the drainage system, the Contractor shall perform such test without additional cost to the Procuring Entity.

**\*\*\* END OF SECTION \*\*\***

## GENERAL SPECIFICATIONS

# “PROPOSED ADDITIONAL IMPROVEMENTS OF RECEPTION & STUDY CENTER FOR CHILDREN BUILDING”

PROJECT TITLE

**DSWD-CAR, RECEPTION & STUDY CENTER FOR  
CHILDREN, WANGAL, LA TRINIDAD, BENGUET**

PROJECT LOCATION

Written and Prepared by:

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# GENERAL SPECIFICATIONS

## DIVISION 1 - "GENERAL PARAGRAPHS"

30 JUNE 2023

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ArGNR/ArJMM/EngrCJCT/REV. 00

Revision	Date	Description

### DIVISION 1 - GENERAL PARAGRAPHS



## **PART 1. GENERAL**

### **1.1. DESCRIPTION**

1.1.1. The work specified herein is the **PROPOSED ADDITIONAL IMPROVEMENTS OF RECEPTION AND STUDY CENTER FOR CHILDREN BUILDING; *Improvement of Main Kitchen, Construction of Comfort Room and Lactation Station Compartments and Construction of Access Ramp*** located at **DSWD-CAR, Reception and Study Center, Wangal, La Trinidad, Benguet.**

### **1.2. PROJECT INFORMATION**

1.2.1. The work shall confirm the following contract drawings, details and maps, all of which form part of these specifications.

1.2.2. Omissions from the drawings or specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customary performed, shall not relieve the Contractor from performing as if fully and correctly set forth and described in the drawings and specifications.

1.2.3. The Contractor shall check all drawings and furnish it immediately upon receipt and shall promptly notify the Project Engineer/Architect of any discrepancies. Figures marked on drawings shall be followed in preference to scale measurements. Large scale drawings shall govern small scale drawings. The contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

1.2.4. All drawings issued for construction to General Contractor/s, Sub-contractor shall be furnished solely by the Buildings and Grounds Management Section.

1.2.5. Physical Data: The physical conditions indicated on the drawings and in the specifications are the results of site investigations by survey and soil investigations conducted. However, it is expressly understood that the Architect/Designer will not be responsible for any interpretations or conclusions drawn therefrom.

### **1.3. EXISTING WORK**

1.3.1. The disassembling, disconnecting, cutting, removal, or altering of existing work in any way shall be carried on in such a manner as to prevent damage on all portions of existing work, whether they are to remain in place, reused in the new work, or salvaged and stored.

1.3.2. All portions of existing work which have been cut, damaged or altered in any way during construction operations shall be repaired or replaced with a kind which matches the existing or adjoining work. All work of this nature shall, at the completion of all operations, be left in a condition which is as good as what existed before the new work started.

## **PART 2 SUBMITTALS**

### **2.1. PROPOSED MATERIAL SUBMITTALS, CATALOGUE DATA AND SAMPLES**

2.1.1. Proposed material submittals required of the Contractor shall be submitted with ample time period prior to the execution of related scope of work to allow sufficient time for processing, review, approval and procurement before the Contractor is ready to use the material. **No material shall be used prior to the approval of the Building and Grounds Management Section (BGMS).**

2.1.2. The Contractor shall furnish the name and address of the manufacturer of each item of material and equipment. Each submittal shall be accompanied by a cover letter signed by the Contractor.



2.1.3. The Contractor shall furnish two (2) copies for approval, giving full information, such as identifying description, catalogue numbers, catalogue cuts, and data sheets as may be required for all material and equipment designated in the technical sections of this specification. Clearly mark each item proposed to be the item number of the contract and identify in the submittals, with cross references to the item number of the Contract drawings and specifications so as to clearly identify the use for which it is intended. Data submitted in a bound volume in the same numerical sequence as specification section paragraphs.

2.1.4. The Contractor shall certify on all submittals that the material being proposed conforms to the contract requirements. In the event of any variance, the Contractor shall state specifically which portions vary, and request approval of a substitute. Incomplete submittals and submittals with inadequate data will be rejected.

## 2.2. SHOP DRAWINGS

2.2.1. Before starting the fabrication or installation of any of this work, the Contractor shall submit drawings as may be required and designated in the technical sections of this specification.

2.2.2. In addition to the drawings designated in the technical sections, the Contractor shall submit drawings as may be required and designated in the technical sections of this specification.

2.2.3. The Contractor shall prepare at his own expense and submit with such promptness as to cause no delay in his work or in that of any other Contractor doing work on the same building, two (2) blueprint copies in 30" x 20" or A1/A3 size of all shop drawings, as well as schedules, required corrections, including all necessary corrections to artistic effect. The Contractor shall make any corrections required by the Architect, file with him two (2) corrected copies and furnish such other copies as may be needed.

2.2.4. Shop drawings are to be submitted with ample time period prior to the execution of related scope of work to allow sufficient time for processing, review and approval.

**2.3.** The Contractor shall not be relieved of responsibility for any deviation from the requirement of the Contract Documents by the Architect's approval of Shop Drawings, Product Data or samples unless the Contractor has specifically informed the Architect in writing such deviation at the time of submission and the Architect has given written approval to the specific deviation.

**2.4.** The Contractor shall not be relieved from the responsibility for errors or omissions in the Shop Drawings, Product Data or samples by the Architect's approval thereof.

**2.5.** No portion of work requiring submission of Shop Drawings, Product Data or sample shall be commenced until the submittal has been approved by the Architect. All such portions of the work shall be in accordance with approved submittals.

## 2.6. MOCK-UP:

2.6.1. *GENERAL:* As soon as practicable, provide a complete installation of mock-up test panels as required by the Contract Documents, Modifications deemed necessary shall be made in mock-up for evaluation, and re-tested until specified results are obtained.

2.6.2. Tests shall be conducted at Contractor's expense; Modifications for the mock-up as required from the result shall be obtained.

2.6.3. Coordinate mock-up test conditions and procedure with the BGMS prior to the test.

**2.7. Architect's Review of Material Submittals:** The Architect shall review Shop Drawings, Product Data, and Samples with reasonable promptness upon Architect's receipt and will apply Architect's stamp thereto. Notations by the Architect which would increase contract cost or time of completion shall be



brought to the Architect's attention before proceeding with the Work. Each submittal will be stamped indicating appropriate action as follows:

2.7.1. **"A" Action:** Means that fabrication, manufacture, or construction may proceed providing that all submittal complies with the Architect's notations and Contract Documents.

2.7.2. **"B" Action:** Means that fabrication, manufacture, or construction may proceed, provided with submittal which complies with the Architect's notations and Contract Documents. If, for any reason, Contractor cannot comply with notations, Contractor shall make revisions and resubmit as described for submittals stamped "C" action.

2.7.3. **"B" Action-resubmit:** Means that fabrication, manufacture, construction may proceed; however, if the submittal did not fully demonstrate the full extent of all conditions, details, or coordination with other surrounding work, and, therefore, requires additional information and rework as noted. These shop drawings shall be submitted for final "A" and "B" action. Specific areas requiring additional information shall not be fabricated, manufactured or constructed prior to resubmission.

2.7.4. **"C" Action:** Means that submittal does not comply with design intent of Contract Documents. Submittals stamped "C" Action are not to be used. Contractor shall make revisions and resubmit.

## **2.8. IMPLEMENTING AGENCY (DSWD) REQUIREMENTS FOR APPROVAL, TESTING AND COMMISSIONING OF THE FOLLOWING:**

### **2.8.1. For Architectural Systems:**

The contractor shall submit all required certifications pertaining to the relevant floor, walls and ceiling systems as part of the conformance of the Buildings and Ground Management Section's requisitions.

### **2.8.2. For Electrical System:**

Conduct Electrical Insulation Resistance Test, balancing of load, current reading during lean & peak loads and voltage reading along with a submission of Certificate of Calibration for kW-Hr meter if required, and all Certificate of Commissioning for all electrical works.

### **2.8.3. For Plumbing/Sanitary System:**

Conduct Water Pressure Testing, 24-hour flood testing of waterproofing prior to floor topping, hydrostatic leak test of piping works with a submission of Certificate of Flood Testing to the area waterproofed and all Certificate of Commissioning for all plumbing works along with a provision of water meter with a Certificate of Calibration from the pertinent local water district or such other water concessionaire.

### **2.8.4. For Ventilation System:**

Ventilation Testing & Commissioning to conduct a light test of ductworks along with submission of Certificate of Commissioning for all ventilation works.

### **2.8.5. For Fire Sprinkler System**

Conduct hydrostatic leak testing at 150psi for two (2) hours. Contractor shall submit Certificate of hydrostatic test for sprinkler pipe and all Certificate of commissioning for the fire sprinkler system.

**\*\*\* END OF SECTION \*\*\***



# GENERAL SPECIFICATION

## DIVISION 2 - "SITE CONDITIONS"

30 JUNE 2023

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ArGNR/ArJMM/EngrCJCT/REV. 00

Revision	Date	Description



## SITE CONDITIONS

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUMMARY

1.2.1. This section includes:

- 1.2.1.1. Site clearing
- 1.2.1.2. Removal and Disposal of Construction Materials
- 1.2.1.3. Storage and Filing of materials
- 1.2.1.4. Site Preparation
- 1.2.1.5. Earthwork
- 1.2.1.6. Foundation Works
- 1.2.1.7. Filing and Backfilling

#### 1.3. SITE CLEARING

1.3.1. Should the existing RSCC Building has structural and utility deficiencies found by the General Contractor, it shall be completely demolished together with all concerned structure involved prior to the approval of the BGMS.

#### 1.4. REMOVAL AND DISPOSAL OF CONSTRUCTION MATERIALS

1.4.1. Legal and proper waste management and disposal shall be observed during and after the construction. All abandoned footings, utilities, etc. that interferes with new construction shall be removed.

#### 1.5. STORAGE AND FILING OF MATERIALS

1.5.1. **Delivery:** General Contractor shall ensure that materials are properly turned over and delivered on site in good quality and condition. A time and delivery record shall be available.

1.5.2. **Storage:** General Contractor shall designate and/or allot a space to sub- contractors for storage of their materials and for erection of their sheds and tool houses (if necessary). Materials shall be arranged properly and warehouse shall be maintained properly by a designated person of the General Contractor.

1.5.3. All cement, lime and other materials affected by moisture shall be stored on platforms and protected from weather. Materials shall be stored to insure the preservation of their quality and fitness for their work. Stored materials shall be located so as to facilitate prompt inspection.

1.5.4. Should it be necessary at any time to move materials, sheds or storage platforms, the Contractor shall do so at his own expense.

#### 1.6. SITE PREPARATION

1.6.1. **Staking Out:** The building shall be staked out with all the lines and grades in accordance to the drawings and shall be established before excavation starts. Basic batter boards and reference work shall be erected at such places where they will not be disturbed during the





construction of the foundation.

## 1.7. EARTHWORK

1.7.1. All earthwork shall be done in accordance with proper and immediate recommendation.

1.7.2. **Excavation and Leveling:** Excavation shall be constructed or protected so that they do not endanger life or property. Existing footings or foundations which may be affected by any excavation shall be underpinned adequately or otherwise protected against settlement and shall be protected against lateral movement. Before commencing the excavation, the person in charge of the excavation shall notify in writing (if needed) the owners of adjoining buildings and should be protected. The Contractor assumes full responsibility to provide necessary temporary support during excavation to protect adjacent properties from any damages.

## 1.8. FOUNDATION

1.8.1. Foundation is designed for a soil bearing capacity of 3000 psi or 144 MPa (or referred to in its geotechnical report). Confirmation of actual soil bearing capacity shall be done prior to construction of foundation.

1.8.2. Foundation shall rest on natural soil, unless otherwise noted by the civil/structural engineer; no part of the foundation shall rest on fill. The contractor shall notify the civil/structural engineer after footing excavation has been completed and prior to concreting to confirm the design soil bearing capacity. In case, actual soil bearing capacity is found to be less than the recommended, notify the structural engineer for proper revision of footing design.

**\*\*\* END OF SECTION \*\*\***



# STRUCTURAL SPECIFICATION

## DIVISION 3 - "CONCRETE"

30 JUNE 2023

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EngrCJCT/REV. 00

Revision	Date	Description



## CONCRETE

### **PART 1 GENERAL**

#### **1.1. RELATED DOCUMENTS**

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### **1.2. SUMMARY**

1.2.1. This section includes:

1.2.1.1. General requirements for all concrete works

#### **1.3. REFERENCES**

1.3.1. ACI 315 - Specifications for Structural Concrete for Buildings; American Concrete Institute International.

1.3.2. ACI 318.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International.

1.3.3. IBC - International Building Code: Current Editions.

1.3.4. National Building Code of the Philippines

1.3.5. National Structural Code of the Philippines

1.3.6. Local Building Codes and Regulations

#### **1.4. DELIVERY, STORAGE, AND HANDLING**

1.4.1. All materials shall be delivered in manufacturer's containers, dry, undamaged and unopened, including instructions. All clearly labelled with the manufacturer's name, product identification, expiration date, etc.

1.4.2. Store materials strictly in accord with manufacturer's printed recommendations.

1.4.3. Cement and aggregates shall be stored in such a manner as to prevent their deterioration or the intrusion of foreign matter. Cement shall be stored immediately upon arrival on the site of the work, in substantial, waterproof bodegas. The floor must be sufficiently elevated to deter dampness. Aggregates shall be stored separately from other foreign materials.

1.4.4. Water to be used for mixing the concrete shall be clean and free from injurians, amount of oil acids, alkaline, salt and other organic materials. Mixers, which have been out of use for more than 30 minutes, shall be thoroughly cleaned before fresh concrete is mixed. Mixers shall be cleaned out before changing to another type of cement.

### **PART 2 PRODUCTS**

#### **2.1. MANUFACTURERS**

2.1.1. Portland Cement must be approved by the Civil/Structural Engineer

### **PART 3 EXECUTION**

#### **3.1. EXAMINATION**

3.1.1. Embedded materials such as gravel and sand should have been inspected and tested, cleared and graded washed.

3.1.2. Verify that areas of execution are acceptable to receive the work of this section.



3.1.3. Alert the BGMS of any discrepancies, prior to commencing the Work of this section.

3.1.4. Coordinate the Work of this section with applicable trades.

### **3.2. MIXING OF CONCRETE**

3.2.1. All concrete shall be mixed thoroughly and should be deposited as nearly as practicable. Make sure that the concrete is of the required workability at the point and time of placing.

3.2.2. 1.5 cu.m. mixer capacity and not less than 90 seconds for more than 1.5 cu.m. mixer capacity. Interval of placing the concrete shall not be so long allowing the concrete in place to harden partially. The time elapsing between mixing, transporting, placing and compaction altogether of a batch of concrete shall not be longer than the initial setting time of the concrete.

3.2.3. Retempering of concrete will not be permitted.

### **3.3. PLACING PROCEDURES**

3.3.1. The concrete shall be deposited as nearly as possible in its final position. It shall be placed so as to avoid segregation of the concrete and displacement of the reinforcement, other embedded items or formworks. When placing on a nearly horizontal surface, placing shall start at the lower end of the surface to avoid decompaction of concrete.

3.3.2. For pouring of concrete for columns, the Contractor shall use drop chute with a maximum drop height of 1.50 meters or less. For pouring of concrete for slab, the Contractor shall execute the placing direction with backward movement. Concrete slab on fill with 100 mm thick shall be poured on gravel bed and shall be placed with the 10mm diameter Reinforcement Steel Bar (RSB) spaced at 400mm both ways.

3.3.3. Layers shall not be placed so that they form featheredges nor shall they be placed on a previous layer, which has taken its initial set. In order to comply with this requirement, another layer may be started before the initial set of the preceding layer.

3.3.4. Concrete shall not be placed during rain, which is sufficiently heavy or prolonged to wash mortar from coarse aggregate on the exposed faces of fresh concrete. Means shall be provided to remove any water accumulating on the surface of the placed concrete. Concrete shall not be deposited into such accumulations of water.

3.3.5. In dry weather, covers shall be provided for all fresh concrete surfaces, which are not being worked on. Water shall not be added to concrete for any reason.

### **3.4. CURING OF CONCRETE**

3.4.1. Concrete shall be protected during the first stage of hardening from loss of moisture and from the development of temperature differentials within the concrete sufficient to cause cracking. The methods used for curing shall not cause damage of any kind to the concrete.

3.4.2. Curing shall be continued for as long as may be necessary to achieve the above objectives but not less than 7 days until the concrete is covered by successive construction whichever is the shortest period. The curing process shall commence as soon as the concrete is hard enough to resist damage from the process.

3.4.3. Exposed concrete surfaces shall be closely covered with impermeable sheeting, properly secured to prevent its removal by wind and the development of air spaces beneath it. If it is not possible to use impermeable sheeting, the Contractor shall keep the exposed surfaces continuously wet by means of water spray or by covering with a water absorbent material, which shall be kept wet.



3.4.4. The contractor shall provide a suitable form of shading to prevent the direct rays of the sun reaching the concrete surfaces for at least the first four days of the curing period.

### 3.5. GENERAL REQUIREMENTS FOR ALL CONCRETE

3.5.1. All materials and workmanship shall conform to the latest building code of American Concrete Institute (ACI-318).

3.5.2. All concrete shall develop a minimum compressive strength at the end of twenty-eight (28) days with corresponding maximum size aggregate and slumps as follows:

LOCATION	28DAYS COMPRESSIVE STRENGTH	MAXIMUM SIZE AGGREGATE	MAXIMUM SLUMP
<b>Curbs &amp; Slab on Grade except Foundation</b>	3000 psi (21 mPA)	1 in. (25mm)	4 in (100mm)
<b>Foundation &amp; Retaining Wall</b>	3000 psi (21 mPA)	3/4 in. (19mm)	4 in (100mm)
<b>Beams, Slabs, Columns &amp; Shear walls</b>	3000 psi (21 mPA)	3/4 in. (19mm)	4 in (100mm)

3.5.3. In general, the latest edition of ACI- 315, manual of standard practice detailing reinforced concrete structures shall be adhered to, unless otherwise shown or noted.

3.5.4. Minimum concrete cover to be maintained for reinforcing steel:

Suspended Slabs	3/4 in. (19mm)
Slab on Grade	1 ½ in. (38mm)
Walls Above Grade	1 in. (25mm)
Beam Stirrups and Column Ties	1 ½ in. (38mm)
where concrete is exposed to earth but poured against forms	2 in. (50mm)
where concrete is deposited directly against earth	3 in. (75mm)

3.5.5. All anchor bolts, dowels, and other inserts, shall be properly positioned and secured in placed prior to placing of concrete contractor shall note and provide all miscellaneous curbs, sills, stools, equipment, and mechanical bases that are required by the Architectural, Electrical, and Mechanical drawings.

3.5.6. All concrete shall be kept moist for a minimum of seven (70 consecutive days) immediately after pouring by the use of wet burlap, fog spraying, curing compounds or other approved methods.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 4 - "MASONRY"

30 JUNE 2023

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/ArJMM/EngrCJCT/REV. 00

Revision	Date	Description



## UNIT MASONRY ASSEMBLY

### PART 1 GENERAL

#### 1.2. DEFINITIONS

##### 1.2.1. Concealed Masonry Surfaces:

- 1.2.1.1. Surfaces of foundation walls against which backfill is placed.
- 1.2.1.2. Surfaces covered by furring and wallboard plaster, stucco, or masonry facings.
- 1.2.1.3. Surfaces above suspended ceilings.
- 1.2.1.4. Surfaces within attic spaces, crawl spaces, pipe or duct chases and elevator shafts.

##### 1.2.2. Exposed Masonry Surfaces

Masonry surfaces other than those listed above including those to be painted.

##### 1.2.3. Grout Lift and Grout Pour

A grout lift is the layer of grout placed in a single continuous operation. A grout pour is the entire height of grout fill placed in one day and is composed of a number of successively placed grout lifts.

##### 1.2.4. Reinforced Hollow Unit Masonry

Hollow concrete masonry units reinforced vertically and horizontally with steel bars located within cells or kerfs in the units and with cells containing reinforcing bars filled solidly with grout.

##### 1.2.5. Additional Definitions:

- 1.2.5.1. *Back-Up*: That part of masonry walls which is behind the exterior facing.
- 1.2.5.2. *Bed Joint*: The horizontal layer of mortar on which a masonry unit is laid.
- 1.2.5.3. *Head Joint*: The vertical mortar joint between ends of masonry units. Sometimes
- 1.2.5.4. *Kerf*: A cut or notch made with a saw, or with a cutter, part way through a portion of a unit.
- 1.2.5.5. *Low Lift Grouting*: The technique of grouting masonry in 0.20 to 1.8 meters lifts as the wall is being laid.
- 1.2.5.6. *Reinforced Masonry*: Masonry in which reinforcement is embedded in such a manner that the components act together to resist lateral forces.

#### 1.3. PERFORMANCE REQUIREMENTS

1.3.1. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry by testing masonry prisms according to ASTM C 1314.

- 1.3.1.1. For Concrete Unit Masonry: f'm = 1500 psi (10.3 MPa)
- 1.3.1.2. For Load Bearing Concrete Unit Masonry: f'm = 2000 psi (13.8 MPa)

##### 1.3.2. Samples for Verification:

For the following:

- 1.3.2.1. Full-size units for each different masonry unit required, showing the full range of exposed dimensions to be expected in the completed construction.



1.3.2.2. Accessories embedded in the masonry.

## 1.4. DELIVERY, STORAGE & HANDLING

1.4.1. Handle, store and protect masonry units to avoid chipping, breakage or contact with the soil. Keep steel reinforcing bars free of rust and loose scale. Reject rusted steel reinforcing bars. Deliver cement and lime in unbroken bags, barrels, or other sealed containers. Keep cementitious materials dry. Store and handle cement to prevent the inclusion of foreign materials. Store aggregates in a manner to avoid contamination or segregation. Plainly mark and label containers with the manufacturer's names and brands.

## PART 2 PRODUCTS

### 2.1. Masonry Units

2.1.1. **Masonry unit:** Subject to compliance with requirements and as approved by the Architect.

2.1.2. **Concrete Masonry Units (CHB):**

2.1.2.1. *Aggregates:* ASTM C33

2.1.2.2. *Linear Drying Shrinkage:* Not to exceed 0.065 percent when tested in accordance with ASTM 426.

2.1.2.3. *Kinds and Shapes:* In addition to the requirements specified, concrete masonry units of the various kinds shall conform to PNS 16, Type II for 150 mm thick ( $f'm = 7$  MPa / 5 MPa) and for 100 mm thick ( $f'm = 2.5$  MPa). Include closer, jamb, lintel and bond beam units and special shapes and sizes to complete the work as indicated.

### 2.2. Centering Device

2.2.1. Provide centering clips that prevent displacement of reinforcing bars during the course of construction.

### 2.3. Deformed Reinforcing Bars

ASTM A615, Grade 275 (40,000 psi).

### 2.4. Materials for Mortar and Grout

#### 2.4.1. Admixtures

2.4.1.1. *Admixtures:* May be used in mortar or grout provided that the admixture does not adversely affect bond or compressive strength of mortar or grout.

2.4.1.2. *Prohibited Ingredients:* Do not use air entraining compounds, calcium chloride salts or other chemicals that will adversely affect metals or the coatings of metals embedded in the mortar or grout.

#### 2.4.2. Aggregate for Mortar

ASTM C 144, except that not less than 3 percent nor more than 15 percent shall pass the No. 100 sieve. Aggregate used in mortar for joints 6 mm or less shall have 100 percent passing the No. 8 sieve with 10 percent being retained on the No. 16 sieve.

#### 2.4.3. Aggregate for Grout:

2.4.3.1. *Fine Aggregate:* ASTM C 404, Size No. 2 or ASTM C 144.

2.4.3.2. *Pea Gravel:* ASTM C 404, except that 100 percent shall pass the 9 mm screen and not more than 5 percent shall pass the No. 8 sieve.





2.4.3.3. *Coarse Aggregate*: ASTM C 404, size No. 8.

2.4.4. **Portland Cement** : ASTM C150, Type I.

#### 2.4.5. **Lime Putty**

Slaked according to the manufacturer's instructions.

2.4.5.1. *Hydrated Lime*: SAO 181.

2.4.5.2. *Pulverized Quicklime*: SAO 181 except 100 percent shall pass the No. 20 sieve and 90 percent shall pass the No. 50 sieve.

2.4.5.3. *Lime Paste*: Lime paste shall be made with pulverized quicklime or hydrated lime. Hydrated lime processed by the steam method shall be allowed to soak not less than 24 hours. Quicklime and other hydrated lime shall be allowed to soak not less than 72 hours. In lieu of hydrated lime paste for use in mortar, the hydrated lime may be added in the dry form.

2.4.6. **Water**: Potable.

### 2.5. Mortar Mixes

#### 2.5.1. **Proportions**:

2.5.1.1. Type M in accordance with the proportion specifications of ASTM C 270. The mortar shall have a flow, after 11 minutes, of 75 percent or more when tested for water retention in accordance with ASTM C 91 except mortar shall be mixed to an initial flow of 105 to 115 percent.

### 2.6. Grout Mixtures

#### 2.6.1. **Proportions**:

Mix in laboratory established proportions to in a compressive strength at 28 days of not less than 17.20 MPa (2500 psi) when tested in accordance with ASTM C 91 for fine aggregate and ASTM C 39 for grout containing coarse aggregate. Grout shall be classified as fine and low lift types as specified below.

2.6.2. *Fine Grout*: Portland cement, fine aggregate, and sufficient water to obtain a pouring consistency without segregation of the constituents. Slump shall be approximately 125 mm.

2.6.3. *Low Lift Grout*: Portland cement, lime paste or hydrated lime, fine aggregate and coarse aggregate, and sufficient water to obtain a pouring consistency without segregation of the constituents. Slump between 200 and 250 mm.

### 2.7. Source Quality Control

2.7.1. Prior to delivery of masonry units to the site, select by random sampling nine individual whole units from the units proposed for use. Select units free from cracks or other structural defects. Test in accordance with PNS 16.

## **PART 3 EXECUTION**

### 3.1. Preparation

#### 3.1.1. **Examination**

3.1.1.1. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.



3.1.1.1.1. For the record, prepare a written report, endorsed by Installer, listing conditions detrimental to performance.

3.1.1.1.2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.1.1.2. Before installation, examine rough-in and built-in construction to verify actual locations of piping connections.

### 3.1.2. Protection

3.1.2.1. *Forms and Shores*: Where required, construct forms to the shapes, lines, and dimensions of the members indicated. Construct forms sufficiently rigid to prevent deflections which may result in cracking or other damage to supported masonry and sufficiently tight to prevent leakage of mortar and grout. Do not remove supporting forms or shores until the supported masonry has acquired sufficient strength to support its weight and construction loads to which it may be subjected. In no case shall supporting forms or shores be removed in less than 10 days. Wait at least 16 hours after grouting masonry walls after applying uniform loads and wait an additional 48 hours before applying concentrated loads.

3.1.2.2. *Wall Bracing*: Brace walls against wind and other forces during construction. Allow sufficient time between lifts to prevent cracking of face shells of hollow masonry units. If blowouts, misalignment, or cracking of face-shells should occur during construction, tear down and rebuild the wall at no additional cost to the DSWD.

### 3.1.3. Surface Preparation

3.1.3.1. Clean laitance, dust, dirt, oil, organic matter or foreign materials from concrete surface upon which reinforced masonry is to be placed. Use sandblasting, if necessary, to remove laitance from pores and expose to the aggregate.

## 3.2. Laying Masonry Units

### 3.2.1. Wet Masonry Units

Do not wet concrete masonry units. Do not lay units having a film of water on the surface.

### 3.2.2. Embedded Items

Build in wall plugs, accessories, flashings, pipe sleeves and other items required being built-in as the masonry works progresses. Fill cells receiving anchor bolts and cells of the first course below bearing plates with mortar or grout. Fill spaces around metal door frames and other built-in items with mortar. Point openings around flush-mounted electrical outlet boxes in wet locations, including the flush joint above the box with mortar. Do not embed aluminum items.

### 3.2.3. Bond Beams and Lintels

Install bond units, reinforced as indicated, filled with grout. Install open bottom type bond beam units over cells to be filled. Place wire mesh or small mesh metal lath under open bond beam units if used over cells not to be filled.

### 3.2.4. Unfinished Work

Step back-unfinished work for joining with new work. Do not use toothing without the written approval of the DSWD-BGMS. Remove loose mortar and thoroughly clean the exposed joints before laying new work.

### 3.2.5. Placing Units



Lay hollow masonry units so as to preserve the vertical continuity of cells filled with grout. The minimum clear horizontal dimensions of vertical cores shall be 50 mm by 75 mm. Masonry bond units at corners. Anchor intersections by reinforcing bars as indicated. Adjust each unit to its final position while mortar is still soft and plastic. If any unit is disturbed after mortar has stiffened, remove and relay in fresh mortar. Keep chases, raked out joints, and spaces to be grouted, free from mortar and other debris.

### 3.2.6. Bond Pattern

Lay masonry units in running bond.

### 3.2.7. Cutting and Fitting

Wherever possible, use full units of the proper size in lieu of cut units.

Use power masonry saws for cutting and fitting. Concrete-masonry units shall be wet cut. Make cut edges clean, true and sharp. Make openings carefully so that wall plates, cover plates or escutcheons required by the installation will completely conceal the openings and will be aligned at the bottom with the masonry joints. Cut webs of hollow masonry units to the minimum required for proper installation. Provide reinforced masonry lintels, above openings over 300 mm wide for pipes, ducts and cables trays unless steel sleeves are used.

### 3.2.8. Mortar Joints

Spread bed joints with mortar for the full thickness of the face shells. Where only cells containing reinforcement are to be grouted, spread cross webs around such cell with mortar to prevent leakage of grout. Butter head joints for full thickness of the face shell and place the units. Avoid fins of mortar that protrude into cells to be grouted.

### 3.2.9. Jointing

Tool joints when the mortar is thumbprint hard. Tool horizontal joints first. Brush joints to remove loose and excess mortar. Mortar joints shall be finished as follows:

3.2.9.1. *Flush Joints*: Flush cut joints in concealed masonry surfaces and joints above electrical outlet boxes in wet areas. Make flush cut joints by cutting off the mortar flush with the face of the wall.

3.2.9.2. *Tooled Joints*: Tool joints in exposed exterior and interior masonry surfaces slightly concave. Use a jointer of sufficient length to obtain straight and true mortar joints.

3.2.9.3. *Joint Width*: 9 mm wide.

## 3.3. Placing Reinforcing Steel

Prior to placing grout, clean, reinforcement of loose, flaky rust, scale, grease, mortar, grout, or other coating which might destroy or reduce its bond with the grout. Details of reinforcement shall be in conformance with ACI 315. Do not bend or straighten reinforcing in a manner injurious to the steel. Do not use bars with kinks or bends not shown on the drawings. Placement of reinforcement shall be inspected and approved prior to placing grout.

3.3.1. **Positioning Bars**: Position vertical bars accurately at the centerline of the wall. Maintain a minimum clearance between the bars and masonry units of 12 mm and between parallel bars of one diameter of the reinforcement. Hold vertical reinforcing in place using metal support, centering clips, spacers, ties or caging devices located near the ends of each bar and at intermediate intervals of not more than 192 diameters of the reinforcement.



3.3.2. **Splices:** Locate splices only as indicated. Stagger splices in adjacent bars at least 600 mm. Lap bars a minimum of 40 diameters of the reinforcement or 600 mm, whichever is greater. Welded or mechanical connections shall develop the full strength of the reinforcement.

### 3.4. Placing Grout

Use a hand bucket, concrete hopper or grout pump. Place grout in the final position within 1-½ hours after mixing. Where grouting is discontinued for more than one hour, stop the grout 25-mm below the top of a course to form a key at pour points. Place grout to completely fill the grout spaces without segregation of the aggregates.

#### 3.4.1. Low Lift Grout Method

Place grout as masonry is erected at a rate that will not cause displacement of the masonry due to hydrostatic pressure of the grout. If mortar has been allowed to set prior to grouting, remove fins protruding more than 12 mm into the grout space. Rod or puddle grout during placement using a long 25-mm by 50-mm wood stick or a mechanical vibrator.

### 3.5. Tolerance

Lay masonry plumb, true to line, with course level. Keep bond patterns plumb throughout.

### 3.6. Field Quantity Control

#### 3.6.1. Grout

3.6.1.1. DSWD/BGMS will engage a qualified independent testing agency to perform field quality-control testing indicated below.

3.6.1.1.1. Payment for these services will be made by Contractor.

3.6.1.1.2. Retesting of materials failing to meet specified requirements shall be done at contractor's expense.

3.6.1.2. *Testing Frequency:* Tests and Evaluations listed in this Article will be performed during construction for each 5000 sq. ft. (465 sq. m) of wall area or portion thereof. C. Mortar properties will be tested per ASTM C 780.

3.6.1.3. Grout will be sampled and tested for compressive strength per ASTM C 1019. Employ a qualified testing laboratory to proportion and test grout. Do not change laboratory established proportions or use materials with different physical or chemical characteristics in grout for the work unless additional evidence is furnished that the grout meets the specified requirements.

3.6.1.4. *Concrete Masonry Unit Tests:* For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

#### 3.6.2. Repairing, Pointing and Cleaning

3.6.2.1. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

3.6.2.2. *Pointing:* During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application.

3.6.2.3. *In-Progress Cleaning:* Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.



3.6.2.4. *Final Cleaning:* After mortar is thoroughly set and cured, clean exposed masonry as follows:

3.6.2.4.1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.

3.6.2.4.2. Test cleaning methods on sample wall panels; leave one-half of the panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.

3.6.2.4.3. Protect adjacent stone and non-masonry surfaces from contact with the cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking tape.

3.6.2.4.4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing the surfaces thoroughly with clear water.

3.6.2.4.5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

3.6.2.4.6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

3.6.2.4.7. After mortar joints have attained their initial set but prior to hardening, completely remove mortar and grout daubs or splashing from exposed masonry surfaces. Before completion of the work, make out defects in joints in exposed masonry surfaces filled with mortar and tool to match existing joints. Immediately after grout work is completed remove scum and stains which have percolated through the masonry using a high-pressure steam of water and a stiff fiber bristle brush. Do not use metal tools or metal brushes for cleaning. Dry brush exposed concrete masonry unit surfaces at the end of work each day.

### 3.6.3. **Masonry Waste Disposal**

3.6.4. *Recycling:* Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

3.6.5. *Disposal as Fill Material:* Dispose of clean masonry waste, including broken masonry units, waste mortar, and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.

3.6.6. *Excess Masonry Waste:* Remove excess, clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of the DSWD's property.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 5 - "METALS"

### Section 4. Handrails and Railings

30 AUGUST 2022

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ArGNR/EngrCJCT/REV. 00

Revision	Date	Description



## HANDRAILS AND RAILINGS

### PART 1 GENERAL

#### 1.1. SUMMARY

1.1.1. Section includes:

1.1.1.1. Wrought Iron handrails, railings, balusters, and fittings.

1.1.1.2. Steel tube handrails, railings, balusters, and fittings.

1.1.2. Related sections:

1.1.2.1. "Specification for Structural Steelwork" by Structural Engineer for steel fabrications used as primary Project structure.

1.1.2.2. "Metal Fabrications" for fasteners, fixings, plates, brackets, and miscellaneous other pieces required to complete work of this Section.

1.1.2.3. "Gypsum Board Assemblies" for placement of blocking and backing for work of this Section.

1.1.2.4. "Interior Painting", "Exterior Painting" and "High Performance Coatings": for applied finishes on metal handrails and railings.

#### 1.2. REFERENCES

1.2.1. Local Rules and Regulations: Current Editions.

1.2.2. IBC - International Building Code;

1.2.3. National Building Code of the Philippines

1.2.4. Batas Pambansa Blg. 344

#### 1.3. PERFORMANCE REQUIREMENTS

1.3.1. Conform to ANSI A117.1., IBC Section 1009.11, IBC Section 1012, and other applicable codes, rules and regulations.

1.3.2. Design railing assembly, wall rails, and attachments to resist loads as required by IBC Section 1607.7, and loads as required by Philippine Structural Code for "highly crowded areas", without damage or permanent set. , and at minimum as follows:

1.3.2.1. *Uniform load*: 0.73 kN in any direction at the top;

1.3.2.2. *Concentrated load*: 0.89 kN in any direction at any point along the top

1.3.2.3. *Uniform load*: 3.00 kN/m applied 1100 mm above finish floor.

1.3.3. Test in accordance with ASTM E 935 and also conduct tests required by the Philippine Structural Code and authorities having jurisdiction.

1.3.4. **Thermal Movements**: Provide exterior railings that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.



1.3.2.4. *Temperature Change* (Range): 67 deg C, ambient; 100 deg C, material surfaces.  
D.E. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

## 1.4. SUBMITTALS

1.4.1. Submit in accordance with Submittal Procedures issued by Project Architect.

1.4.2. **Shop Drawings:** Indicate plans, elevations, sections, profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

1.4.2.1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4.3. **Test Reports:** Submit substantiating engineering data, test results of previous tests by independent laboratory, and other supportive data sufficient to determine that performance criteria are met.

1.4.4. **Qualifications:** For Structural Engineer

## 1.5. QUALITY ASSURANCE

1.5.1. Design structural components under direct supervision of a Professional Structural Engineer or Registered Civil Engineer experienced in design of this Work and licensed in the Philippines.

## 1.6. PROJECT CONDITIONS

1.6.1. **Field Measurements:** Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.6.1.1. *Established Dimensions:* Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabrication railings without field measurements. Coordinate wall and other contiguous construction to ensure that actual dimensions correspond to established dimensions.

1.6.1.2. Provide allowance for trimming and fitting at site.

## 1.7. COORDINATION AND SCHEDULING

1.7.1. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.7.2. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

## PART 2 PRODUCTS

### 2.1. STEEL RAILING SYSTEM

2.1.1. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

2.1.2. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.

2.1.3. Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn).





2.1.4. Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.1.5. Castings: Either gray or malleable iron, unless otherwise indicated.

2.1.5.1. Gray Iron: ASTM A 48/A 48M, Class 30, unless another class is indicated or required by structural loads.

2.1.5.2. Malleable Iron: ASTM A 47/A 47M.

2.1.6. Mounting: Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated

## 2.2. FASTENERS

2.2.1. General: Provide the following:

2.2.1.1. Steel Railings: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.

2.2.2. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

2.2.3. Fasteners for Interconnecting Railing Components:

2.2.3.1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.

2.2.3.2. Provide flush countersunk Phillips flat-head machine screws for exposed fasteners, unless otherwise indicated. G.D. Anchors: Provide cast-in-place, chemical, or torque-controlled expansion anchors, fabricated from corrosion resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

## 2.3. FABRICATION

2.3.1. **General:** Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

2.3.2. Fit and shop assemble components in largest practical sizes for delivery to site. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

2.3.3. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

2.3.4. **Connections:** Fabricate railings with welded connections, unless otherwise indicated.

2.3.5. **Welded Connections:** Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

2.3.5.1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2.3.5.2. Obtain fusion without undercut or overlap.

2.3.5.3. Remove flux immediately.



2.3.5.4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

2.3.6. Form changes in direction as follows:

2.3.5.5. By radius bends of radius indicated or by inserting prefabricated elbow fittings of radius indicated.

2.3.5.6. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

2.3.7. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch (6 mm) or less.

2.3.8. Provide anchors and plates required for connecting railings to structure.

2.3.9. **Exposed Mechanical Fastenings:** Provide flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

2.3.10. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.3.11. **Brackets, Flanges, Fittings, and Anchors:** Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.

2.3.11.1. At brackets and fittings fastened to plaster or gypsum board partitions, provide fillers made from crush-resistant material, or other means to transfer wall loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.

2.3.12. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

2.3.13. **Exterior Components:** Fabricate connections that will be exposed to weather in a manner to exclude water.

2.3.14. **Interior Components:** Close exposed ends of railing members with prefabricated end fittings. Continuously seal joined pieces by continuous welds.

2.3.15. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

## 2.4. FINISHES, GENERAL

2.4.1. Comply with NAAMA's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.4.2. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.4.3. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

## 2.5. STEEL AND IRON FINISHES



2.5.1. **Shop Primer for Galvanized Steel:** Zinc-dust, zinc-oxide primer formulated for priming zinc-coated steel and for compatibility with finish paint systems indicated, and complying with SSPC-Paint 5.

2.5.2. **Galvanizing Repair Paint:** High-zinc-dust-content paint for re-galvanizing welds in steel, complying with SSPC-Paint 20.

2.5.3. Hot-dip galvanized steel and iron railings, including hardware, after fabrication.

2.5.3.1. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.

2.5.3.1. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.

2.5.4. Fill vent and drain holes that will be exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

2.5.5. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

2.5.6. **Preparation for Shop Priming:** After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic-phosphate process.

2.5.7. **Shop Priming:** Apply shop primer to prepared surfaces of railings, unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.

## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

3.1.1. Verify that field conditions are acceptable and are ready to receive work.

3.1.2. Alert the Architect of any discrepancies, prior to commence the Work this section.

3.1.3. Coordinate the Work of this Section with applicable trades.

### **3.2. PREPARATION**

3.2.1. Clean and strip primed steel items to bare metal where site welding is required.

3.2.2. Supply items required to be cast into concrete or embedded in masonry with setting templates, for installation as work of other sections.

### **3.3. INSTALLATION**

3.3.1. Fit exposed connections together to form tight, hairline joints. Install in accordance with manufacturer's instructions.

3.3.2. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

3.3.2.1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.

3.3.3. Install components true to line within specified tolerances, accurately fitted, free from distortion or defects.

3.3.4. Adjust railings before anchoring to ensure matching alignment at abutting joints. Anchor railings securely to structure.



3.3.5. Field weld anchors as indicated on drawings. Touch-up welds with primer. Grind welds smooth.

3.3.6. **Welded Connections:** Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in Part 2 "Fabrication" Article whether welding is performed in the shop or in the field.

3.3.7. **Expansion Joints:** Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 50 mm beyond joint on either side, fasten internal sleeve securely to 1 side, and locate joint within 150 mm of post.

### 3.4. ERECTION INSTALLATION TOLERANCES

3.4.1. **Maximum Variation from Plumb:** 6mm per floor level, non-cumulative.

3.4.1.1. Set posts plumb within a tolerance of 2 mm in 1m.

3.4.2. **Maximum Offset from True Alignment:** 6mm cumulative.

3.4.1.2. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 5 mm in 3 m.

3.4.3. **Maximum Horizontal Out-of-Position:** 6mm.

### 3.5. CLEANING AND PROTECTION

3.5.1. **Galvanized Surfaces:** Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.5.2. Protect finishes of railings from damage during construction period with temporary protective coverings approved by the railing manufacturer. Remove protective coverings at time of Substantial Completion.

3.5.3. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish the entire unit, or provide new units.

\*\*\* END OF SECTION \*\*\*



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 1. Cementitious Waterproofing

30 JUNE 2023

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ArJMM/REV. 00

Revision	Date	Description



## CEMENTITIOUS WATERPROOFING

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUMMARY

1.2.1. This Section includes the following:

1.2.1.1. Polymer-modified cementitious waterproofing (two coat application; minimum 2mm wet film thickness) with all ancillary materials and components required for a complete watertight system for water tanks to take cement sand rendering / tiling finishes, and in other cases as indicated in drawings.

1.2.1.2. Polymer-modified cementitious waterproofing against negative water pressure (two coat application; minimum 1mm wet thick for each coat) with all ancillary materials and components required for a complete waterproofing system applied as indicated in drawings.

#### 1.3. PERFORMANCE REQUIREMENTS

1.3.1. **For potable water tanks:** Any part or component of the waterproofing system should be non-toxic; and must be complied with the requirements of British Water Research Council in relation to "Suitable Use in Contact with Potable Water"; or other equivalent standard of other national water research institutes.

1.3.2. **For resistance against negative water pressure:** The waterproofing shall be able to achieve the following minimum performance requirements according to the specified standard or equivalent recognized standards:

1.3.2.1. Resistance to negative water pressure: 3 bar minimum (DIN 1048);

1.3.2.2. Resistance to positive water pressure: 7 bar minimum (DIN 1048);

1.3.2.3. Abrasion resistance: Wear Index 1 or equivalent to 40MPa Concrete (ASTM D4060).

#### 1.4. SUBMITTALS

1.4.1. **Product data:** Manufacturer's detailed product data, method of application, recommendations and limitations of use, include manufacturer's written instructions for evaluating, preparing, and treating substrate, technical data, and tested physical and performance properties of waterproofing.

1.4.2. **Shop drawings:**

1.4.2.1. Indicate details of penetrations, abutments curb and wall transitions, internal and exterior corners, terminations, water stops, drains, outlets and sub- drainage system including tie-in with sub-drainage pipework, at construction and expansion joints and at interface with other materials.

1.4.2.2. Include drawings, elevations and details where applicable.



1.4.3. **Samples:** Contractor shall submit adequate samples for inspection and review.

## 1.5. QUALITY ASSURANCE

1.5.1. **Source Limitations:** Obtain waterproofing materials through one source from a single manufacturer. Provide accessory materials that are approved by the membrane manufacturer.

### 1.5.2. **Manufacturer Qualifications:**

1.5.2.1. Specializing in manufacturing of specified systems and high performance, commercial grade waterproofing systems and material for at least 10 years.

1.5.2.2. Waterproofing manufacturers shall be capable of providing field service, if necessary, during construction; approving acceptable applicator and application methods.

## 1.6. DELIVERY, STORAGE, AND HANDLING

1.6.1. All materials shall be delivered in manufacturer's containers, dry, undamaged and unopened. All clearly labelled with the manufacturer's name, product identification, expiration date, etc.

1.6.2. Store materials strictly in accord with manufacturer's printed recommendations.

1.6.3. Strictly follow special precautions recommended by manufacturers where flammable and hazardous materials are involved or released. Hazardous waste materials shall be legally transported and disposed of in strict conformance to local regulations.

## 1.7. PROJECT CONDITIONS

1.7.1. Do not apply waterproofing systems until substrates are in conditions that are recommended by the manufacturer.

1.7.2. Apply waterproofing system only when air and surface temperatures are between 5 deg. Celsius and 38 deg. Celsius.

## **PART 2 PRODUCTS**

### 2.1. SUPPLIER

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

### 2.2. CEMENTITIOUS WATERPROOFING SYSTEM

2.2.1. General: The waterproofing system shall be a Polymer Modified Cementitious Waterproofing system including all ancillary materials and components required for a complete watertight system in strict accord with manufacturer's recommendations.

### 2.3. CEMENTITIOUS WATERPROOFING SYSTEM AGAINST NEGATIVE WATER PRESSURE

2.3.1. General: The waterproofing system shall be a two-component Polymer Modified Cementitious Waterproofing system including all ancillary material and components required for a complete watertight system in strict accord with manufacturer's recommendations.

## **PART 3 EXECUTION**

### 3.1. EXAMINATION

3.1.1. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements and other conditions affecting performance.



3.1.2. Verify that concrete has cured and aged for a minimum time period recommended by waterproofing manufacturers.

3.1.3. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.2. SURFACE PREPARATION**

3.2.1. Clean and prepare substrate according to manufacturer's written recommendations. Provide clean, dust-free, and dry substrate for waterproofing application.

3.2.2. Mask off adjoining surfaces not receiving waterproofing to prevent spillage affecting other construction.

3.2.3. Close off deck drains and other deck penetrations to prevent spillage and migration of waterproofing fluids.

3.2.4. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.

3.2.5. Remove fins, ridges, and other projections and fill honeycomb, aggregate pockets, and other voids.

### **3.3. APPLICATION**

3.3.1. Installation sequencing, timing and procedures shall be in strict accord with manufacturer's instructions and recommendations.

3.3.2. Perform application in strict accordance with manufacturer's written specification or endorsed method statement.

### **3.6. PROTECTION**

3.6.1. Ensure that waterproofing is protected from traffic, weather and damage during construction. Repair or replace all damaged waterproofing before covering with other finish materials.

3.6.2. Protect adjacent surfaces and materials from damage and soiling by the work of this Section.

**\*\*\* END OF SECTION \*\*\***





# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 2. Cold Liquid Applied Elastomeric Waterproofing

30 JUNE 2023

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ArJMM/ REV. 00

Revision	Date	Description



## COLD LIQUID APPLIED ELASTOMERIC WATERPROOFING

### PART 1 GENERAL

#### 1.1. SUMMARY

1.1.1. Section includes:

- 1.1.1.1. [07:WP1] Elastomeric urethane membrane waterproofing systems.
- 1.1.1.2. [07:WP2] Elastomeric synthetic resin based waterproofing systems
- 1.1.1.3. [07:WP3] Elastomeric rubber polymer waterproofing systems
- 1.1.1.4. [07:WP4] Elastomeric urethane membrane waterproofing exposed systems

1.1.2. Related Sections include the following:

- 1.1.2.1. "Concrete Finishing" for finishing requirements of concrete substrates, and hardener sealers applied to uncured concrete.
- 1.1.2.2. "Cementitious Waterproofing" for alternative waterproofing for immersion that may be substituted for waterproofing for immersion specified in this Section.
- 1.1.2.3. "Joint Sealers" for sealants used in conjunction with Work of this Section.
- 1.1.2.4. "Concrete and Masonry Coatings" for water repellent sealers applied to cured concrete and masonry.

#### 1.2. REFERENCES

- 1.2.1. ASTM C836 - Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course.
- 1.2.2. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers. Tensile strength and elongation tests.
- 1.2.3. ASTM E96 - Standard Test Method for Water Vapour Transmission of Materials. Method BW.
- 1.2.4. ASTM D2240 - Shore A hardness testing
- 1.2.5. ASTM G 26 - weather-ometer testing
- 1.2.6. American Concrete Institute ACI Publication 515. IR - Guide to The Use of Waterproofing, Damp proofing, Protective and Decorative Barrier Systems for Concrete, 1985.
- 1.2.7. National Roofing Contractors' Association - NRCA Roofing And Waterproofing Manual, 4<sup>th</sup> Edition, 1996.
- 1.2.8. Local rules and regulations: current editions
- 1.2.9. National Building Code 2004

#### 1.3. SUBMITTALS

1.3.1. Shop drawings:

- 1.3.1.1. Indicate details of penetrations, abutments curb and wall transitions, internal and exterior corners, terminations, water stops, drains, outlets and sub-drainage system including tie-in with sub-drainage pipe work, at construction and expansion joints and at interface with other materials.



1.3.1.2. Include drawings, elevations and details where applicable.

1.3.2. Samples: 300 mm x 300 mm (12 in. square) of each cured membrane system specified herein, showing build-up, thickness, colour and texture specified.

1.3.2.1. Subsequently, and before any installation work commences on the project site, the applicant shall provide the DSWD with one reproducible and two prints of the approved shop drawings incorporating the modifications made.

#### 1.4. QUALITY ASSURANCE

1.4.1. **Source Limitations:** Obtain waterproofing materials through one source from a single manufacturer. Provide accessory materials that are approved by the membrane manufacturer.

##### 1.4.2. **Manufacturer Qualifications:**

1.4.2.1. Specializing in manufacturing of specified systems and high performance, commercial grade waterproofing systems and material for at least 10 years.

1.4.2.2. Waterproofing manufacturers shall be capable of providing field service, if necessary, during construction; approving acceptable applicator and application methods.

1.4.3. **Mock-up:** Prior to Pre-Installation Conference, prepare a mock-up of the work of this Section at a location on the job site where approved by the Architect.

1.4.3.1. Make a mock-up for each of the various types of installation (Minimum size: 6m x 6m).

1.4.3.2. The work is to be carried out under the direct supervision of the Contractor and the waterproofing manufacturer's technical representative.

1.4.3.3. Show all aspects of the work of this Section to the quality specified.

1.4.3.4. Make necessary adjustments or re-installation in the mock-up(s) to satisfy requirements of this section and secure the Architect's approval.

1.4.3.5. The mock-up(s), when approved by the Architect, will be used as a datum point for comparison with the remainder of the work of this Section for the purpose of acceptance or rejection.

1.4.3.6. Upon approval of the Architect, the mock-up(s) may become an actual part of the installation required for this Work.

##### 1.4.4. **Maintenance manual:**

1.4.4.1. Upon completion of work in this section, submit one maintenance manual, identified with project name, location and date; type of system applied and surface to which system was applied, and shop drawings where necessary to fully describe the applied system.

1.4.4.2. Include recommendations for periodic inspections, care and maintenance.

1.4.4.3. Identify common causes of damage with instructions for temporary patching until permanent repairs can be made.

1.4.5. **Reference Standard:** For Work of this Section used as primary waterproofing on exterior horizontal applications, comply with applicable recommendations in the NRCA Roofing and Waterproofing Manual



## 1.5. PROJECT CONDITIONS

### 1.5.1. Environmental requirements:

1.5.1.1. Do not apply waterproofing systems until substrates are in a condition that is recommended by the manufacturer.

1.5.1.2. Apply waterproofing system only when air and surface temperatures are between 5 deg. C and 38 deg. C.

## **PART 2 PRODUCTS**

### 2.1. WATERPROOFING SYSTEMS – GENERAL

2.1.1. **General:** All waterproofing materials shall be from the same manufacturer, compatible with each other, and compatible with adhesive mortar and grout for tile and stone placed over waterproofing systems.

### 2.2. ELASTOMERIC URETHANE MEMBRANE SYSTEM

2.2.1. **Available Products:** Subject to compliance with requirements products that may be incorporated into the Work.

2.2.2. All ancillary materials and components required for a complete water-tight system in strict accord with manufacturer's instructions including, but not limited to:

2.2.2.1. Crack and joint treatment systems;

2.2.2.2. Expansion/Movement Joint Treatment:

2.2.2.3. Cold Joint treatment

2.2.2.4. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing;

2.2.2.5. Corner angle fillets and water stops where necessary recommended by waterproofing manufacturer;

2.2.2.6. Protection boards to vertical surfaces; board: As recommended by waterproofing membrane manufacturer:

2.2.2.7. Services and entry penetration accessories.

### 2.3. ELASTOMERIC SYNTHETIC RESIN BASED SYSTEMS

#### 2.3.1. **Waterproofing Membrane:**

2.3.1.1. Cold, liquid applied elastomeric solvent-free synthetic resin based waterproofing system suitable for direct application of adhesive mortar.

2.3.1.2. Acceptable products, subject to compliance with requirements, include:

2.3.2. All ancillary materials and components required for a complete, compatible water-tight system, including but not limited to:

2.3.2.1. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing

2.3.2.2. Joint treatment, corner angle fillets, and wall to wall junctions:

2.3.2.3. Services and entry penetration, and floor drain accessories.



## 2.4. WATERPROOFING FOR IMMERSION

### 2.4.1. Waterproofing Membrane:

2.4.1.1. Cold, liquid applied elastomeric solvent-free, load-bearing, self-curing liquid rubber polymer waterproofing system suitable for cementitious substrates and direct application of tile and stone using adhesive mortar.

2.4.2. All ancillary materials and components required for a complete, compatible water-tight system, including but not limited to:

2.4.2.1. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing

2.4.2.2. Joint treatment, corner angle fillets, and wall to wall junctions:

2.4.2.3. Services and entry penetration, and floor drain accessories.

## 2.5. ELASTOMERIC URETHANE MEMBRANE EXPOSED SYSTEM

2.5.1. **Available Products:** Subject to compliance with requirements products that may be incorporated into the Work.

2.5.2. All ancillary materials and components required for a complete water-tight system in strict accord with manufacturer's instructions including, but not limited to:

2.5.2.1. Crack and joint treatment systems;

2.5.2.2. Primers or surface conditioners as required by the manufacturer to prepare substrates to a condition fit for the application of liquid applied waterproofing;

2.5.2.3. Corner angle fillets and water stops where recommended by waterproofing manufacturer;

2.5.2.4. Services and entry penetration accessories.

### 2.5.3. Performance Requirements:

2.5.3.1. Description: Composite liquid polyurethane waterproofing system designed for use as waterproofing and as an exposed wearing surface on plaza decks, pedestrian walkways, and balconies.

a. Cures to form a seamless, monolithic, waterproof, abrasion resistant surface

b. Adheres to smooth concrete, to well-anchored and primed wood and to primed metal surfaces.

## 2.6. PRODUCT HANDLING

2.6.1. **Procedures:** All material shall be delivered in manufacturers' containers, dry, undamaged and unopened. All clearly labeled with the manufacturer's name, product identification, expiration date, and lot numbers intact.

2.6.1.1. Identify each container with manufacturer's name, brand name, material type, stock number, color, and application instructions.

2.6.2. Store materials strictly in accord with manufacturer's printed recommendations, copies of which will be furnished to DSWD/BGMS.

2.6.3. Special precautions recommended by the manufacturer shall be strictly followed where flammable and hazardous materials are involved or released. Hazardous waste materials shall be legally transported and disposed of in strict conformance to local regulations.



## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

- 3.1.1. Examine surfaces for conditions that will adversely affect execution, permanence, and quality of work.
- 3.1.2. Before commencing any waterproofing works, the Contractor must demonstrate on site that all materials are fully compatible with each other and with the substrates.
- 3.1.3. Examine substrates for contaminants such as water, curing compounds, hardeners, bond breakers, etc. No work shall be undertaken when the substrate surface moisture exceeds the permissible maximum, as present on site.
- 3.1.4. Verify that concrete substrates are dry and curing methods (or compounds) are compatible with waterproof system materials. Perform moisture tests as directed by waterproof system manufacturers to ensure that concrete substrates are sufficiently dry for application of elastomeric coating systems.
- 3.1.5. Do not proceed with work until unsatisfactory conditions have been corrected and examined by the manufacturer's representative.

### **3.2. PREPARATION**

- 3.2.1. Check concrete surfaces and confirm that surfaces to receive waterproofing are cured (not less than 14 days) and are dry. Concrete surfaces shall be a floated finish, free from cavities and projecting nibs, shuttering faces shall be of an equivalent standard, damaged concrete shall be made good with waterproof cement sand mortar.
- 3.2.2. Check masonry surfaces and confirm that surfaces to receive waterproofing have smooth, flush-pointed joints or cement parge coats over the entire surface. Rough brick or open texture blocks shall be made smooth by application of a waterproof sand cement render.
- 3.2.3. Prepare cracks, joints (expansion, control and construction), penetrations (drains, pipe, and columns/stanchions), wall junctures (base) and similar details in accord with manufacturer's recommendations. Remove ridges and fins.
- 3.2.4. Remove from substrate surface all contaminants which would affect bond by sandblasting, mechanical grinding, abrading, or high pressure water blasting
- 3.2.5. High-pressure air, in accord with manufacturer's recommendations. Completely remove dust, loose particles, and debris.

### **3.3. APPLICATION**

- 3.3.1. All installation sequencing, timing and procedures to be in strict accord with manufacturer's instructions and carried out under supervision of the manufacturer's technical representative.
- 3.3.2. Install sealants or apply "detail", "face" or "stripe" coating in accord with manufacturer's recommendations.
- 3.3.4. Apply primer coating in accord with manufacturer's recommendations. Conform to manufacturer's recommendations of "recoat time" for applying base coat; re-prime if "recoat time" is exceeded.
- 3.3.5. Perform application in strict accord with manufacturer's written specifications.
- 3.3.6. Apply waterproofing base coat(s) at the rate or wet film thickness required to achieve the minimum or average dry film thickness recommended by the manufacturer. Allow to cure as



recommended by the manufacturer. Where multiple base coats are indicated, apply and cure separately.

3.3.7. Fillet (at intersections of vertical and horizontal surfaces):

3.3.7.1. At all wall to floor junctions, form 25mm angle fillet.

3.3.7.2. A 25 x 25mm chamfer should be provided to all external angles / corners. All in accord with manufacturer's recommendations.

3.3.8. Protection course to vertical surfaces: Apply protection boards over waterproofing surfaces using proprietary adhesives or adhesive tapes in accord with manufacturer's recommendations.

### 3.4. FIELD QUALITY CONTROL

3.4.1. **Visual inspection:** Visually inspect waterproofing system installation thoroughly in presence of the manufacturer's representative and repair any defects as recommended by the manufacturer.

3.4.2. **Testing of Horizontal Installations:**

3.4.2.1. After allowing waterproofing system installation to completely cure and set, flood test horizontal installations with a minimum of 50 mm (2 in.) of water for at least 48 hours. Examine for, identify, and repair any leaks, then retest.

### 3.5. PROTECTION

3.5.1. Ensure that all waterproofing is protected from traffic, weather and damage during construction. Repair or replace all damaged waterproofing before covering with other finish materials.

3.5.2. Protect all insulation from damage from wetting, loading or abuse until they are under protective covering material or finish.

3.5.3. Protect adjacent surfaces and materials from damage and soiling by the work of this Section.

### 3.6. CLEANING

3.6.1. Remove all debris after completion of the work of this section. Store left over materials as agreed by DSWD/BGMS.

2.6.2. Clean adjacent surfaces and materials soiled by any work of this section.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 3. Fire Stopping Sealant

30 JUNE 2023

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Revision	Date	Description





## FIRESTOPPING

### **PART 1 GENERAL**

#### **1.1. DESCRIPTION**

1.1.1. Provide UL or equivalent approved firestopping system for the closures of openings in walls, floors, and roof decks against penetration of flame, heat, and smoke or gases in fire resistant rated construction.

1.1.2. Provide UL or equivalent approved firestopping system for the closure of openings in walls against penetration of gases or smoke in smoke partitions.

#### **1.2. REFERENCES**

1.2.1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials

1.2.2. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials

1.2.3. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems

1.2.4. UL 1479 - Fire Tests of Through-Penetration Firestops

1.2.5. FIRE CODE OF THE PHILIPPINES

1.2.6. INTERNATIONAL BUILDING CODE

1.2.7. National Building Code of Philippines

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Deliver firestopping materials to the job site in factory sealed, unopened containers bearing manufacturer's name, brand, product designation, batch number and packaging date.

1.3.2. Store in unopened containers. Follow manufacturer's recommendations for storage temperatures and shelf life.

1.3.3. Follow manufacturer's recommendations for handling products containing toxic materials. Use recommended solvents and cleaning agents for cleaning tools, equipment and skin.

#### **1.4. QUALITY ASSURANCE**

1.4.1. FM, UL, or WH or other approved laboratory tested products will be acceptable. Firestopping systems shall be the products of one manufacturer Coordinate the work of the trades toward achieving this end.

#### **1.5. PROJECT CONDITIONS**

##### **1.5.1. Environmental Requirements:**

1.5.1.1. Furnish adequate ventilation if using solvent.

1.5.1.2. Furnish forced air ventilation during installation if required by the manufacturer.

1.5.1.3. Keep flammable materials away from sparks or flame.

1.5.1.4. Provide masking and drop cloths to prevent contamination of adjacent surfaces by firestopping materials.



1.5.1.5. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.

1.5.2. **Existing Conditions:** Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding. Proceed with installation only after penetrations of substrates have been completed and supporting brackets installed.

## **PART 2 PRODUCTS**

### **2.1. FIRESTOP SYSTEMS**

2.1.1. Provide either factory built (Firestop Devices) or field erected (through- Penetration Firestop Systems) to form a specific building system maintaining required integrity of the fire barrier and stop the passage of gases or smoke. Firestop systems to accommodate building movements without impairing their integrity.

2.1.2. Firestop sealants used for firestopping or smoke sealing to have the following properties:

2.1.2.1. Contain no flammable or toxic solvents.

2.1.2.2. Release no dangerous or flammable outgassing during the drying or curing of products.

2.1.2.3. Water-resistant after drying or curing and unaffected by high humidity, condensation or transient water exposure.

2.1.2.4. When installed in exposed areas, capable of being sanded and finished with similar surface treatments as used on the surrounding wall or floor surface.

2.1.3. Classified for use with the particular type of penetrating material used.

2.1.3.1. Penetrations containing loose electrical cables, computer data cables, and communications cables protected using firestopping systems that allow unrestricted cable changes without damage to the seal.

2.1.4. FM, UL, or WH rated or tested by an approved laboratory in accordance with local standards.

2.1.5. Materials to be nontoxic and noncarcinogen at all stages of application or during fire conditions and to not contain hazardous chemicals. Provide firestop material that is free from Ethylene Glycol, PCB, MEK, and asbestos.

2.1.6. For firestopping exposed to view, traffic, moisture, and physical damage, provide products that do not deteriorate when exposed to these conditions.

2.1.6.1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.

2.1.6.2. For floor penetrations with annular spaces exceeding 101 mm (4 in.) or more in width and exposed to possible loading and traffic, provide firestop systems capable of supporting the floor loads involved either by installing floor plates or by other means acceptable to the firestop manufacturer.

2.1.6.3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.



## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

3.1.1. Examine substrates and conditions with an installer present for compliance with requirements for opening configuration, penetrating items, substrates, and other conditions affecting performance of firestopping. Do not proceed with installation until unsatisfactory conditions have been corrected.

### **3.2. CONDITION OF SURFACES**

3.2.1. Inspect surfaces to receive firestopping materials and report any defects to Project Manager. Do not start work until defects have been corrected. Starting work implies acceptance of surfaces as satisfactory.

3.2.2. Unless otherwise permitted by manufacturer, do not apply firestopping materials to polycarbonates; materials that bleed oils, plasticizers or solvents; organo-metallic compounds; silicone rubber containing organo-tin compound; sulfur, polysulfides, polysulfides and other sulfur containing materials; amines, urethanes and amine-containing materials; and unsaturated hydrocarbon plasticizers.

3.2.3. Do not apply materials in confined spaces where material is not exposed to atmospheric moisture.

### **3.3. PREPARATION**

3.3.1. Remove dirt, grease, oil, laitance and form-release agents from concrete, loose materials, or other substances that prevent adherence and bonding or application of the firestopping or smoke stopping materials.

3.3.2. Remove insulation on insulated pipe for a distance of 150 mm (6 inches) on each side of the fire rated assembly prior to applying the firestopping materials unless the firestopping materials are tested and approved for use on insulated pipes.

3.3.3. Prime substrates were required by the joint firestopping system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

3.3.4. Masking Tape: Apply masking tape to prevent firestopping from contacting adjoining surfaces that will remain exposed upon completion of work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestopping materials. Remove tape as soon as it is possible to do so without disturbing the seal of firestopping with substrates.

### **3.4. INSTALLATION**

3.4.1. Do not begin firestopping work until the specified material data and installation instructions of the proposed firestopping systems have been submitted and approved.

3.4.2. Install firestopping systems with smoke stopping in accordance with FM, UL, WH, or other approved system details and installation instructions.

3.4.3. Install smoke stopping seals in smoke partitions.

### **3.5. FIELD QUALITY CONTROL**

3.5.1. Perform manufacturer's quality control check program at least once daily and upon changing to a new lot of materials.



3.5.2. Inspect cured seals after 24 hours by removing damming materials to examine seals. Replace dams where a required part of assembly.

3.5.3. Where voids occur, fill with freshly mixed foam or solid sealant. Reinspect after added material has cured 24 hours.

3.5.4. Ensure that cured foam sealants show acceptable or better color and cell structure range per manufacturer's recommendations.

3.5.5. Remove unacceptable sealants and replace with new.

### **3.6. CLEAN-UP**

3.6.1. As work on each floor is completed, remove materials, litter, and debris.

3.6.2. Clean up spills of liquid type materials.

3.6.3. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials approved by manufacturers of firestopping products and of products in which opening and joints occur.

3.6.4. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to provide firestopping complying with specified requirements.

### **3.7. INSPECTIONS AND ACCEPTANCE OF WORK**

3.7.1. Do not conceal or enclose firestop assemblies until inspection is complete and approved by the BGMS.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 4. Joint Sealers

30 JUNE 2023

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Revision	Date	Description



## JOINT SEALERS

### **PART 1 GENERAL**

#### 1.1. Sections includes:

- 1.1.1. Sealants and joint backing with no fire resistance rating.
- 1.1.2. Pre-compressed foam sealers with no fire resistance rating.

#### 1.2. RELATED SECTIONS:

- 1.2.1. "Cold Liquid Applied Elastomeric Membrane Waterproofing": Sealants required in conjunction with waterproofing.
- 1.2.2. "Fire Resistive Joint Sealants": Sealants with fire resistance rating
- 1.2.3. "Glazing": Glazing sealants and accessories.
- 1.2.4. "Ceramic Tiling": Installation of sealant at tile.
- 1.2.5. Civil / Structural Engineer's Specifications for Structural Concrete.
- 1.2.6. Civil / Structural Engineer's Specifications for Structural Steelwork.

#### 1.3. REFERENCES

- 1.3.1. ASTM C 834 - Standard Specification for Latex Sealants.
- 1.3.2. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications.
- 1.3.3. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
- 1.3.4. ASTM C 1193 - Standard Guide for Use of Joint Sealants.
- 1.3.5. ASTM D 1667 - Standard Specification for Flexible Cellular Materials—Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
- 1.3.6. Local Rules and Regulations: Current Editions.
- 1.3.7. IBC - International Building Code; 2003 Edition.

#### 1.4. SUBMITTALS

- 1.4.1. **Samples:** Submit two samples, in appropriate size illustrating sealant colors for selection and approval.
- 1.4.2. **Manufacturer's Installation Instructions:** Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

#### 1.5. ENVIRONMENTAL REQUIREMENTS

- 1.5.1. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

### **PART 2 PRODUCTS**

#### 2.1. MANUFACTURERS

- 2.1.1. Subject to compliance with requirements and as approved by the Project Architect/Engineer. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect/engineer.



## 2.2. SEALANTS

2.2.1. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single component.

2.2.1.1. Color: Colors matching finished surfaces and approved by Architect.

2.2.1.2. Applications: Use for:

2.2.1.2.1. Control, expansion, and soft joints in masonry.

2.2.1.2.2. Joints between concrete and other materials.

2.2.1.2.3. Joints between metal frames and other materials.

2.2.1.2.4. Joints in cast plastic and FRP.

2.2.1.2.5. Other exterior joints for which no other sealant is indicated.

2.2.2. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, non-skinning, non-curing.

2.2.2.1. Applications: Use for:

2.2.2.1.1. Concealed sealant bead in sheet metal work.

2.2.2.1.2. Concealed sealant bead in siding overlaps.

2.2.3. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.

2.2.3.1. Color: Colors matching finished surfaces and approved by Architect.

2.2.3.2. Applications: Use for:

2.2.3.2.1. Interior wall and ceiling control joints.

2.2.3.2.2. Joints between door and window frames and wall surfaces.

2.2.3.2.3. Other interior joints for which no other type of sealant is indicated.

2.2.3.1. Applications: Use for concealed locations only at walls with STC requirement:

2.2.3.1.1. Sealant bead between top stud runner and structure and between bottom stud track and floor.

2.2.4. Silicone Sealant [07:JT1]: ASTM C 920, Grade NS, Class 25, Uses NT, A, G, M, O; single component, solvent curing, non-sagging, non-staining, fungus resistant, non-bleeding.

2.2.4.1. Color: Colors matching finished surfaces and approved by Architect.

2.2.4.2. Movement Capability: Plus and minus 25 percent.

2.2.4.3. Service Temperature Range: -54 to 82 degrees C.

2.2.4.4. Shore A Hardness Range: 15 to 35.

2.2.4.5. Applications: Use for:

2.2.4.5.1. Glazing.

2.2.4.5.2. Tile at wet areas

2.2.5. Polysulphide Sealant [07:JT6]: One or two-part polysulphide base polymer sealing compound conforming to ASTM C920 and ANSI A-1 16.1, Class B (non-sag grade)



2.2.5.1. Subject to compliance with requirements, available products include, but are not limited to the following:

2.2.5.1.1. Degussa; Expanseal Polysulphide Joint Sealant.

2.2.5.1.2. Pacific Polymers, Inc.; Elastoseal 230 Type I or Elasto-Seal 227 Type II (Gun Grade).

2.2.5.1.3. Pecora Corporation; Synthacalk GC-2+.

2.2.5.1.4. Polymeric Systems Inc.; PSI-350.

2.2.5.1.5. PolySpec Corp.; T-2235-M, T-2282, Thiokol 2P

2.2.5.1.6. Sika; Duoflex NS

2.2.5.1.7. Sonneborn, Division of ChemRex Inc.; Sonolastic Polysulfide Sealant.

2.2.5.1.8. Approved substitute

2.2.5.2. Type and Grade: S or M and NS (nonsag).

2.2.5.3. Class: 25.

2.2.5.4. Uses Related to Exposure: NT (non-traffic).

### **2.3. ACCESSORIES (if applicable only)**

2.3.1. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

2.3.2. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

2.3.3. Joint Backing: [07:JT21] Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

2.3.4. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

2.3.5. Compressible Neoprene Filler [07:JT31]: Any product compliant with needed requirements.

## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

3.1.1. Verify that substrate surfaces are ready to receive work.

3.1.2. Verify that joint backing and release tapes are compatible with sealant.

3.1.3. Alert the Architect/Engineer of any discrepancies, prior to commencing the Work of this section.

3.1.4. Coordinate the Work of this section with applicable trades.

### **3.2. PREPARATION**

3.2.1. Remove loose materials and foreign matter which might impair adhesion of sealant.

3.2.2. Clean and prime joints in accordance with manufacturer's instructions.

3.2.3. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.

3.2.4. Protect elements surrounding the work of this section from damage or disfigurement.





### **3.3. INSTALLATION**

- 3.3.1. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- 3.3.2. Perform installation in accordance with ASTM C 1193.
- 3.3.3. Perform acoustical sealant application work in accordance with ASTM C 919.
- 3.3.4. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- 3.3.5. Install bond breaker where joint backing is not used.
- 3.3.6. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- 3.3.7. Apply sealant within recommended application temperature ranges. Consult the manufacturer when sealant cannot be applied within these temperature ranges.
- 3.3.8. Tool joints: concave.
- 3.3.9. Pre-compressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 3 to 6 mm below adjoining surface.

### **3.4. CLEANING**

- 3.4.1. Clean adjacent soiled surfaces.

### **3.5. PROTECTION OF FINISHED WORK**

- 3.5.1. Protect sealants until cured.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 7 - "THERMAL & MOISTURE PROTECTION"

### Section 5. Architectural Joint System

30 JUNE 2023

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ArJMM/ REV. 00

Revision	Date	Description



## ARCHITECTURAL JOINT SYSTEM

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUMMARY

1.2.1. This Section includes the following:

1.2.1.1. Architectural joint systems for building interiors.

1.2.1.2. Architectural joint systems for building exteriors.

1.2.2. Related Sections include the following:

1.2.2.1. "Unit Masonry Assemblies" for masonry wall joint systems.

1.2.2.2. "Firestopping" for firestopping materials

1.2.2.3. "Joint Sealers" for liquid-applied joint sealants.

#### 1.3. DEFINITIONS

1.3.1. **Maximum Joint Width:** Widest linear gap a joint system tolerates and in which it performs its designed function without damaging its functional capabilities.

1.3.2. **Minimum Joint Width:** Narrowest linear gap a joint system tolerates and in which it performs its designed function without damaging its functional capabilities.

1.3.3. **Movement Capability:** Value obtained from the difference between widest and narrowest widths of a joint opening typically expressed in numerical values (mm or inches) or a percentage (plus or minus) of nominal value of joint width.

1.3.4. **Nominal Joint Width:** The width of the linear opening specified in practice and in which the joint system is installed.

#### 1.4. SUBMITTALS

1.4.1. **Shop Drawings:** Provide the following for each joint system specified:

1.4.1.1. **Placement Drawings:** Include line diagrams showing plans, elevations, sections, details, splices, blockout requirement, entire route of each joint system, and attachments to other work. Where joint systems change planes, provide isometric or clearly detailed drawings depicting how components interconnect.

1.4.2. **Samples for Verification:** For each type of architectural joint system indicated.

1.4.2.1. Full width by 150 mm long, for each system required.

#### 1.5. QUALITY ASSURANCE

1.5.1. **Source Limitations:** Obtain interior architectural joint systems through one source from a single manufacturer.

1.5.2. **Product Options:** Drawings indicate size, profiles, and dimensional requirements of architectural joint systems and are based on the specific systems indicated.



1.5.2.1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to the Architect for review.

## 1.6. COORDINATION

1.6.1. Coordinate installation of exterior wall and soffit joint systems with roof expansion assemblies to ensure that wall transitions are watertight.

## 1.7. DELIVERY, STORAGE AND HANDLING

1.7.1. Exercise proper care in the handling of all work so as not to injure the finished surface, and take proper precautions to protect the work from damage after it is in place.

1.7.2. Deliver materials to the job site ready for use, and fabricated in as large sections and assemblies as practical. Assemblies shall be identical to submitted and reviewed shop drawings, samples and certificates.

1.7.3. Store materials under cover in a dry and clean location off the ground. Remove materials that are damaged or otherwise not suitable for installation from the job site and replace them with acceptable materials at no additional cost.

## 1.8. PROJECT CONDITIONS

1.8.1. Where necessary, check actual locations of walls and other construction to which work must fit, by accurate field measurements before fabrication. Show recorded measurements on final shop drawings and coordinate fabrication schedule with construction progress to avoid delay of work.

## PART 2 PRODUCTS

### 2.2. ARCHITECTURAL JOINT SYSTEMS, GENERAL

2.2.1. **General:** Provide architectural joint systems of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.

2.2.1.1. Furnish units in longest practicable lengths to minimize field splicing. Install hairline mitered corners where the joint changes direction or abuts other materials.

2.2.1.2. Include factory-fabricated closure materials and transition pieces, tee joints, corners, curbs, cross-connections, and other accessories as required to provide continuous joint systems.

2.2.2. Design architectural joint systems for 40mm nominal joint width and plus or minus 50 percent joint movement in all directions unless otherwise indicated in drawings.

### 2.3. ARCHITECTURAL JOINT SYSTEMS FOR BUILDING INTERIORS

2.3.1. **Manufacturers:** Subject to compliance with requirements, provide products approved by the architect.

#### 2.3.2. Architectural Joint Systems for Building Interior:

2.3.2.1. *Exposed Metal:* Aluminum or as otherwise indicated in drawings.

2.3.2.2. *Finish:* Clear anodized unless otherwise indicated in drawings.

2.3.2.3. *Gasket color:* As selected by Architect from manufacturer's full range.

2.3.2.4. *Products:* As indicated in drawings.



2.3.2.5. *Fire-Resistance Rating*: Provide joint system and fire-barrier assembly with a rating not less than that of adjacent construction unless otherwise indicated.

## 2.4. ARCHITECTURAL JOINT SYSTEMS FOR BUILDING EXTERIORS

2.4.1. **Manufacturers**: Subject to compliance with requirements and as approved by the Architect.

### 2.4.2. Architectural Joint Systems for Building Exterior:

2.4.2.1. *Exposed Metal*: Stainless steel grade 316 or as otherwise indicated in drawings.

2.4.2.2. *Gasket color*: As selected by Architect from manufacturer's full range.

2.4.2.3. *Products*: As indicated in drawings.

2.4.2.4. *Fire-Resistance Rating*: Provide joint system and fire-barrier assembly with a rating not less than that of adjacent construction unless otherwise indicated.

## 2.5. FINISHES

2.5.1. Comply with standards for recommendations for applying and designating finishes.

2.5.2. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.5.3. Appearance of Finished Work: Noticeable variations in the same piece are not acceptable.

## PART 3 EXECUTION

### 3.1. EXAMINATION

3.1.1. Examine surfaces and block outs where architectural joint systems will be installed for installation tolerances and other conditions affecting performance of work.

3.1.1.1. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2. PREPARATION

3.2.1. Prepare substrates according to architectural joint system manufacturer's written instructions.

3.2.2. Repair concrete slabs and block outs using manufacturer's recommended repair grout of compressive strength adequate for anticipated structural loadings.

3.2.3. Coordinate and furnish anchorages, setting drawings, and instructions for installing joint systems. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of joint systems.

### 3.3. INSTALLATION

3.3.1. Comply with manufacturer's written instructions for storing, handling, and installing architectural joint assemblies and materials unless more stringent requirements are indicated.

3.3.2. **Metal Frames**: Perform cutting, drilling, and fitting required to install joint systems.

3.3.2.1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.

3.3.2.2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation. Notify Architect where discrepancies occur that will affect proper joint installation and performance.



3.3.2.3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.

3.3.2.4. Locate in continuous contact with adjacent surfaces.

3.3.2.5. Standard-Duty Systems: Shim to level where required. Support underside of frames continuously to prevent vertical deflection when in service.

3.3.2.6. Heavy-Duty Systems: Repair or grout block out as required for continuous frame support and to bring frame to proper level. Shimming is not allowed.

3.3.2.7. Locate anchors at intervals recommended by the manufacturer, but not less than 3 inches (75 mm) from each end and not more than 24 inches (600 mm) o.c.

3.3.3. **Seals in Metal Frames:** Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions. Install with a minimum number of end joints.

3.3.3.1. Provide in continuous lengths for straight sections.

3.3.3.2. Seal transitions according to manufacturer's written instructions. Vulcanize or heat-weld field-spliced joints as recommended by the manufacturer.

3.3.3.3. Installation: Mechanically lock seals into frames or adhere to frames with adhesive or pressure-sensitive tape as recommended by the manufacturer.

3.3.4. **Compression Seals:** Apply adhesive or lubricant adhesive as recommended by manufacturer to both frame interfaces before installing compression seals.

3.3.5. **Foam Seals:** Install with adhesive recommended by the manufacturer.

3.3.6. **Epoxy-Bonded Seals:** Pressurize seal for time period and to pressure recommended by manufacturer. Do not over pressurize.

3.3.7. Terminate exposed ends of joint assemblies with field- or factory-fabricated termination devices.

3.3.8. **Fire-Resistance-Rated Assemblies:** Coordinate installation of architectural joint assembly materials and associated work so complete assemblies comply with assembly performance requirements.

3.3.9. **Fire Barriers:** Install fire barriers to provide continuous, uninterrupted fire resistance throughout the length of joint, including transitions and field splices.

3.3.10. **Water Barrier:** Provide water barrier at exterior joints and where called for on Drawings. Provide drainage fittings at a maximum of 50 feet (15.2 m) or where indicated.

### 3.4. PROTECTION

3.4.1. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.

3.4.2. Protect the installation from damage by work of other Sections. Where necessary due to heavy construction traffic, remove and properly store cover plates or seals and install temporary protection over joints. Reinstall cover plates or seals prior to Substantial Completion of the Work.

\*\*\* END OF SECTION \*\*\*



# ARCHITECTURAL SPECIFICATION

## DIVISION 8 - "DOORS & WINDOWS"

### Section 1. Wood Door

30 JUNE 2023

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ArJMM/ REV. 00

Revision	Date	Description



## WOOD DOORS

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

- 1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- 1.1.2. Wood doors; configuration; fire rated and non-rated.

#### 1.2. SUMMARY

- 1.2.1. This Section includes the following:
  - 1.2.1.1. Wood doors , medium-density overlay, hardboard, and plastic- laminate faces.
  - 1.2.1.2. Factory finishing flush wood doors.
  - 1.2.1.3. Factory fitting flush wood doors to frames and factory machining for hardware.
  - 1.2.1.4. Louvers for flush wood doors.
- 1.2.2. Related Sections include the following:
  - 1.2.2.1. "Finish Carpentry" for wood door frames.
  - 1.2.2.2. "Glazing" for glass view panels in flush wood doors.

#### 1.3. REFERENCES

- 1.3.1. AWI P-200 – Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute.
- 1.3.2. NFPA 80 – Standard for Fire Doors and Fire Windows; National Fire Protection Association.
- 1.3.3. NFPA-105 Recommended Practice for Installation of Smoke-Control Door Assemblies.
- 1.3.4. NFPA 252 – Standard Methods for Fire Tests of Door Assemblies; National Fire Protection Association.
- 1.3.5. WDMA – Window and Door Manufacturers Association: I.S. 1-A Industry Standard for Architectural Flush Wood Doors.
- 1.3.6. UL (BMD) – Building Materials Directory; Underwriters Laboratories Inc.
- 1.3.7. British Standards Institution (BSI)
- 1.3.8. National Building Code of the Philippines
- 1.3.9. Quezon City's Local Rules and Regulations
- 1.3.10. Fire Code of the Philippines

#### 1.4. SUBMITTALS

- 1.4.2. **Shop Drawings:** Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.
  - 1.4.2.1. Indicate dimensions and locations of mortises and holes for hardware.
  - 1.4.2.2. Indicate dimensions and locations of cutouts.





- 1.4.2.3. Indicate requirements for veneer matching.
- 1.4.2.4. Indicate doors to be factory finished and finish requirements.
- 1.4.2.5. Indicate fire ratings for fire doors.

1.4.3. **Samples for Initial Selection:** Color charts consisting of actual materials in small sections for the following:

- 1.4.3.1. *Plastic-Laminate Door Faces:* Show the full range of colors, textures, and patterns available.
- 1.4.3.2. *Faces of Factory-Finished Doors:* Show the full range of colors available for stained and opaque finishes.

1.4.4. **Samples for Verification:**

- 1.4.4.1. For each door type specified, provide one full size mockup completed with hardware installation, representing actual product, color, and finishes for verification.

## 1.5. QUALITY ASSURANCE

1.5.1. **Source Limitations:** Obtain flush wood doors through one source from a single manufacturer.

1.5.2. **Fire-Rated Wood Doors:**

- 1.5.2.1. *Local codes and regulations:* Fire-rated doors to comply with local codes and regulations and approved by the Fire Services Department.

1.5.3. **Non-Rated Wood Doors:** Conform to National building code and local codes and regulations for fire retardant requirements, and approved by Fire Department.

1.5.4. Maintain at the project site a copy of all specified door quality standards for review during installation and finishing.

## 1.6. DELIVERY, STORAGE, AND HANDLING

1.5.6.1. Comply with the Care and Installation guidelines as described in AWI Quality Standards Illustrated, Section 1300 and manufacturer's written instructions.

1.5.6.2. Package doors individually in plastic bags or cardboard cartons. Plastic wrap and protect doors during transit, storage and handling to prevent damage, soiling or deterioration.

1.5.6.3. Accept doors on site in manufacturer's packaging. Inspect for damage.

1.5.6.4. Mark each door on top and bottom rail with the opening number used on Shop Drawings.

## 1.7. PROJECT CONDITIONS

1.7.1. Coordinate the work with door opening construction, door frame and door hardware installation.

## 1.8. WARRANTY

1.8.1. The manufacturers and installers shall jointly provide a twenty years warranty against material defects, fire protection and workmanship for work of this section.



## **PART 2 PRODUCTS**

### **2.1. MANUFACTURER**

2.1.1. All doors specified in this section shall be proprietary products from a single manufacturer. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

### **2.2. DOOR CONSTRUCTION, GENERAL**

2.2.1. Requirements for all doors:

2.2.1.3. Construction: Five plies with stiles and rails bonded to core, then the entire unit abrasive planed before veneering or before faces and crossbands are applied unless otherwise specified.

2.2.1.3.1. Wood veneer faced doors: Minimum face veneer thickness shall be 0.5mm at 12% moisture content after finish sanding.

2.2.1.4. *Thickness*: 45mm unless otherwise specified.

2.2.1.5. *Blocking*: Provide composite blocking with improved screw- holding capability approved for use in doors of fire ratings indicated as needed to eliminate through-bolting hardware.

2.2.1.6. ANSI/WDMA I.S. 1-A Performance Duty Level: Heavy-duty.

### **2.3. FABRICATION**

2.3.1. Fabricate doors in sizes indicated for Project-site fitting.

2.3.2. Fabricate wood doors in accordance with required sizes and standards.

2.3.3. Fabricate fire rated doors in accordance with requirements of Underwriters' Laboratories. Attach fire rating label to door.

2.3.4. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements in NFPA 80 for fire-rated doors.

2.3.7. **Fire Retardant Treatment**: Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 50, maximum, when tested in accordance with ASTM E84.

2.3.8. **Transom and Side Panels**: Fabricate matching panels with same construction, exposed surfaces, and finish as specified for associated doors. Finish bottom edges of transoms and top edges of rabbeted doors same as door stiles.

2.3.8.1. Fabricate door and transom panels with full-width, solid lumber meeting rails. Provide factory-installed spring bolts for concealed attachment into jambs of metal door frames.

2.3.9. **Openings**: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required.

2.3.10. **Light Openings**: Trim openings with moldings of material and profile indicated.

2.3.11. **Exterior Doors**: Factory treat exterior doors with water repellent after manufacturing has been completed.



## 2.4. FACTORY FINISHING

2.4.1. **General:** Comply with the required design and finish indicated on drawings unless otherwise noted.

## **PART 3 EXECUTION**

### 3.1. EXAMINATION

3.1.1. Examine doors and install door frames before hanging doors.

3.1.1.1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.

3.1.1.2. Reject doors with defects.

3.1.2. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2. INSTALLATION

3.2.1. **Hardware:** For installation, see "Door Hardware."

3.2.2. Install doors to comply with manufacturer's written instructions, and as required and indicated.

3.2.3. Install fire-rated doors in corresponding fire-rated frames according to local standards.

3.2.4. Condition doors to average temperature and humidity in the area of installation for not less than 48 hours prior to installation. Store doors per recommendations.

3.2.5. Set plumb, level, square and true. Install work after building humidity is at an acceptable level.

3.2.6. Install in a neat and workmanlike manner, free from hammer or tool marks, open joints or slivers.

3.2.7. Remove and replace all doors found to be warped, twisted, bowed, or otherwise damaged. Do not install doors which cannot be properly fitted to frames.

3.2.8. Coordinate installation of doors with installation of frames and hardware.

3.2.9. Ensure that smoke gaskets are in-place before prefinished door installation.

3.2.10. **Job-Fitted Doors:** Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.

3.2.10.1. Clearances: Provide 3.2 mm at heads, jambs, and between pairs of doors. Provide 3.2 mm from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 6.4 mm from bottom of door to top of threshold.

3.2.10.1.1. Comply with NFPA 80 for fire-rated doors.

3.2.10.2. Bevel non-fire-rated doors 3-1/2 degrees at lock and hinge edges.

3.2.10.3. Bevel fire-rated doors 3-1/2 degrees at lock edge; trim stiles and rails only to extent permitted by labeling agency.

3.2.11. **Factory-Fitted Doors:** Align in frames for uniform clearance at each edge.

3.2.12. **Factory-Finished Doors:** Restore finish before installation if fitting or machining is required at Project site.



### 3.3. ADJUSTMENTS

3.3.1. **Operation:** Rehang or replace doors that do not swing or operate freely.

3.3.2. **Finished Doors:** Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

### 3.4. PROTECTION

3.4.1. Provide temporary and removable protection for installed products to protect installed work from damage by construction operations.

3.4.2. Do not partially cover door surfaces with paper, cardboard, or any other opaque covering that will create uneven aging of wood veneer.

3.4.3. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 8 - "DOORS & WINDOWS"

### Section 4. Door Hardware

30 JUNE 2023

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Revision	Date	Description



## DOOR HARDWARE

### PART 1 GENERAL

#### 1.1. RELATED DOCUMENTS

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2. SUBMITTALS

1.2.1. **Product Data:** Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

1.2.2. **Samples for Initial Selection:** For each finish, color, and texture required for each type of door hardware indicated.

1.2.3. **Samples for Verification:**

1.2.3.1. Submit minimum 50-by-100-mm plate Samples of each type of finish required, except primed finish.

1.2.3.2. For exposed door hardware of each type, in specified finish, full size. Tag with full description for coordination with the door hardware sets. Submit Sample before, or concurrent with, submission of the final door hardware sets.

1.2.3.3. Samples will be returned to the Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.

1.2.4. **Shop Drawings:** Details of electrified door hardware, indicating the following:

1.2.4.1. *Wiring Diagrams:* Power, signal, and control wiring. Include the following:

1.2.4.1.1. System schematic.

1.2.4.1.2. Point-to-point wiring diagram.

1.2.4.1.3. Riser diagram.

1.2.4.1.4. Elevation of each door.

1.2.4.2. Detail interface between electrified door hardware, access control and life safety system.

1.2.4.3. *Operation Narrative:* Describe the operation of doors controlled by electrified door hardware.

#### 1.3. DELIVERY, STORAGE AND HANDLING

1.3.1. **Delivery:** coordinate delivery to appropriate locations (shop or field).

1.3.1.1. Permanent keys and cores: secured delivery direct to the DSWD/BGMS

1.3.2. **Acceptance at Site:** Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

1.3.3. **Storage:** Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.



## 1.4. PROJECT CONDITIONS

1.4.1. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical as the same operation and quality as type specified, subject to Architect's approval.

## PART 2 PRODUCTS

### 2.1. DISCLAIMER

2.1.1. Named Manufacturers or Manufacturers' products are for reference of quality and standard required for the type of specified product only. The acceptance of the actual product for the works is subject to compliance with requirements of this specification, including compliance with Philippine National Building codes and regulations and accepted by the Philippine Fire Code.

2.1.2. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

### 2.2. SCHEDULED DOOR HARDWARE

2.2.1. **General:** Provide door hardware for each door to comply with requirements in this Section and door hardware sets indicated in the door schedule.

2.2.1.1. **Door Hardware Sets:** Provide quantity, item, size, finish or color indicated, and products equivalent in function and comparable in quality to named products and complying with standards referenced.

2.2.1.2. **Sequence of Operation:** Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.

### 2.3. HINGES

2.3.1. **Butts and Hinges:** Approved Brand only.

2.3.2. **Door swing:** drawings typically depict doors at 90 degrees, doors will actually swing to maximum allowable. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow the door to stand parallel to the wall for true 180-degree opening. Advise the architect if 8-inch width is insufficient.

2.3.3. **Conventional Hinges:** Steel or stainless steel pins and concealed bearings. Hinge open widths minimum, but of sufficient throw to permit maximum door swing.

2.3.3.1. Three hinges per leaf to 7-foot, 6-inch height. Add one for each additional 30 inches in height, or any fraction thereof.

2.3.3.2. Extra heavy weight hinges on doors over 3 foot, 5 inches in width.

2.3.3.3. Extra-heavy weight hinges on doors with panic hardware or fire exit devices.

2.3.3.4. Out swinging exterior doors: non-ferrous with non-removable (NRP) pins.

2.3.3.5. Non-ferrous material exteriors and at doors subject to corrosive atmospheric conditions.

2.3.3.6. Provide shims and shimming instructions for proper door adjustment.

2.3.4. **Continuous Hinges:**

2.3.4.1. *Geared-type aluminum at exteriors.*

2.3.4.1.1. Heavy-duty, extra-bearing units for doors over 3 foot, 5 inches in width.



2.3.4.1.2. Heavy-duty, extra-bearing units for doors with panic hardware or fire exit devices.

2.3.4.1.3. Use wide-throw units where needed for maximum degree of swing, advise the architect if commonly available hinges are insufficient.

2.3.4.2. *Pinned steel/stainless steel type*: continuous stainless steel, 0.25-inch diameter stainless-steel hinge pin.

2.3.4.2.1. Use engineered application-specific wide-throw units as needed to provide maximum swing degree of swing, advise the architect if required width exceeds 8 inches.

2.3.5. **Pivots**: high-strength forged bronze or stainless steel, tilt-on precision bearing and bearing pin.

2.3.5.1. Bottom and intermediate pivots: adjustability of minus 1/16 inch, plus 1/8 inch.

## 2.4. LOCKSETS, LATCHSETS, DEADBOLTS

2.4.1. **Mortise Locksets and Latch sets**: as scheduled.

2.4.1.1. *Chassis*: cold-rolled steel, handing field-changeable without disassembly.

2.4.1.2. *Latch bolts*: 3/4-inch throw stainless steel anti-friction type.

2.4.1.3. *Lever Trim*: through-bolted, accessible design, cast lever or solid extruded bar type levers as scheduled. Filled hollow tube design unacceptable.

2.4.1.3.1. *Spindles*: security design independent breakaway. Breakage of the outside lever does not allow access to the inside lever's hub works to gain wrongful entry.

2.4.1.4. *Thumb turns*: accessible design not requiring pinching or twisting motions to operate.

2.4.1.5. *Deadbolts*: stainless steel 1-inch throw.

2.4.1.6. *Electric operation*: Manufacturer-installed continuous duty solenoid.

2.4.1.7. *Strikes*: 16 gauge curved steel, bronze or brass with 1-inch deep box construction, lips of sufficient length to clear trim and protect clothing.

2.4.1.8. *Certifications*:

2.4.1.9. ANSI A156.13, 1994, Grade 1 Operational, Grade 1 Security.

2.4.1.10. ANSI/ASTM F476-84 Grade 31 UL Listed.

2.4.2. **Extra Heavy Duty Cylindrical Locks and Latches**: as scheduled.

2.4.2.1. *Chassis*: cylindrical design, corrosion-resistant plated cold-rolled steel, through-bolted.

2.4.2.2. *Locking Spindle*: stainless steel, interlocking design.

2.4.2.3. *Latch Retractors*: forged steel. Balance of inner parts: corrosion resistant plated steel, or stainless steel.

2.4.2.4. *Backset*: 2-3/4" typically, more or less as needed to accommodate frame, door or other hardware.





2.4.2.5. *Lever Trim*: accessible design, independent operation, spring-cage supported, minimum 2" clearance from lever mid-point to door face.

2.4.2.6. *Electric operation*: Manufacturer-installed continuous duty solenoid.

2.4.2.7. *Strikes*: 16 gauge curved steel, bronze or brass with 1" deep box construction, lips of sufficient length to clear trim and protect clothing.

2.4.2.8. *Certifications*:

2.4.2.8.1. ANSI A156.2, 1994, Series 4000, Grade 1.

2.4.2.8.2. UL listed for A label and lesser class single doors up to 4ft x 8ft.

2.4.3. **Standard Duty Cylindrical Locks and Latches**: as scheduled.

2.4.3.1. *Chassis*: cylindrical design, corrosion-resistant plated cold-rolled steel, through-bolted.

2.4.3.2. *Locking Spindle*: stainless steel, interlocking design.

2.4.3.3. *Latch Retractors*: forged steel. Balance of inner parts: corrosion resistant plated steel or stainless steel.

2.4.3.4. *Backset*: 2-3/4" typically, more or less as needed to accommodate frame, door or other hardware.

2.4.3.5. *Lever Trim*: accessible design, independent operation, spring-cage supported, minimum 2" clearance from lever mid-point to face of door.

2.4.3.6. *Certifications*:

2.4.3.6.1. ANSI A156.2, 1994, Series 4000, Grade 2

2.4.3.6.2. UL listed for A label and lesser class single doors up to 4ft x 8ft.

## 2.5. EXIT DEVICES / PANIC HARDWARE

2.5.1. **General features**:

2.5.1.1. Independent lab-tested 1,000,000 cycles.

2.5.1.2. Push-through push-pad design. No exposed push-pad fasteners, no exposed cavities when operated. Return stroke fluid dampeners and rubber bottoming dampeners, plus anti-rattle devices.

2.5.1.3. 0.75-inch throw deadlocking latch bolts.

2.5.1.4. End caps: impact-resistant, flush-mounted. No raised edges or lips to catch carts or other equipment.

2.5.1.5. No exposed screws to show through glass doors.

2.5.1.6. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.

2.5.1.7. Releasable in normal operation with 15-lb. maximum operating force per UBC Standard 10-4, and with 32 lb. maximum pressure under 250- lb. load to the door.

2.5.1.8. Flush end cap design as opposed to typical "bottle-cap" design end cap.

2.5.2. **Specific features**:



- 2.5.2.1. *Non-Fire Rated Devices*: cylinder dogging.
- 2.5.2.2. *Lever Trim*: Breakaway type, forged brass or bronze escutcheon min .130" thickness, compression spring drive, match lockset lever design.
- 2.5.2.3. *Rod and latch guards* with sloped full-width kick plates for doors fitted with surface vertical rod devices with bottom latches.
- 2.5.2.4. *Fire-Labeled Devices*: UL label indicating "Fire Exit Hardware". Vertical rod devices less bottom rod (LBR) unless otherwise scheduled.
- 2.5.2.5. *Impact recessed devices*: 1-1/4inch projection when push-pad is depressed. Sloped metal end caps to deflect carts, etc. No pinch points to catch skin between the touch bar and door.
- 2.5.2.6. *Delayed Egress Devices*: Function achieved within a single exit device component, including latch, delayed locking device, request-to-exit switch, nuisance alarm, remote alarm, key switch, indicator lamp, relay, internal horn, door position input, external inhibit input plus fire alarm input. NFPA 101 "Special Locking Arrangement" compliant.
- 2.5.2.7. *Electrically Operated Devices*: Single manufacturer source for electric latch retraction devices, electrically controlled trim, power transfers, power supplies, monitoring switches and controls.
- 2.5.2.8. *Removable Mullions*: Removable with a single turn of building key. Securely reinstalled without need for key. Furnish storage brackets for securely storing the mullion away from the door when removed.

## 2.6. CLOSERS

- 2.6.1. **Accessibility Requirements**: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with ANSI A117.1.
- 2.6.2. Comply with the following maximum opening-force requirements:
- 2.6.2.1. *Interior, Non-Fire-Rated Hinged Doors*: 5lbf (22.2 N) applied perpendicular to door.
- 2.6.2.2. *Sliding or Folding Doors*: 5 lbf (22.2 N) applied parallel to the door at latch.
- 2.6.2.3. *Fire Doors*: Minimum opening force allowable by authorities having jurisdiction.
- 2.6.2.4. *Means of Egress Doors*: Comply with NFPA 101. Door closers shall not require more than 30 lbf (133 N) to set the door in motion and not more than 15 lbf (67 N) to open the door to minimum required width.
- 2.6.3. **Surface Closers**:
- 2.6.3.1. Full rack-and-pinion type cylinder with removable non-ferrous cover and cast iron body. Double heat-treated pinion shaft, single piece forged piston, chrome silicon steel spring.
- 2.6.3.2. ISO 2000 certified. Units stamped with date-of-manufacture code.
- 2.6.3.3. Independent lab-tested 5,000,000 cycles.
- 2.6.3.4. Non-sized, non-handed and adjustable. Place closers inside buildings, stairs and rooms.



2.6.3.5. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.

2.6.3.6. Separate adjusting valves for closing speed, latching speed and backcheck, fourth valve for delayed action where scheduled.

2.6.3.7. Extra-duty arms (EDA) at exterior doors scheduled with parallel arm units.

2.6.3.8. Exterior door closers: tested to 100 hours of ASTM B117 salt spray test, furnish data on request.

2.6.3.9. Exterior doors do not require seasonal adjustments in temperatures from 120 degrees F to 0 degrees F, furnish data on request.

2.6.3.10. Non-flaming fluid will not fuel door or floor covering fires.

2.6.3.11. Pressure Relief Valves (PRV): unsafe, not permitted.

2.6.4. **Floor Closers:** hydraulically controlled, cement case, maximum degree dead stop permitted by trim or adjacent structure. Special pins, floor pans and longer spindles when needed to accommodate floor and jamb conditions.

2.6.5. **High Security Closers:** Removable heavy gauge metal case. Cylinders independent test lab certified to exceed 10,000,000 cycles. Vandal and tamper resistant forged steel arm. Exposed fasteners: pinned TORX type.

2.6.5.1. *Advanced Variable Backcheck (AVB):* where scheduled, these units commence backcheck at approximately 45 degrees.

2.6.6. **Overhead Concealed Closers:** Power transmitted to the door separately from hanging means. Closer spindles do not support the door. Cast iron cylinders with hydraulically checked rack and pinion construction and single piece forged pistons. Separate noncritical sweep and latch speed valves.

2.6.6.1. Concealed in 1-3/4inch x 4-1/2inch tube, double-lever arm power transmission.

2.6.6.2. 10,000,000 cycle-tested cylinder, double-lever arm power transmission.

2.6.7. **Electromagnetic Hold-Open Closers:** Integrate with UL listed fire/life-safety alarm systems.

2.6.7.1. Multi-point units: hold-open bypass at 80 deg or 140 deg. Swingfree/no-drift arms at pull-side mounted units.

2.6.8. **Low-Energy Door Operators:** Comply with ANSI/BHMA 156.19 Electric power-open, hydraulically checked spring power closing. Modular construction. Finished metal cover. Field-adjustable opening force, opening speed, time-open, closing and latching speeds. Door reopens and the timing cycle restores if the system reacts during the closing cycle. Breakaway clutch protection from forced closing. Door, frame, motor and drivetrain protected by attenuated initiation of opening cycle.

2.6.8.1. Self-contained low-voltage power supply, terminal strip and sequencing for incorporation of electric hardware with system operation.

## 2.7. OTHER HARDWARE

2.7.1. **Automatic Flush Bolts:** Low operating force design, "LBR" type where scheduled.

2.7.2. **Overhead Stops:** Stainless steel (100 series). Non-plastic mechanisms and finished metal end caps. Field-changeable hold-open, friction and stop-only functions.



2.7.3. **Kick Plates:** Four beveled edges, .050 inches minimum thickness, height and width as scheduled. Sheet-metal screws of bronze or stainless steel to match other hardware.

2.7.4. **Door Stops:** Provide stops to protect walls, casework or other hardware.

2.7.5. Unless otherwise noted in Hardware Sets, provide floor type with appropriate fasteners. Where floor type cannot be used, provide wall type. If neither can be used, provide an overhead type.

2.7.5. **Seals:** Finished to match adjacent frame color. Resilient seal material: polypropylene, nylon brush, or solid high-grade neoprene. UL label applied to seals on rated doors. Substitute products: certify that the products equal or exceed specified material's thickness and durability. Proposed substitutions: submit for approval.

2.7.5.1. *Solid neoprene:* MIL Spec. R6855-CL III, Grade 40.

2.7.5.2. Non-corroding fasteners at in-swinging exterior doors.

2.7.5.3. *Sound control openings:* Use components tested as a system using nationally accepted standards by independent laboratories. Ensure that the door leafs have the necessary sealed-in-place STC ratings. Adhesive mounted components are not acceptable. Fasten applied seals over the bead of sealant.

2.7.5.4. *Fire-rated Doors, Resilient Seals:* UL10C compliant. Coordinate with selected door manufacturers' and selected frame manufacturers' requirements. Where rigid housed resilient seals are scheduled in this section and the selected door manufacturer only requires an adhesive mounted resilient seal, furnish rigid housed seal at minimum, or both the rigid housed seal plus the adhesive applied seal. Adhesive applied seals alone are deemed insufficient for this project where rigid housed seals are scheduled.

2.7.5.5. *Fire-rated Doors, Intumescent Seals:* Furnished by selected door manufacturer. Furnish fire-labeled opening assembly complete and in full compliance with UL10C. Where required, intumescent seals vary in requirement by door type and door manufacture -- careful coordination required. Adhesive Applied intumescent strips are not acceptable, use concealed-in-door-edge type or kerfed-in-frame type.

2.7.6. Automatic door bottoms: low operating force units. Doors with automatic door bottoms plus head and jamb seals cannot require more than two pounds operating force to open when closer is disconnected.

2.7.7. **Thresholds:** Comply with requirements below, as scheduled and per details.

2.7.7.1. Standard: BHMA A156.21.

2.7.7.2. *Accessibility Requirements:* Where thresholds are indicated to comply with accessibility requirements, comply with ANSI A117.1.

2.7.7.2.1. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.

2.7.7.2.2. Thresholds for Means of Egress Doors: Comply with NFPA 101. Maximum 1/2 inch (13 mm) high.

2.7.7.3. *Exteriors:* Seal perimeter to exclude water and vermin. Use butyl rubber or polyisobutylene sealant complying with requirements in Division 7 "Thermal and Moisture Protection". Non-ferrous 1/4inch fasteners and lead expansion shield anchors, or Red-Head #SFS-1420 (or approved equivalent) Flat Head Sleeve Anchors (SS/FHSL).



2.7.7.4. Fire-rated openings, 90min or less duration: use thresholds to interrupt floor covering material under the door where that material has a critical radiant flux value less than 0.22 watts per square centimeter, per NFPA 253. Use the threshold unit as scheduled. If none is scheduled, request direction from the Architect.

2.7.7.5. Fire-rated openings, 3hour duration: Thresholds, where scheduled, to extend full jamb depth.

2.7.7.6. Acoustic openings: Set units in full bed of Division-7-compliant butyl rubber or polyisobutylene sealant, leave no air space between threshold and substrate.

2.7.7.7. Plastic plugs with wood or sheet metal screws are not an acceptable substitute for specified fastening methods.

2.7.7.8. Substitute products: certify that the products equal or exceed specified material's thickness and quality.

2.7.7.9. Proposed substitutions: submit for approval.

2.7.8. **Fasteners:** Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

2.7.9. **Through-bolts:** Do not use. Coordinate with wood doors, ensure provision of proper blocking to support wood screws for mounting panic hardware and door closers. Coordinate with metal doors and frames, ensure provision of proper reinforcement to support machine screws for mounting panic hardware and door closers.

2.7.10. **Silencers:** Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Omit where adhesive mounted seal occurs. Leave no unfilled/uncovered pre-punched silencer holes.

2.7.11. **Key Control Software:** Same manufacturer as key cylinders, supply to DSWD.

2.7.12. **Wall- & Floor-mounted electromagnetic door holders:** Incorporate into the U.L.-listed fire & life-safety system, doors release to allow closure and latching when the door's zone is in alarm state. Use the minimum projection required to allow the door to open as widely as allowed by wall conditions and projection of door hardware.

2.7.13. **Stainless Steel Guard Rails:** Tubular stainless steel welded construction, #8 standard finish, no mid-panels, 6-inch minimum concrete embedment of forward vertical member, wall attachment at four points using 1/4-inch minimum diameter fasteners through integral welded strap.

## 2.8. FINISH

2.8.1. **Standard:** BHMA A156.18, as indicated in door hardware sets and schedule.

2.8.2. Areas using BHMA 626 to have push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.

2.8.3. **Door closers:** factory powder coated to match other hardware, unless otherwise noted.

2.8.4. **Aluminum items:** match predominant adjacent material. Seals to coordinate with frame color.

## 2.9. KEYING REQUIREMENTS

2.9.1. **Key System:** Manufacturer's utility-patented keyway, conventional cylinders. Utility patent protection to extend at least until 2014. Key blanks available only from factory direct sources, not available from after-market key blank manufacturers. For estimate use factory GMK charge.



Initiate and conduct meetings(s) with DSWD and Security & Safety Consultants representatives to determine system keyway(s), structure and degree of geographic exclusivity. Furnish DSWD's written approval of the system.

2.9.1.1. New factory registered master key system.

2.9.1.2. *Non-I.C. construction keying*: furnish inserted type partial key. At substantial completion, remove inserts in DSWD's presence; demonstrate consequent non operability of construction key. Give all removed inserts and all construction keys to DSWD/BGMS.

2.9.4. **Permanent keys**: furnish secured shipment direct from point of origination to DSWD.

## **PART 3 EXECUTION**

### **3.1. PREPARATION**

3.1.1. Ensure that walls and frames are square and plumb before hardware installation.

3.1.2. Locate hardware per ANSI A250.8 and applicable building, fire, life-safety, accessibility, and security codes.

3.1.2.1. Notify the Architect of any code conflicts before ordering material.

3.1.2.2. **Mounting Heights**: Mount door hardware units at heights indicated on Drawings unless otherwise indicated or required to comply with governing regulations.

3.1.2.3. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.

3.1.3. **Overhead stops**: before installing, determine proposed locations of furniture items, fixtures, and other items to be protected by the overhead stop's action.

3.1.4. Existing frames and doors scheduled to receive new hardware: carefully remove existing hardware, tag and bag, and turn over to DSWD.

3.1.4.1. Patch and fill wood frames and doors with solid wood dutchments before cutting for new hardware. Do not reuse existing screw holes - - fill with dowel plugs and re-pilot.

3.1.4.2. *Metal doors/frames*: Weld or fasten with screws: filler pieces in existing hardware cut-outs and mortises not scheduled for re-use by new hardware. Leave surfaces smooth - - no applied patches.

3.1.4.3. Remove unused existing floor closers, fill empty floor closer cavities with concrete.

### **3.2. INSTALLATION**

3.2.1. Install hardware per manufacturer's instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by the Architect.

3.2.1.1. *Gaskets*: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

3.2.1.2. When hardware is to be attached to an existing metal surface and insufficient reinforcement exists, use approved or as indicated anchoring devices for screws.

3.2.1.3. Use manufacturers' fasteners furnished with hardware items, or submit a Request for Substitution with the Architect.



3.2.1.4. Replace fasteners damaged by power-driven tools.

3.2.2. Locate floor stops no more than 4 inches from walls and not within paths of travel. See paragraph 2.3 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where the situation is questionable or difficult, contact the Architect for direction.

3.2.3. Locate overhead stops for minimum 90 degrees and maximum allowable degree of swing.

3.2.4. Drill pilot holes for fasteners in wood doors and/or frames.

3.2.5. Lubricate and adjust existing hardware scheduled to remain. Carefully remove and give to DSWD items not scheduled for reuse.

### 3.3. ADJUSTING

3.3.1. Adjust and check for proper operation and function. Replace units, which cannot be adjusted to operate freely and smoothly.

3.3.1.1. Hardware damaged by improper installation or adjustment methods to be repaired or replaced to DSWD's satisfaction.

3.3.1.2. Adjust doors to fully latch with no more than 1 pound of pressure.

3.3.1.3. Adjust delayed-action closers on fire-rated doors to fully close from fully opened position in no more than 10 seconds.

3.3.2. **Inspection:** Use hardware supplier. Include supplier's report with closeout documents.

### 3.4. DEMONSTRATION

3.4.1. Demonstrate electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

### 3.5. PROTECTION/CLEANING

3.5.2. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.

3.5.3. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

### 3.6. SCHEDULE OF FINISH HARDWARE

3.6.1. See door schedule for hardware set assignments.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 8 - "DOORS & WINDOWS"

### Section 5. Glazing Works

14 JUNE 2023

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ArJMM/ REV. 00

Revision	Date	Description





## GLAZING WORKS

### **PART 1 GENERAL**

#### **1.1. SCOPE**

- 1.1.1. The work includes the supply and furnishing of materials, including equipment, and performing labor necessary to complete the installation of glazing works as specified and as shown on drawings and schedules.

#### **1.2. SUBMITTALS**

##### **1.2.1. Samples**

Submit duplicate 250 mm (10 inch) glass samples, factory labeled, of each type of glass specified herein.

##### **1.2.2. Shop Drawings**

Show complete details of setting methods and materials for the type of glazing material specified.

#### **1.3. DELIVERY AND STORAGE**

Deliver products to the project site in unopened containers, labeled plainly with manufacturer's names and brands. Store glass and setting materials in a safe, dry location and do not unpack until needed for installation. Handle and install materials in a manner that will protect them from damage.

#### **1.4. ENVIRONMENTAL CONDITIONS**

Provide sufficient ventilation to prevent condensation of moisture on glazing work during installation. Do not perform glazing work during damp or rainy weather.

### **PART 2 PRODUCTS**

#### **2.2. GLASS**

Conforming to Fed. Specs. DD-G-451d and DD-G-1403B, unless specified otherwise. In certain glazed panels, provide safety glazing material conforming to Consumer Product Safety Commission.

##### **2.2.1. Clear Sheet or Float Glass**

Shall be transparent flat glass that meets the requirements and tolerances of Fed. Specs. DD-G-451d, 6 mm (1/4 inch) thick, unless otherwise specified. Provide at windows where clear glass is indicated or specified.

##### **2.2.2. Tinted Float Glass**

Conforming to Fed. Specs. DD-G-451d, of high quality and effective in reducing glare and heat transmittance, 6 mm (1/4 inch) thick. Tint and shade will be with a light transmittance of approximately 50%. Provide at windows where tinted glass is indicated or specified.

##### **2.2.3. Tempered Glass (Clear and Tinted)**

Tempered glass shall be 12 mm (1/2 inch) thick, reflective glass and clear glass as indicated on the drawings.

##### **2.2.4. Mirror Glass**

Shall be of high quality float glass free from imperfections and impurities, 6 mm (1/4 inch) thick. Silvering shall be performed by modern continuous operation



under controlled conditions. The coating shall be of pure silver and of adequate thickness to provide reflectivity of 83% or more of incident light, and shall be without pinholes or other defects visible to the naked eye.

#### 2.2.5. **Reflective Glass / Reflective Blue**

Shall be 12 mm (1/2 inch) thick, unless otherwise specified. Shade shall be selected by the Architect.

#### 2.2.6. **Wired Glass**

Shall meet the requirements of Underwriters Laboratories as a fire retardant material. Wire glass shall also conform to the requirements of the National Fire Protection Association (NFPA) 257 "Standard for Fire Test of Window Assemblies". Wire glass shall be clear, polished, diamond mesh and a minimum of 6 mm (1/4 inch) thick. Provide wire glass to glass areas wherever safety requirements from fire are necessary.

#### 2.2.7. **Low-E**

Shall conform to the Philippine green building code and other reference codes.

#### 2.2.8. **Double Glazed**

Shall conform to the Philippine Green Building Code and other reference codes.

### 2.2. **SETTING MATERIALS**

Provide setting materials of the types required for the applicable setting method, unless specified otherwise herein. Do not use metal sash putty, non-skinning compound, nonresident preformed sealers, or impregnated preformed gaskets. Materials exposed to view and unpainted shall be gray or neutral color.

#### 2.2.1. **Elastomeric Sealant**

Use a channel or stop glazing metal sash. Sealant shall be chemically compatible with setting blocks, edge blocks, and sealing tapes. Color of sealant shall be as selected.

#### 2.2.2. **Preformed Channels**

Neoprene, vinyl or rubber, NAAMM SG-1, or any recommended product by the glass manufacturer for the particular condition.

#### 2.2.3. **Sealing Tapes**

Preformed, semisolid, polymeric based material of proper size and compressibility for the particular condition. Use only where glazing rabbet is designed for tape recommended by the glass or sealant manufacturer. Provide spacer shims for use with compressible tapes.

#### 2.2.4. **Setting Blocks and Edge Blocks**

Lead or neoprene of 70 to 90 Shore "A" durometer hardness, chemically compatible with sealant used, and of sizes recommended by the glass manufacturer.

#### 2.2.5. **Accessories**

As required to provide a complete installation, including glazing point clips shams, angles, beads, and spacer strips. Provide non-corroding metal accessories. Provide primers sealers and cleaners as recommended by the glass and sealant manufacturers.

## PART 3 INSTALLATION



### **3.1. PRECAUTIONS AND PROCEDURES**

Installation shall be according to the manufacturer's guide or manual. Determine the sizes to provide the required edge clearances by measuring the actual opening to receive the glass. Grind smooth all edges of glass that will be exposed in finish work. Leave labels in place until the installation is approved. Securely fix movable items or keep in a closed and locked position until the glazing compound has thoroughly set.

### **3.2. GLASS SETTING**

Items to be glazed shall be either shop or field glazed using glass of the quality and thickness specified or indicated. Preparation and glazing, unless otherwise specified or approved. Aluminum windows may be glazed in conformance with one of the glazing methods described in the standards under which they are produced, except that face puttying with no bedding will not be permitted. Handle and install glazing materials in accordance with the manufacturer's instructions. Use beads or stops, which are furnished with the items to be glazed to secure the glass in place.

### **3.3. CLEANING**

Thoroughly clean glass surfaces and removes labels, paint spots, putty and other defacement. Glass shall be clean at the time the work is accepted.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 1. Homogeneous Ceramic Tiles

30 JUNE 2023

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ArJMM/ REV. 00

Revision	Date	Description



## HOMOGENEOUS CERAMIC TILES

### **PART 1 GENERAL**

#### **1.1. SCOPE**

1.1.1. The work includes the supply and furnishing of materials and performing labor necessary for the complete installation of all ceramic tile-work as shown or indicated on drawings and as specified herein.

#### **1.2. SUBMITTALS**

1.2.1. **Samples:** Submit samples of each type of floor and wall tiles including all required beads, molding, and trim units.

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Deliver materials (except bulk materials) in manufacturer's unopened containers fully identified with manufacturer's name, trade name, type, class, grade, size and color.

1.3.2. Store materials in unopened containers off ground and under cover, protected from damage.

#### **1.4. EXTRA STOCK**

1.4.1. Supply an extra two percent of each type of tile used in clean, marked cartons for emergency use.

### **PART 2 PRODUCTS**

#### **2.1. SUPPLIERS**

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

#### **2.2. MATERIALS**

2.2.1. All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the Architect upon submission of samples. Samples of all tiles shall be submitted to the Architect for approval before placing orders. All tiles shall be delivered to the jobsite in unopened grade-sealed containers.

##### **2.2.1. Colors and Patterns**

Tile Colors and patterns shall be selected by the architect and approved by the DSWD. Colors and patterns by reference to manufacturer's name and designations are for color and pattern identification only and are not intended to limit selection of other manufacturer's products with similar color and patterns.

##### **2.2.2. Floor Tile**

###### *2.2.2.1. Unglazed Ceramic Tile*

For floors, shall be vitrified floor tiles, porcelain or natural clay with cushioned edges. Sizes and colors shall be as indicated on drawings.

##### **2.2.3. Wall Tile**

###### *2.2.3.1. Glazed Ceramic Tile*



Bright or matte finish with cushioned edges. Sizes and colors shall be as indicated on drawings.

2.2.4. **Hydrated Lime:** ASTM C206, Type S; or ASTM C207, Type S.

2.2.5. **Sand:** ASTM C144, for mortar setting beds, grouting and pointing.

2.2.6. **Water:** Clean, potable.

2.2.7. **Portland cement:** ASTM C1500, Type I, white for grout, gray for other uses.

## **PART 3 EXECUTION**

### **3.1. INSTALLATION**

3.1.1. Do not start tile work until roughing-in for plumbing and electrical work has been completed and tested. All surfaces to receive tile-work shall be cleaned of loose materials and given proper surface preparation prior to ceramic tile-work. Prepare and install in accordance with ANSI A108.1 and ANSI A108.5.

#### **3.1.2. Application of Scratch Coat**

3.1.2.1. Thoroughly dampen, but not saturate, surfaces of masonry or concrete walls before applying the scratch coat. Make surface areas appear slightly damp. Allow no free water on the surface.

3.1.2.2. On masonry, first apply a thin coat with great pressure, then bring it out sufficiently to compensate for the major irregularities on the masonry surfaces to a thickness of not less than 6 mm at any point.

3.1.2.3. Evenly rake scratch coats, but not dash coats, to provide a good mechanical key for subsequent courses before the mortar has fully hardened.

3.1.2.4. On surfaces not sufficiently rough to provide a good mechanical key, dash on the first coat with a whisk by broom or fiber brush using a strong whipping motion. Do not trowel or otherwise disturb mortar applied by dashing until it is hardened.

#### **3.1.3. Floor Tile Installation on Mortar Bed**

3.1.3.1. Before spreading the setting bed, establish lines of borders and center the fieldwork in both directions to permit the pattern to be laid with a minimum of cut tiles.

3.1.3.2. Clean concrete subfloor then moisture but not soak. Afterwards sprinkle dry cement over the surface and spread the mortar on the setting bed.

3.1.3.3. Mix mortar 1 part Portland cement to 2 parts sand. Tamp to assure good bond over the entire area and screed to provide a smooth and level bed at proper height and slope.

3.1.3.4. Pitch floor to drain as required.

3.1.3.5. After setting the bed has set sufficiently to be worked over, sprinkle dry cement over the surface and lay tile.

3.1.3.6. Keep the joints parallel and straight over the entire area by using straight edges.

3.1.3.7. Tamp the tile solidly onto the bed, using wood blocks of size to ensure solid bedding free from depressions.

3.1.3.8. Lay tiles from center outward and make adjustments at walls.

#### **3.1.4. Wall Tile Installation on Mortar Bed**



3.1.4.1. Before application of the mortar bed, dampen the surface of the scratch coat evenly to obtain a uniform section.

3.1.4.2. Use temporary or spot grounds to control the thickness of the mortar bed. Fill out the mortar bed even with the grounds and rod it to a true plane.

3.1.4.3. Apply the mortar bed over an area no greater than can be covered with tile while the coat is still plastic.

3.1.4.4. Allow no single applications of mortar to 19 mm thick.

3.1.4.5. Completely immerse wall tile in clean water and soak it at least ½ hour. After removal, stack tile on edge long enough to drain off excess water. Re-soak and drain individual tiles then dry along edges. Allow no moisture to remain on the back of tile during setting.

3.1.4.6. Apply a bond coat 0.8 mm thick to the plastic setting bed or to the back of each sheet or tile.

3.1.4.7. Press tile firmly into the bed and beat into place within 1 hour.

3.1.4.8. Lay tile field in rectangular block areas not exceeding 600 mm x 600 mm. cut the setting bed through its entire depth along the edges of each block area after placement and before subsequent blocks are installed.

### 3.1.5. Grouting

3.1.5.1. Within 1 hour after installation of tile, remove strings from string-set tile and wet the faces of face-mounted tile and remove the paper and glue. Avoid using excess water. Adjust any tile that is out of alignment.

3.1.5.1.1. After the tile has sufficiently set, force a maximum of grout into joints by trowel, brush or finger application.

3.1.5.1.2. Before grout sets, strike or tool the joints of cushion-edge tile to the depth of the cushion.

3.1.5.1.3. Fill all joints of square-edged tile flush with the surface of the tile. Fill all gaps or sips.

3.1.5.1.4. During grouting clean all excess grout off with clean burlap, other cloth or sponges.

## 3.2. CLEANING

3.2.1. Sponge and wash tile thoroughly with clean water after the grout has stiffened. Then clean by rubbing with damp cloth or sponges and polish clean with dry cloth.

## 3.3. PROTECTION

3.3.1. Cover finished tile floors with clean 13.6 kg. Natural Kraft paper before permitting foot traffic. Place board walkways on floors that are to be continuously used as passageways by workers. Protect tiled corners external angles, with board corner strips in areas used as passageways by workers.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 3. Resilient Flooring

30 JUNE 2023

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ArGNR/ArJMM/REV. 00

Revision	Date	Description





## RESILIENT FLOORING

### PART 1. GENERAL

#### 1.1. SCOPE

This specification covers the furnishing of materials and labor necessary to complete the installation of all vinyl flooring and base as shown in drawings and finish schedule and as specified herein.

#### 1.2. SUBMITTALS

##### 1.2.3. Colors and Patterns

1.2.3.1. One (1) sample of each color and pattern of each of the following items:

1.2.3.1.1. Floor tile

1.2.3.1.2. Wall base

1.2.3.2. Where colors and patterns are not indicated, submit not less than 3 different samples of the manufacturer's standard colors and patterns for selection by the Architect and/or DSWD.

#### 1.3. DELIVERY AND STORAGE

1.3.1. Deliver materials to the job in the manufacturer's original unopened containers with the brands, names, and production runs clearly marked thereon. Handle materials carefully and store them in their original containers at not less than 21 degrees C for at least 48 hours before work is started. Do not open containers until inspected and accepted.

#### 1.4 ENVIRONMENTAL CONDITIONS

1.4.1. Maintain spaces in which flooring work is to be performed at not less than 18 degrees C at the floor level for at least 48 hours prior to starting the work, during the time work is performed, and for at least 48 hours after the work is completed. Maintain a minimum temperature of 12 degrees C thereafter. Provide adequate ventilation to remove moisture and fumes from the area.

### PART 2 PRODUCTS

#### 2.1. MATERIALS

2.1.1. Resilient floors shall conform to the respective specifications and standards and to the requirements specified herein.

2.1.1.1. **Color and Pattern:** The color and pattern of tile shall be uniformly distributed throughout the thickness of the tile. Resilient flooring materials of the same type, pattern, and color shall be of the same production run and shall be so marked. Variations in shades and off-pattern matches between containers will not be acceptable. Flooring in any one continuous area or that used in replacement of damaged flooring in a continuous area shall be from the same lot and have the same shade and pattern.

2.1.1.2. **Resilient Composition Tile:**

2.1.2.1. *Floor Tile.* Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers will be approved by the architect.



2.1.2.2. **Leveling compounds, underlayment, and patching compounds.** Leveling compounds, underlayment, and patching compounds as recommended or approved by flooring manufacturers.

2.1.2.3 **Accessories.** Accessories shall be standard products of the flooring manufacturer.

## **PART 3 EXECUTION**

### **3.1. CONDITION OF SURFACES**

3.1.1. The flooring shall not be installed on surfaces that are unsuitable and will prevent a proper installation. Floor surfaces that are to receive flooring shall be clean, thoroughly dry, smooth, firm and sound, and free from oil, paint, wax, dirt, and any other damaging material.

3.1.1.1. Prepare substrates according to manufacturer's written instructions to ensure adhesion of floor coverings.

3.1.1.2. Concrete Substrates: Prepare according to ASTM F 710.

3.1.1.2.1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

3.1.1.2.2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by the manufacturer. Do not use solvents.

3.1.1.2.3. Alkalinity and Adhesion Testing: Perform tests recommended by the manufacturer. Proceed with installation only after substrates pass testing.

3.1.1.2.4. Moisture Testing: Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing.

3.1.1.2.4.1. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m in 24 hours.

3.1.1.2.4.2. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.

3.1.1.3. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

3.1.1.4. Do not install floor coverings until they are the same temperature as space where they are to be installed.

3.1.1.4.1. Move floor coverings and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

3.1.1.5. Sweep and vacuum clean substrates to be covered by floor coverings immediately before installation.

### **3.1.2. Preparation of Concrete Floor Surfaces**

Grind all ridges and other uneven surfaces smooth. Concrete curing compounds, other than the type that does not adversely affect adhesive, shall be entirely removed from the slabs. Cut out and fill cracks with 1.5mm wide and wider with a crack filler as specified for this application.



Provide latex underlayment to fill the remaining holes, cracks, and depressions, and for smoothing, leveling, and feather edging the concrete. Remove loose particles, vacuum chalky, dusty surfaces and prime the cleaned surfaces if recommended by the flooring manufacturer.

### 3.1.3. Moisture Test for Concrete Floors

As recommended by the floor covering manufacturer.

## 3.2. APPLICATION

3.2.1. Install flooring after work of other trades that might damage flooring has been completed. Apply flooring and accessories in accordance with the manufacturer's installation procedure. Work shall be performed by workmen experienced in the application of such flooring.

3.2.2. Detailed requirements are as follows:

### 3.2.2.1. Adhesives

Apply adhesives in accordance with the adhesive manufacturer's printed directions, unless specified or directed otherwise. Smoking, the use of open flames and other immediate sources of ignition are strictly prohibited in the area where solvent-containing adhesives are being used or spread. Post conspicuous signs reading "NO SMOKING OR OPEN FLAME" in the area of spread adhesive.

### 3.2.2.2. Flooring

Apply tile flooring in the patterns indicated. Start in the center of the room or area, and work from the center towards the edges. Keep tile line and Joint Square, symmetrical, tight, and vent; and keep each floor in true, level plans, except where indicated as sloped. Vary edge width as necessary to maintain full-size tiles in the field but no edge tile shall be less than one-half (1/2) the field tile size, except where irregular shaped rooms make it impossible.

### 3.2.2.3. Cutting

Cut flooring to and fit around all permanent fixtures, built-in furniture and cabinets, pipes and outlets. Cut edges, fit, and scribed to walls and partitions after field flooring has been applied.

### 3.2.2.4. Edge Strips

Provide edging strips where flooring terminates at points higher than the contiguous finished flooring, except at doorways where the thresholds are provided. Secure plastic strips with adhesives.

### 3.2.2.5. Application of Resilient Tile

Prime concrete slabs in contact with the ground with cut-back type primer if recommended by the flooring manufacturer. Work primer with a non-absorptive base completely into the surface. Allow the primer to become roughly dry before applying adhesive. Apply only cut-back adhesive to primed concrete surfaces.

## 3.3. CLEANING AND PROTECTION

3.3.1. Remove all excessive adhesives from the surface of the flooring and the cove.

3.3.2. Perform initial maintenance on the completed installation as recommended by the flooring manufacturer.

3.3.3. Protect the flooring as recommended by the flooring manufacturer from damage by other trades and by the placement of fixtures and furnishings.



### 3.4. WARRANTY

3.4.1. Manufacturer shall warrant that its conductive vinyl tile is free from defects in materials and workmanship for a period of one year and that it will meet the electrical resistance requirements of NFPA Standard 99 for a period of five (5) years.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 5. *Paints & Coats*

30 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## PAINTS AND COATINGS

### **PART 1 GENERAL**

#### **1.1. RELATED DOCUMENTS**

1.1.1. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### **1.2. SUMMARY**

1.2.1. This Section includes the following:

1.2.1.1. Surface preparation.

1.2.1.2. Field application of paints, stains, varnishes, and other coatings.

#### **1.3. REFERENCES**

1.3.1. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.

1.3.2. ASTM D 4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.

1.3.3. ASTM D3960 “ Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings”.

1.3.4. ASTM D2486-79 “ Standard Test Method for Scrub Resistance of Wall Paints”.

1.3.5. ASTM E84-01 “ Standard Test Method For Surface Burning Characteristics of Building Materials.”

1.3.6. ASTM D1653 “Test Methods for Water Vapour Transmission of Organic Coating Films”.

1.3.7. PDCA (MAN) - Architectural Specification Manual; Painting and Decorating Contractors of America.

1.3.8. SSPC (PM1) - Steel Structures Painting Manual, Vol. 1, Good Painting Practice; The Society for Protective Coatings.

1.3.9. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications, the Society for Protective Coatings.

1.3.10. National Building Code of the Philippines

1.3.11. Local Rules and Regulation

1.3.12. Philippine Green Building Code

#### **1.4. DEFINITIONS**

1.4.1. Conform to ASTM D 16 for interpretation of terms used in this section.

#### **1.5. SUBMITTALS**

1.5.1. **Product Data:** Provide data on all finishing products.

1.5.2. **Samples for Selection:** Submit two paper chip samples, 300 x 300 mm in size illustrating range of colors and textures available for each surface finishing product scheduled.



1.5.3. **Samples for Review:** Submit two painted samples, illustrating selected colors and textures for each color and system selected with specified coats cascaded. Submit on actual receiving substrate, 600 x 600 mm in size.

1.5.4. **Manufacturer's Instructions:** Indicate special surface preparation procedures, substrate conditions requiring special attention, and recommended area coverage for specified product.

1.5.5. At project completion, provide an itemized list complete with manufacturer, paint type and color-coding for all colors used for DSWD/BGMS's later use in maintenance.

1.5.6. **Maintenance Data:** Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

## 1.6. REGULATORY REQUIREMENTS

1.6.1. Conform to applicable codes, including local rules and regulations, for flame and smoke rating requirements for products and finishes, subject to acceptance by the Local Fire Department.

## 1.7. MOCK-UP

1.7.1. Provide panel, 2440 mm long by 1220 wide, illustrating special coating color, texture, and finish.

1.7.2. Provide door and frame assembly illustrating paint, stain and varnish coating color, texture, and finish.

1.7.3. For the sky ceiling, 3000 (H) x 3000(W) x 5000 projection covering different eventual substrates.

1.7.4. Locate where directed

1.7.5. Mock-up may or may not remain as part of the Work

## 1.8. DELIVERY, STORAGE, AND PROTECTION

1.8.1. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

1.8.2. **Container Label:** Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

1.8.3. **Paint Materials:** Store at minimum ambient temperature of 7 degrees C and a maximum of 32 degrees C, in ventilated area, and as required by manufacturer's instructions.

## 1.9. ENVIRONMENTAL REQUIREMENTS

1.9.1. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

1.9.2. Do not apply exterior coatings during rain, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

1.9.3. Apply paint only on dry, clean, properly cured and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of the finished surface.

1.9.4. Minimum Application Temperatures for Latex Paints: 7 degrees C for interiors; 10 degrees C for exterior; unless required otherwise by manufacturer's instructions.



1.9.5. Minimum Application Temperature for Varnish Finishes: 18 degrees C for interior or exterior, unless required otherwise by manufacturer's instructions.

1.9.6. Provide lighting level of 860 lx measured mid-height at substrate surface.

## **1.10. EXTRA MATERIALS**

1.10.1. Supply 3 L of each color; store where directed.

1.10.2. Label each container with color in addition to the manufacturer's label.

## **PART 2 PRODUCTS**

### **2.1. MANUFACTURERS**

2.1.1. As specified and subject to Compliance with Local Regulation, Fire Code and Green Building Code

2.1.2. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre approved by the architect.

### **2.2. PAINTS AND COATINGS – PERFORMANCE**

Paint materials including primers, colourants, pigments, tints, and bases shall be free (absolute zero % content, except for trace amounts) of lead, cadmium, hexavalent chromium, or mercury. Formulate paint materials, at the factory, with anti-mildew agents so that colours are not affected; incorporated into the formulation. In addition, include carefully balanced ultraviolet inhibitors for exterior material.

### **2.3. PAINTS AND COATINGS – GENERAL**

2.3.1. Paints and Coatings: Ready mixed, except field-catalyzed coatings. Prepare pigments:

2.3.1.1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.

2.3.1.2. For good flow and brushing properties.

2.3.1.3. Capable of drying or curing free of streaks or sags.

### **2.4. PAINT SYSTEMS – EXTERIOR**

#### **2.4.1. Wood, Opaque, Alkyd, 3 Coat:**

2.4.1.1. One coat of alkyd primer sealer.

2.4.1.2. Gloss: Two coats of alkyd enamel.

#### **2.4.2. Wood, Transparent, Stain:**

2.4.2.1. Two coats of stain.

#### **2.4.3. Concrete/Masonry/Cement Plaster, Opaque, Alkyd modified, vinyl-acrylic latex, 3 coat:**

2.4.3.1. One coat of water repellent primer sealer.

2.4.3.2. Flat: Two coats of alkyd modified, vinyl-acrylic latex enamel.

#### **2.4.4. Gypsum Board and Plaster, Opaque, Latex, 3 Coat:**

2.4.4.1. One coat of latex primer sealer.

2.4.4.2. Flat: Two coats of latex.



**2.4.5. Ferrous Metals, Unprimed, Latex, 3 Coat:**

2.4.5.1. One coat of latex primer.

2.4.5.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.4.6. Ferrous Metals, Primed, Latex, 2 Coat:**

2.4.6.1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.

2.4.6.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.4.7. Galvanized Metals, Latex, 3 Coat:**

2.4.7.1. One coat galvanized primer.

2.4.7.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.4.8. Paint MaE-OP-3A - Aluminum, Unprimed, Alkyd, 3 Coat:**

2.4.8.1. One coat etching primer.

2.4.8.2. Semi-gloss: Two coats of alkyd enamel.

**2.4.9. Pavement Marking Paint:**

2.4.9.1. Two coats of chlorinated rubber base traffic lane paint; yellow or white as indicated on drawings.

**2.5. PAINT SYSTEMS – INTERIOR**

2.5.1. **Wood**, as indicated in Interior Design Documents.

**2.5.2. Wood, Opaque, Latex, 3 Coat:**

2.5.2.1. One coat of latex primer sealer.

2.5.2.2. Semi-gloss: Two coats of latex enamel.

**2.5.3. Wood - Cabinet Interior, Opaque, Latex, 2 Coat:**

2.5.3.1. One coat of latex primer sealer.

2.5.3.2. Semi-gloss: One coat of vinyl-acrylic latex enamel.

**2.5.4. Wood, Transparent, Stain:**

2.5.4.1. Filler coat (for open grained wood only).

2.5.4.2. Two coats of stain; polyurethane, non-yellowing.

2.5.4.3. One coat sealer.

2.5.4.4. Gloss: One coat of polyurethane, non-yellowing.

2.5.4.5. Satin: One coat of; polyurethane, non-yellowing

**2.5.5. Concrete/Masonry, Opaque, Latex, 2 Coat:**

2.5.5.1. One coat of block filler.

2.5.5.2. Flat: One coat of vinyl-acrylic latex enamel.

2.5.6. **Corrugated Metal**: Special finish as indicated in Design Documents.

**2.5.7. Ferrous Metals, Unprimed, Alkyd / Latex, 3 Coat:**



2.5.7.1. One coat of alkyd primer.

2.5.7.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.5.8. Ferrous Metals, Primed, Latex, 2 Coat:**

2.5.8.1. Touch-up with alkyd primer.

2.5.8.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.5.9. Galvanized Metals, Latex, 3 Coat:**

2.5.9.1. One coat galvanized primer.

2.5.9.2. Semi-gloss: Two coats of vinyl-acrylic latex enamel.

**2.5.10. Aluminum, Unprimed, Alkyd, 3 Coat:**

2.5.10.1. One coat etching primer.

2.5.10.2. Semi-gloss: Two coats of alkyd enamel.

**2.6. ACCESSORY MATERIALS**

2.6.1. **Accessory Materials:** Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.

**PART 3 EXECUTION**

**3.1. EXAMINATION**

3.1.1. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.

3.1.2. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.1.3. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:

3.1.3.1. Plaster and Gypsum Wallboard: 12 percent.

3.1.3.2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.

3.1.3.3. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.

3.1.3.4. Exterior Wood: 15 percent, measured in accordance with ASTM D 4442.

3.1.3.5. Concrete Floors: 8 percent.

3.1.3.6. Alert the Architect of any discrepancies, prior to commencing the Work of this section.

3.1.3.7. Coordinate the Work of this section with applicable trades.

**3.2. PREPARATION**

3.2.1. **Surface Appurtenances:** Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

3.2.2. **Surfaces:** Correct defects and clean surfaces which affect work of this section. No painting work shall commence until all such adverse conditions or defects have been corrected to acceptable level.

3.2.3. **Marks:** Seal with shellac those which may bleed through surface finishes.



- 3.2.4. **Impervious Surfaces:** Remove mildew by scrubbing with solution of tetra- sodium phosphate and bleach. Rinse with clean water and allow the surface to dry.
- 3.2.5. **Concrete and Unit Masonry Surfaces to be Painted:** Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of trisodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- 3.2.6. **Gypsum Board Surfaces to be Painted:** Fill minor defects with filler compound. Spot prime defects after repair.
- 3.2.7. **Plaster Surfaces to be Painted:** Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- 3.2.8. **Asphalt, Creosote, or Bituminous Surfaces to be Painted:** Remove foreign particles to permit adhesion of finishing materials. Apply latex based sealer or primer.
- 3.2.9. **Insulated Coverings to be Painted:** Remove dirt, grease, and oil from canvas and cotton.
- 3.2.10. **Concrete Floors to be Painted:** Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- 3.2.11. **Aluminum Surfaces to be Painted:** Remove surface contamination by steam or high-pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- 3.2.12. **Galvanized Surfaces to be Painted:** Remove surface contamination and oils and wash with solvent. Apply a coat of etching primer.
- 3.2.13. **Uncoated Steel and Iron Surfaces to be Painted:** Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint the entire surface; spot prime after repairs.
- 3.2.14. **Shop-Primed Steel Surfaces to be Finish Painted:** Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re- prime entire shop-primed item.
- 3.2.15. **Interior Wood Items to Receive Opaque Finish:** Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after the primer has dried; sand between coats. Back prime concealed surfaces before installation.
- 3.2.16. **Interior Wood Items to Receive Transparent Finish:** Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after the sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
- 3.2.17. **Exterior Wood to Receive Opaque Finish:** Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after the prime coat has been applied. Back prime concealed surfaces before installation.
- 3.2.18. **Exterior Wood to Receive Transparent Finish:** Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior calking compound after sealer has been applied. Prime concealed surfaces.
- 3.2.19. **Wood Doors to be Field-Finished:** Seal wood door top and bottom edge surfaces with clear sealer.



3.2.20. **Metal Doors to be Painted:** Prime metal door top and bottom edge surfaces.

3.2.21. Protect all interior surfaces and areas, including glass, aluminum surfaces etc. and equipment and any labels and signage from the painting operations and damage by drop cloths, shield masking, templates, or other suitable protective means and make good any damage caused by failure to provide protection.

3.2.22. Erect boundaries or screens and post signs to warn off or limit or direct traffic away or around the work area as required.

### 3.3. APPLICATION

3.3.1. Apply products in accordance with manufacturer's instructions.

3.3.2. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

3.3.3. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before the next coat is applied.

3.3.4. Apply each coat to a uniform appearance. Apply each coat of paint slightly darker than the preceding coat unless otherwise approved.

3.3.5. Sand wood surfaces lightly between coats to achieve required finish.

3.3.6. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying the next coat.

3.3.7. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from the surface.

### 3.4. FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

3.4.1. Refer to MEP specifications of color coding of equipment, duct work, piping, and conduit or as indicated otherwise.

3.4.2. Paint shop-primed equipment, where indicated.

3.4.3. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

3.4.4. Finish equipment, piping, conduit, and exposed ductwork in finished areas in colors according to the color schedule.

3.4.5. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### 3.5. FIELD QUALITY CONTROL

3.5.1. Inspect and test questionable coated areas in accordance with the Architect's instructions.

### 3.6. CLEANING

3.6.1. Collect waste material which may constitute a fire hazard, place it in closed metal containers, and remove daily from the site.

3.6.2. Remove all paint where spilled, splattered or spray as work progresses using means and materials that are detrimental to the affected surface.

### 3.7. SCHEDULE - SURFACES TO BE FINISHED

3.7.1. Do Not Paint or Finish the Following Items:

3.7.1.1. Items fully factory-finished unless specifically noted.



3.7.1.2. Fire rating labels, equipment serial number and capacity labels.

3.7.1.3. Stainless steel items.

3.7.2. Paint the surfaces described in PART 2, Paint Systems Articles.

3.7.3. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.

3.7.3.1. Paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, and hangers, brackets, collars and supports occurring in finished areas to match background surfaces, unless otherwise indicated.

3.7.3.2. Paint shop-primed items occurring in finished areas.

3.7.3.3. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.

3.7.3.4. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

3.7.4. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.

3.7.5. Finish surface as indicated in Design Documents.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 9 - "FINISHES"

### Section 7. Gypsum Board Assemblies

30 JUNE 2023

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Revision	Date	Description



## **GYPSUM BOARD ASSEMBLIES**

### **PART 1 GENERAL**

#### 1.1. Section includes:

- 1.1.1. Gypsum board and joint treatment products
- 1.1.2. Mold and Mildew-resistant gypsum board products
- 1.1.3. Fire-rated gypsum area separation walls
- 1.1.4. Gypsum shaft liner
- 1.1.5. Abuse-resistant gypsum board
- 1.1.6. Mold-resistant gypsum board
- 1.1.7. Sound dampening area separation walls
- 1.1.8. Gypsum soffit board
- 1.1.9. Gypsum sheathing board
- 1.1.10. Accessories for the installation and trimming of gypsum board partitions and ceilings

#### **1.2. RELATED SECTIONS**

- 1.2.1. Metal Framing
- 1.2.2. Access Panels and Frames
- 1.2.3. Plaster and Gypsum Board

#### **1.3. REFERENCES**

- 1.3.1. ASTM C 36 - Standard Specification for Gypsum Wallboard
- 1.3.2. ASTM C 79 - Standard Specification for Gypsum Sheathing Board
- 1.3.3. ASTM C 442 - Standard Specification for Gypsum Backing Board, Gypsum Coreboard
- 1.3.4. ASTM C 475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board
- 1.3.5. ASTM C 514 - Standard Specification for Nails for the Application of Gypsum Board
- 1.3.6. ASTM C 588 - Specification for Gypsum Base for Veneer Plasters
- 1.3.7. ASTM C 630 - Standard Specification for Water-Resistant Gypsum Backing Board
- 1.3.8. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
- 1.3.9. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board
- 1.3.10. ASTM C 931 - Standard Specification for Exterior Gypsum Soffit Board
- 1.3.11. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
- 1.3.12. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs



- 1.3.13. ASTM C 1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base
- 1.3.14. ASTM C 1280 - Standard Specification for Application of Gypsum Sheathing
- 1.3.15. ASTM C 1396 - Standard Specification for Gypsum Board
- 1.3.16. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- 1.3.17. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials
- 1.3.18. CAN/ULC-S101 - Standard Methods of Fire Endurance Tests of Building Construction and Materials
- 1.3.19. GA-214 - Recommended Levels of Gypsum Board Finish; Gypsum Association 09 21 16-3
- 1.3.20. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association
- 1.3.21. GA-231 - Assessing Water damage to Gypsum Board; Gypsum Association
- 1.3.22. GA-238 - Guidelines for the Prevention of Mold Growth on Gypsum Board; Gypsum Association
- 1.3.23. GA-253 - Recommended Specifications for the Application of Gypsum Sheathing; Gypsum Association
- 1.3.24. GA-600 - Fire Resistance Design Manual; Gypsum Association FF. GA-801 - Handling and Storage of Gypsum Panel Product; Gypsum Association
- 1.3.25. UL 263 - Standard for Fire Tests of Building Construction and Materials
- 1.3.26. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc. JJ. ULC (FRD) - Fire Resistance Directory; Underwriters' Laboratories of Canada

#### 1.4. PERFORMANCE REQUIREMENT

- 1.4.1. **Fire-Rated Assemblies:** Provide materials and construction identical to those tested in fire endurance rated assemblies by an independent testing agency acceptable to the authorities having jurisdiction.
- 1.4.2. **Sound-Rated Assemblies:** Provide materials and construction identical to those tested in STC/IIC-rated assemblies by an independent testing agency.

#### 1.5. SUBMITTALS

- 1.5.2. **Shop Drawings:** Indicate special details associated with fireproofing, acoustic seals, or curved sheet installations.

#### 1.6. QUALITY ASSURANCE

- 1.6.2. **Mock-Up:** Provide a mock-up of the area indicated on the Drawings for evaluation of surface preparation techniques and application workmanship.
  - 1.6.2.1. Locate finish areas designated by Architect.
  - 1.6.2.2. Do not proceed with remaining work until workmanship and finish is approved by the Architect.
  - 1.6.2.3. Refinish mock-up area as required to produce acceptable work.





## 1.7. DELIVERY, STORAGE AND HANDLING

- 1.7.1. Deliver and store gypsum board in accordance with prescribed manufacturer's instructions.
- 1.7.2. Ship materials with a weathertight cover and in manufacturer's original packages showing manufacturer's name and product brand name.
- 1.7.3. Remove plastic shipping bags upon receipt and storage. Failure to remove may increase the likelihood of mold growth.
- 1.7.4. Store materials inside and protected from damage by weather and direct sunlight. Stack flat; protect ends, edges, and faces of gypsum boards from damage. Protect steel studs and metal accessories from moisture.

## 1.8. PROJECT CONDITIONS

- 1.8.1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by the manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- 1.8.2. Do not install interior products until installation areas are enclosed and conditioned.
- 1.8.3. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

## PART 2 PRODUCTS

### 2.1. MANUFACTURERS; approved by the architect

### 2.2. PROJECT CONDITIONS

- 2.2.1. **Substitutions:** Not permitted.
- 2.2.2. Requests for substitutions will be pre-approved by the BGMS.

### 2.3. GYPSUM PRODUCTS, GENERAL

- 2.3.1. **Size:** Provide maximum lengths and widths available that will minimize joints in each area that correspond with the support system indicated.
- 2.3.2. **Regional Materials:** Provide a minimum 20 percent of building materials (by cost) that are regionally, extracted, processed and manufactured within a radius of 500 miles from Project.

### 2.4. INTERIOR GYPSUM MATERIAL

- 2.4.1. 16mm thick [unless otherwise indicated] Gypsum Board, taper-edge, with waterproof coating, clear coating, clear color or approved equivalent. Ceiling metal frame assemblies to be to be galvanized steel, gauge 24 thickness, or as indicated in the drawings; all accessories to the assembly to be as recommended by manufacturer.
- 2.4.2. **Fire-Rated Gypsum Board:** Gypsum core panel with glass fibers to enhance fire resistance of the core; surfaced with ivory-colored paper on front and strong liner paper on back; and complying with ASTM C 1396 Section 5 and ASTM C 36, Type X, "Premium".
  - 2.4.2.1. *Acceptable Product:* as approved by the architect.
  - 2.4.2.2. *Thickness:* 1/2 inch (12.7 mm), unless otherwise indicated
  - 2.4.2.3. *Thickness:* 5/8 inch (15.9 mm), unless otherwise indicated
  - 2.4.2.4. *Width:* 48 inches (1219 mm)
  - 2.4.2.5. *Length:* Use longest length available, avoiding unnecessary joints



## 2.5. GYPSUM SHEATHING AND SOFFIT PANELS

2.5.1. **Fire-Rated Exterior Gypsum Soffit Board:** Gypsum core soffit panel with additives to enhance fire-resistance and sag resistance of core; surfaced with paper on front and back; and complying with ASTM C 1396 Section 8 and ASTM C 931, Type X.

2.5.1.1. *Acceptable Product:* as approved by the architect.

2.5.1.2. *Thickness:* 5/8 inch (15.9 mm)

2.5.1.3. *Width:* 48 inches (1220 mm)

2.5.1.4. *Length:* Use longest length available, avoiding unnecessary joints

## 2.6. GYPSUM PLASTER BASE

2.6.1. **Fire-Rated Plaster Base:** Gypsum core lathing panel with additives to enhance fire resistance of core and surfaced with absorptive paper on front and long edges and complying with ASTM C 1396 Section 10 and ASTM C 588, Type X.

2.6.1.1. *Acceptable Product:* as approved by the architect.

2.6.1.2. *Thickness:* 5/8 inch (15.9 mm)

2.6.1.3. *Width:* 48 inches (1220 mm)

2.6.1.3.1. *Length:* Use longest length available, avoiding unnecessary joints

2.6.1.3.2. *Edges:* Tapered

## 2.7. GYPSUM JOINT TREATMENT AND FINISH PRODUCTS

2.7.1. **Joint Treatment Tape:** Complying with ASTM C 475 and GA-216

2.7.2. **Joint Compound:** Vinyl type premixed compound; complying with ASTM C 475; in acceptable product(s) approved by Architect.

2.7.3. **Joint Compound:** Setting type lightweight; job mixed chemical-hardening compound; off white color; complying with ASTM C 475; in acceptable product(s) approved by Architect.

2.7.4. **Joint Compound:** Level Five vinyl type premixed compound; off-white color or tinted gray color; complying with ASTM C 475 and fulfilling ASTM C 840; designed for joint finishing of Level Five gypsum board; in acceptable product(s) approved by Architect.

## 2.8. ACCESSORY MATERIALS

2.8.1. **Corner Bead:** Formed galvanized steel angle, min. base steel 0.014 in. thick, and complying with ASTM C 1047

2.8.2. **Casing Bead:** Formed galvanized steel trim, minimum base steel thickness of 0.014 inch (0.35 mm), complying with ASTM C 1047, type(s) as follows:

2.8.2.1. J-shaped U-bead, for face nailing and finishing with joint treatment

2.8.2.2. J-shaped U-bead, requiring no finishing

2.8.2.3. L-shaped, for application over edge and finishing with joint treatment

2.8.3. **Control Joint:** Extruded vinyl formed with V-shaped slot covered with removable flexible vinyl strip; complying with ASTM C 1047

2.8.4. **Control Joint:** Bent zinc sheet formed with V-shaped slot, covered with plastic tape, with perforated flanges; complying with ASTM C 1047



2.8.5. **Screws:** ASTM C 954 or ASTM C 1002 or both with heads, threads, points, and finish as recommended by panel manufacturer

2.8.6. **Nails:** ASTM C 514 with heads, lengths, configurations, and finish as recommended by panel manufacturer

2.8.7. **Acoustical Sealant:** Non Drying, non hardening, non skinning, nonstaining, nonbleeding, gunnable type as recommended by panel manufacturer

2.8.8. **Insulation:** ASTM C 665, Type I, mineral fiber (either glass, rock, or slag) insulation blankets without membrane facing

## **PART 3 EXECUTION**

### **3.1. EXAMINATION**

3.1.1. Verify site conditions are ready to receive work and framing and opening dimensions are as indicated on the Drawings.

3.1.2. If preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding.

### **3.2. PREPARATION**

3.2.1. Clean surfaces thoroughly prior to installation.

3.2.2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.2.3. Coordinate preparation of Level 5 gypsum board with manufacturer's requirements.

### **3.3. INSTALLATION**

3.3.1. **Application:** Apply and maintain conditions during installation in accordance with manufacturer's instructions and/or as follows:

3.3.1.1. Keep the gypsum board dry throughout the application.

3.3.1.2. Do not use gypsum board that has visible mold growth

3.3.1.3. Apply gypsum board on walls with a minimum 1/4 inch (6.4 mm) gap between the gypsum board and the floor.

3.3.1.4. Do not apply gypsum board over other building materials where conditions exist that are favorable to mold growth.

3.3.1.5. Maintain a sound weather-tight building envelope including, such elements as the roof, sealants, windows, etc.

3.3.1.6. Immediate and appropriate remediation measures must be taken as soon as water leaks or condensation sources are identified.

3.3.1.7. Provide routine cleaning and maintenance operations to prevent saturation of the gypsum board.

3.3.1.8. If a gypsum board is damaged by water, assess the need for replacement in accordance with GA-231.

3.3.2. Install accordance with the following:

3.3.2.1. *Metal Framing:* ASTM C 754.

3.3.2.2. *Gypsum Sheathing Board:* ASTM C 1280 and GA-253



3.3.2.3. *Fire-Resistant Construction*: GA 600.

3.3.2.4. *Gypsum Board and Joint Treatment*: ASTM C 840 and GA-214

3.3.2.5. Gypsum panel manufacturer's published recommendations.

3.3.3. **Finishing**: Tape, fill, sand and finish joints in accordance with ASTM C 840 and GA-214

3.3.3.1. *Level 1*: Plenums and service corridors.

3.3.3.2. *Level 2*: Water-resistant gypsum backing board indicated to receive tile.

3.3.3.3. *Level 3*: Gypsum board indicated to receive heavy or medium textured coatings and heavy-grade wall coverings.

3.3.3.4. *Level 4*: Gypsum board indicated to receive light textured coatings and light- grade wall coverings.

3.3.3.5. *Level 5*: All other gypsum boards.

3.3.3.6. *Level 5 Skim Coated Gypsum Wall Board*: Skim coat joints with Rapid Deco Joint compound specified.

### 3.4. PROTECTION

3.4.1. Protect work from damage and deterioration until the date of Substantial Completion.

3.4.2. Touch-up, repair or replace damaged products before Substantial Completion.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 10 - "SPECIALTIES"

### Section 1. Signages

30 JUNE 2023

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Revision	Date	Description



## **SIGNAGES**

### **PART 1 GENERAL**

#### **1.1. SCOPE**

1.1.1. Furnish materials and equipment and perform labor required to complete the installation of exterior/interior signages and digital print/ceramic art on ceramic board, at location indicated on the drawings.

#### **1.2. SUBMITTALS**

The following shall be submitted:

##### **1.2.1. Shop Drawings**

1.2.1.1. Drawings showing elevations of each type of sign, digital print and ceramic art (any applicable) on ceramic board; dimensions, details, and methods of mounting or anchoring; shape and thickness of materials; and details of construction. A schedule showing the location, each sign type, and message as well as digital print and ceramic art on ceramic board shall be included.

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Materials shall be wrapped for shipment and storage, delivered to the jobsite in manufacturer's original packaging, and stored in a clean, dry area in accordance with manufacturer's instructions.

#### **1.4. WARRANTY**

1.4.1. Manufacturer's standard performance guarantees or warranties that extend beyond a one year period shall be provided.

### **PART 2 PRODUCTS**

#### **2.1. MANUFACTURER**

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

#### **2.2. SIGNAGE**

2.2.1. Refer to the plans for the details and requirements.

### **PART 3 EXECUTION**

#### **3.1. INSTALLATION FOR SIGNAGES**

3.1.1. Installations shall be in accordance with the manufacturers guide. It should be free from exposed and unnecessary cuts, holes or blank plates, advertising labels, other than as particularly shown on the Drawings, specified herein or approved by the Architect.

3.1.3. Exposed surfaces shall be clean and free from dust, dirt, scratches, dents, broken parts or units, chips, cracks, misaligned or improperly fitted joints, stains, discoloration or other defects or damage.

3.1.3. Each unit shall be assembled tightly and rigidly, secured in place and free from unnecessary movement.



3.1.4. Each unit assembly shall be set straight, plumb, level, accurately positioned and spaced at locations required.

3.1.5. Signs or dimensional letters shall be installed in accordance with approved manufacturer's instructions at locations shown on the approved detail drawings.

**\*\*\* END OF SECTION \*\*\***



# ARCHITECTURAL SPECIFICATION

## DIVISION 10 - "SPECIALTIES"

### *Section 3. Toilet Compartments and Lactation Stations*

30 JUNE 2023

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## TOILET COMPARTMENTS & LACTATION STATIONS

### **PART 1 GENERAL**

#### **1.1. SCOPE**

1.1.1. Furnish and install toilet partitions as shown on drawings and as specified herein.

#### **1.2. SUBMITTALS**

##### **1.2.1. Shop Drawings**

1.2.1.1. Submit shop drawings indicating elevations of partitions, full scale sections, thickness and gauges of metal, fastenings, proposed method of anchoring, the size and spacing of anchors, details of construction, hardware, fittings, mountings, and other related items and installation details.

##### **1.2.2. Samples**

1.2.2.1. Submit one of each item of hardware, fittings, fastening, and each type of panel. The panel sample shall be cross-sectioned not less than 150 mm by 150 mm in size and shall show finish on base material and core of the panel.

##### **1.2.3. Manufacturer's Data**

1.2.3.1. Submit literature for each item of hardware, fitting, fastening and each type of panel, complete with description of materials, finishes, and anchoring devices, and appurtenances.

##### **1.2.4. Colors**

1.2.4.1. Submit one sample of each color of partition for verification that products match the color indicated. Where colors are not indicated, submit the manufacturer's standard color samples for selection by the Architects and approved by the DSWD.

#### **1.3. DELIVERY AND STORAGE**

1.3.1. Deliver materials to the site in original sealed containers or packages, bearing the manufacturer's name, brand designation, specification number, type, style and finish as applicable. Store and handle materials in a manner to protect them from damage.

### **PART 2 PRODUCTS**

#### **2.1. MANUFACTURER**

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

#### **2.2. MATERIALS**

2.2.1. Toilet compartments/cubicles - comprising panels, doors, and partitions/compartments (compact laminate phenolic board) including door frame system urinal divider, cubicle divider, hardware and accessories in nylon finish and all other incidentals to complete. Sizes, dimensions of doors, cubicles and dividers as shown on plans. Color shall be as selected by the Architect and approved by the DSWD.

#### **2.3. DOOR HARDWARE AND FIXING**

2.3.1. All pilaster shall rest on a polyamide adjustable foot and anchored to the divisional walls by black anodized "U" channel. The pilasters shall be finished with black anodized heavy duty



channel at the top rail. Fixing of the pilaster to the wall shall be done with black anodized heavy duty channel.

2.3.2. Each cubicle shall be equipped with nylon steel privacy thumb turn, nylon door knob, nylon coat hook, steel hinges with polyamide cover. All the accessories shall be of heat chemical and bacteria resistance nylon.

## **2.4. FINISH**

2.4.1. All edges of doors and pilasters are chamfered and finished without any metal trimming.

## **PART 3 EXECUTION**

### **3.1. INSTALLATION**

3.1.1. Installation of toilet partitions and urinal screens shall be in accordance with approved shop drawings and manufacturer's installation and directions.

**\*\*\* END OF SECTION \*\*\***



# ELECTRICAL SPECIFICATION

## DIVISION 16 - "ELECTRICAL"

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## **ELECTRICAL SPECIFICATIONS**

### **PART 1 GENERAL**

#### **1.1. GENERAL DESCRIPTION**

1.1.1. The work to be done under this divisions of the Specifications consist of the fabrication, furnishing delivery and installation, complete in all details of the Electrical Work, at the subject premises and all work materials incidental to the proper completion of the installation, except those portions of the work which are expressly stated to be done by others. All work shall be done in accordance with the governing Codes and Regulations and with the Specifications, except where the same shall conflict with such codes etc., which latter shall then govern. The requirements with regards to materials and workmanship specify the required standard for the furnishing of all labor, materials and appliances necessary for the complete installation of the work specified herein and indicated on the drawings. The Specifications are intended to provide a broad outline of the requirement and are not intended to include all details of design and construction.

#### **1.1.2. LAWS/CODES and REGULATIONS:**

1.1.2.1. The work under this division shall be executed in accordance with the latest requirements of the following:

1.1.2.1.1. The National Building Code of the Philippines

1.1.2.1.2. Philippine Electrical Code Laws, ordinances, and regulations of the locality having jurisdiction over the project.

1.1.2.1.3. Power and telephone utility companies

1.1.2.1.4. UAP Doc. 301

1.1.2.2. The requirements of the above-mentioned governing laws/codes and the requirements of the companies having involvement/participation are hereby made part of these Specifications and the contractor is required to comply with the same. This does not relieve the contractor from complying with requirements of specifications or drawings in excess of above laws and ordinances, codes and requirements which are not prohibited by the same.

#### **1.1.3. GUARANTEE**

1.1.3.1. The contractor shall guarantee that the electrical system is free from all grounds and defective materials and workmanship for a period of one (1) year from the date of acceptance of the work. All defects arising within the guarantee period shall be reminded by the contractor at his own expense. The contractor shall indemnify and save harmless procuring entities from and against all claims, suits, actions, or liabilities for damages arising from injuries, disabilities or loss of life to persons or damage to public or private properties resulting from fault or any act of contractor or his representative in the execution of this work. The partial acceptance of the work for the purpose of making partial payments, based on the estimated cost satisfactorily completed by the contractor, shall not be considered as final acceptance of that portion of the work.

#### **1.1.4. DRAWINGS & SPECIFICATIONS**

1.1.4.1. The electrical plans, which constitute an integral part of these Specifications, shall serve as the working drawings. The plans indicate the general layout and arrangement of the complete electrical system and other works.



1.1.4.2. The drawings and specifications are meant specifically to be complementary to each other and where it is called for by one shall be binding as if called for by both. Anything which is basically required to complete the installation for proper operation but not expressly mentioned on the drawings and/or specifications shall be furnished and installed by the contractor at no extra cost to the procuring entity as though specifically stipulated or shown in both.

1.1.4.3. Procuring Entity shall have the final decision on any apparent conflict between the drawings and specifications or on any under and controversial point in either or both.

1.1.4.4. All dimensions and locations shown on the plans are approximate and shall be verified in the field, as actual locations, distances, and levels are governed by actual conditions.

## 1.2. SCOPE OF WORK

1.2.1. The work to be done under this division shall include the furnishing of all tools, labor, supervision, equipment, fixtures and all necessary materials, each complete and in proper working condition unless one or other is specifically excluded or stated otherwise in this specification but not limited to the following items of works.

1.2.1.1. All works and material for a complete lighting and power systems including cables and conduits, circuit breakers, panelboard and connection to all lighting fixtures and power outlets, motor appliances, switches, supports and accessories.

1.2.1.2. All excavation works, backfilling, dewatering, removal of surplus earth, preparation of formworks and pouring of concrete envelopes as indicated on the drawings or as required to complete the installation.

1.2.1.3. All steel support for conduits, wires, panelboard, boxes, lighting fixtures, etc. as indicated or as required to complete the installation.

1.2.1.4. A complete grounding system as required by the governing codes.

1.2.1.5. A complete testing of all electrical systems.

1.2.1.6. Where material is furnished and supplied by the Engineer, the Contractor shall receive, unload, handle and transport to the site, assemble and install completely. This Contractor shall be responsible for safekeeping and warehousing of such materials/equipment from the time of his acceptance.

1.2.1.7. All items incidentals to and or required for the proper completion such as painting of boxes, conduits and the likes.

1.2.1.8. Coordination with other trade Contractors.

1.2.1.9. Coordination with other companies/offices including handling of all material related to material testing and application of electrical permits.

1.2.1.10. Preparation of necessary shop drawings required for the proper execution of the works subject to the approval of the Engineer.

1.2.1.11. Preparation of "As-Built" drawings.

1.2.2. Work Not Included Under Electrical Works The work excludes the furnishing of the following:

1.2.2.1. Supply and installation of all motors, pumps and their associated control equipment.



1.2.2.1.1. All electrical system installation beyond the motor branch circuit breakers.

1.2.2.1.2. All motor controllers as indicated to be supplied with equipment.

1.2.2.1.3. Structural foundation of the above.

1.2.3. If any item of works or material has been omitted which are necessary for the completion of the Electrical Work as outlined herein before, then such items shall be hereby included in this section of work.

### **1.3. PROCEDURES**

#### **1.3.1. Workmanship**

1.3.1.1. The contractor shall execute the work in the most thorough, prompt and workmanlike manner and in accordance with the plans and specifications. The installations shall be done through standard methods and good engineering practices.

#### **1.3.2. Materials**

1.3.2.1. All materials to be installed shall be brand new except as otherwise noted on the plans or specifications. The materials shall be as specified. No substitution of materials is allowed. Should the contractor find it necessary to use another type/brand of materials instead of the specified item, he shall first obtain approval from the procuring entity prior to installation. Any substituted material installed without the approval of the procuring entity shall be subject to replacement.

#### **1.3.3. Coordination**

1.3.3.1. It is the sole responsibility of the contractor to conduct coordination of his activities with the following:

1.3.3.1.1. Other trades and suppliers

1.3.3.1.2. Procuring Entity/Engineer

1.3.3.1.3. EPPI

1.3.3.1.4. Local Government Authority

1.3.3.1.5. Deviation From The Plans

1.3.3.2. No deviation from the plans is to be made unless given notice or approval by the procuring entity.

#### **1.3.4. Record Drawings and “As-Built” plan.**

1.3.4.1. The contractor is required to keep an active record of the actual installation during the progress of the job. This shall be the reference in the preparation of the As-Built plans which shall include all pertinent information, complete in all aspects of the actual installation, and all new information not originally shown in the contract drawings. The As-Built plans shall be prepared by the contractor at his expense and shall be submitted to the Procuring Entity for approval upon the completion of the work. The approval of the As-Built drawings shall be a prerequisite for the final acceptance of the electrical works. Submit two (2) copies of the “As-Built” drawings signed and dry sealed by a Registered Professional Electrical Engineer. Original tracing/reproducible copy shall also be submitted to the procuring entity.



## 1.4. SUBMITTALS

1.4.1. Obtain approval before procurement, fabrication or delivery of items to the job site. Partial submittals will not be entertained and will be returned without review. Submittals shall include the manufacturer's name, trade name, place of manufacturer, catalogue model of number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference and technical society publication references, and other information necessary to establish contract compliance of each item to be furnished.

1.4.1.1. Shop Drawings In addition to the requirements of the contract clauses, shop drawings shall meet the following requirements:

1.4.1.1.1. Drawings shall be a minimum of 210 mm x 297 mm in size or in A3 size, except as specified otherwise.

1.4.1.1.2. Drawings shall include wiring diagrams and installation details indicating the proposed location layout and arrangement, control panels, accessories, and other items that must be

1.4.1.1.3. Wiring diagrams shall identify circuit termination and the internal wiring for each item of equipment and its interconnection.

1.4.1.1.4. Drawings shall indicate adequate clearances for operation, maintenance and replacement of equipment devices. If the layout is disapproved, revise the layout and resubmittal. All shall be applied after approval by the DSWD.

1.6.1.2. *"As-Built" Drawings*

1.6.1.2.1. The cost of as-built drawings shall be borne by the Contractor. Submittal of such drawings shall be a condition to final payment.

## 1.5. DELIVERY AND STORAGE

1.5.1. Handle, store, and protect equipment and materials in accordance with the manufacturer's recommendations. Replace damaged or defective items with new one.

## 1.7. ELECTRIC POWER

1.7.1. The contractor shall be responsible for his own electric power needed for the execution of the job.

## 1.8. TEST

1.8.1. Conduit tests on all electrical conductors installed in the presence of the procuring entity's representative.

1.8.1.1. check for grounds

1.8.1.2. insulation resistance test

1.8.1.3. continuity test for all outlets

1.8.1.4. voltage level test

1.8.1.5. phase relationship

1.8.1.6. check circuit connections at panel boards, all single phase circuits shall be connected to phase as shown in the load schedule.

1.8.2. All defects found during the test shall be repaired immediately by the contractor.



1.8.3. All tools, equipment and instruments needed to conduct tests shall be on the account of the contractor. All materials installed without prior approval shall be at the risk of the Contractor.

## 1.9. GENERAL NOTES

1.9.1. All electrical works and installations shall comply with the provisions of the latest edition of the Philippine electrical code with the rules and regulations of the national and local authorities concerned in the reinforcement of electrical laws and with the rules and regulations of utility companies concerned.

1.9.2. Service voltage to the building shall be 230 volts, three phase, three (3) wire systems.

1.9.3. The contractor shall verify the actual location of the concrete terminal pole connection to the power service supply.

1.9.4. All installation and wirings are concealed from view and shall be encased in polyvinyl chloride (PVC) pipes of schedule 40 except for power service entrance which shall be rigid steel conduit (RSC) pipes unless otherwise specified.

1.9.5. Minimum wire and conduit size shall be no. 12 (3.5sq.mm.) TW AWG and 12mm diameter size respectively, for power supply outlets.

1.9.6. Pull boxes of appropriate size shall be provided even if not indicated in drawing to accommodate the number of wires and splices.

1.9.7. All fluorescent fixtures shall be provided with polyester filled, preheat, thermally protected high factor ballast.

1.9.8. All materials to be used shall be new of approved type appropriate for both location and intended use.

1.9.9. Light control switches shall be rated 10a 300v and shall carry a load greater than 50a.

1.9.10. Duplex convenience outlets shall be rated 10a, 250 volts and special purpose outlets shall be rated 15a, 250 volts.

1.9.11. For each spare unit in the panel board, provide an empty 20mm diameter riser terminating in a 2.5" by 4" octagonal box above the ceiling.

1.9.12. All works shall be done under the direct supervision of a duly licensed electrical engineer or a registered master electrician.

1.9.13. Outlet boxes shall be as follows:

1.9.13.1. Light outlets : 1-1/2" deep 4" octagonal box 1 or 2 way entries.  
2-1/3" deep 4" octagonal box 3 or 4 way entries.

1.9.13.2. Receptacles/ telephone outlets: 2-1/8" deep 2"x4" utility box 1 gang raised plastic cover for 3 or 4 raceway entries.

1.9.14. No revision on the design shall be done without the prior knowledge and approval of the designer and the DSWD. Any such revision done without approval causes responsibility of the designer to cease as a whole:

1.9.14.1. Panel box 1.70m from top of panel box to finish floor line

1.9.14.2. Switch/push button 1.37m from center of device to finish floor line

1.9.14.3. Convenience outlet; intercom; telephone outlet; range outlet 0.30m from center of device to finish floor line





1.9.14.4. Buzzer; chime & fire alarm; 1.20m from center line of device to finish floor line.

## **PART 2 PRODUCT**

### **2.1. SUPPLIER**

2.1.1. Subject to compliance with requirements and as approved by the Architect. For compliance with requirements, acceptable manufacturers are needed to be pre-approved by the architect.

## **PART 3 EXECUTION**

3.1. Installation shall be in accordance with approved shop drawings and manufacturer's installation/guide and directions. Testing and adjustments shall be performed prior to final acceptance.

**\*\*\* END OF SECTION \*\*\***



# PLUMBING SPECIFICATION

## DIVISION 22 - "PLUMBING"

30 JUNE 2023

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ARJMM/ REV. 00

Revision	Date	Description



## PLUMBING SPECIFICATIONS

### **PART 1 GENERAL**

#### **1.1. SCOPE OF WORKS**

1.1.1. The work to be undertaken under this section shall consist of the furnishing of all materials, labor tools, equipment and other facilities and the satisfactory performance of all work necessary for the complete installation, testing and operation of the plumbing system accordance with the applicable drawing and this section of that specifications consisting of, but not necessarily limited to the following:

1.1.1.1. Soil, waste and vents pipe system, within the building up to the sewer line.

1.1.1.2. Interior fire protection system consisting of combination standpipes, valves, fire hose cabinets, inlets, connectors and portable fire extinguishers.

1.1.1.3. Water service connection from the main building distribution system.

1.1.1.4. Furnishing, installation and testing of water closets, lavatories, accessories including controls & piping works.

1.1.1.5. Furnishing and installation of all plumbing fixtures, fittings, trims and accessories.

1.1.2. All work shall be performed in accordance with the requirements of all applicable laws of the Republic of the Philippines and all local codes and ordinances.

1.1.3. The contractor is required to refer to all mechanical, electrical, structural and architectural plans and specifications all shall investigate all possible interference and conditions affecting his work in this section and that of the other sections.

1.1.4. All plumbing works to be done and sizes of pipe to be used shall be of the sizes, which are required and in accordance with the National Plumbing Code of the Philippines.

#### **1.2. RELATED SECTIONS**

1.2.1. Toilet and Bath Accessories

1.2.2. Toilet Compartments

#### **1.3. GENERAL REQUIREMENTS**

##### **1.3.1. Construction Requirements**

1.3.1.1. The Contractor before any installation work is started shall carefully examine the plans and shall investigate actual structural and finishing work conditions affecting all the works. Where actual condition necessitates a rearrangement of the approved pipe layout, the Contractor shall prepare a plan for the proposed lay-out.

##### **1.3.2. Drawing and Specifications:**

1.3.2.1. The contract drawings and the specifications are complementary to each other, and any labor or materials called for by both, if necessary, for the successful operation of any other particular types of equipment shall be furnished and installed without additional cost of Procuring Entity.

1.3.2.2. All dimensional locations of fixtures, equipment, floors and roof drains, risers and pipe. Chases shall be verified on the architectural drawings and manufacturer's catalogs.



1.3.2.3. Upon completion of the work as described herein, the Contractor shall at his own expense furnish the Procuring Entity originals and three (3) sets of "AS BUILT" Plans for future reference and maintenance purposes.

### 1.3.3. Protection

1.3.3.1. The contractor shall protect all his work and materials loss, injury or defacement. Protection of fixtures and materials shall be provided by boards, papers and/or cloth as required and any loss, damaged or deface material shall be replaced by the Contractor at his own expense.

### 1.3.4. Installation and Workmanship

1.3.4.1. All labor shall be performed in a first-class, neat and workmanlike manner by mechanics skilled in their work shall be satisfactory to the Project Architect.

1.3.4.2. No piping in any location shall be closed up, furred in or covered before testing and the examination of the same by the inspector, Procuring Entity or their representatives.

## 1.4. IDENTIFICATION OF MATERIALS:

1.4.1. Each length of pipe, fitting, traps, fixtures, and device used in the plumbing system shall have cast, stamped or indelibly marked on it the manufacturer's trademark or name, the weight, the type, and classes of product when so required by the standards mentioned above.

1.4.2. All plumbing fixtures and fittings installed without the above trademarks shall be removed and replaced with probably marked fixtures and fittings without any extra cost to the Procuring Entity.

## 1.5. WATER SUPPLY

1.5.1. Pipes and fittings for the waterline shall be as SPECIFIED BY EPPI.

1.5.2. Valves-All valves, unless otherwise specified shall be gate valves of size as indicated in the drawings: for hot water supply, valves and fittings shall be insulated of a thickness equal to that of the insulation on the adjoining pipe, securely fastened in place.

### 1.5.2.1. SANITARY DRAINAGE

1.5.2.1.1. Soil and waste Pipes and Fittings: Soil and waste pipes and fittings shall be PVC pipes (POLYVINYL CHLORIDE) series 1000.

1.5.2.1.2. Vent Pipes and Fittings: Vent pipes and fittings shall be PVC pipes

1.5.2.1.3. Shower and Floor Drains: Shower and floor drains shall be of high grade, strong, tough, and even grained metals.

1.5.2.1.4. Cleanouts:

1.5.2.1.4.1. Ceiling cleanouts shall be of the same material as pipe with sealed screw type, raised head plug.

1.5.2.1.4.2. Floor cleanouts shall be cast-iron body with brass plug, colt-type or countersunk head; METMA brand.

### 1.5.2.2. HANGERS, INSERTS AND PIPE SUPPORTS

1.5.2.2.1. Provide suitable and substantial hangers and supports for all piping.



1.5.2.2.2. Support horizontal piping in accordingly approved sizes where pipe clamps are too short to connect to the building construction.

## **1.6. SUBMITTALS**

### **1.6.1. Manufacturer's Catalog Data**

1.6.1.1. Submit for each type of fixture specified. Include descriptions of materials, finishes, fastenings and anchoring devices, and appurtenances.

### **1.6.2. Samples**

1.6.2.1. Submit one of each type of accessory complete with appurtenances and finish as specified. Approved samples may be installed in the work provided each sample labeled for identification and location recorded.

## **1.7. DELIVERY AND STORAGE**

1.7.1. Deliver materials to the site in unopened containers, labeled with the manufacturer's names and brands, ready for installation. Store accessories in safe, dry locations until needed for installation.

## **PART 2 PRODUCTS**

### **2.1. MATERIALS AND FINISHES**

2.1.1. This specification covers all plumbing fixtures made from a mixture of white burning clays and finely ground minerals, the wares are subjected to a high temperature rendering them incapable of adsorbing liquid, when unglazed, does not have a mean value of water absorption greater than a 5% of the dry weight making it sanitary and odorless. It is then coated on all exposed surfaces with an impervious non-crazing vitreous glaze giving it a permanent colored finish and retains high quality gloss resistant to acids and alkalis making it easy to maintain.

## **PART 3 EXECUTION**

### **3.1. INSTALLATION**

3.1.1. Surfaces of fastening devices exposed after installation shall have the same finish as the attached fixtures. Exposed screw heads shall be oval. Install fixtures at the location and height as shown in the drawings. Protect exposed surfaces of accessories with strippable plastic or by other means until the installation is accepted. Coordinate fixture manufacturer's mounting details with other trades as their work progresses. After installation, thoroughly clean exposed surfaces and restore damaged work to its original condition or replace with new work.

#### **3.1.2. Surface Mounted Accessories**

3.1.2.1. Mounting on concealed back-plates shall have concealed fasteners. Unless indicated or specified otherwise, install fixtures with sheet metal screws or wood screws in lead-lined braided jute, teflon or neoprene sleeves, or lead expansion shield, or other approved fasteners as required by the construction. Install back-plates in the same manner, or provide with lugs or anchors set in mortar, as required by the construction.

### **3.2. WATER SYSTEM TEST**

3.2.1. Upon completion of the roughing-in and before fixtures, the entire water piping system shall be tested at a hydrostatic pressure of one and half (1-1/2) times the expected working pressure in the system when in operation, and proven tight at this pressure or not less than 150 psi gauge.



3.2.2. Where a portion of the water piping system is to be concealed before completion, this portion shall be tested separately in a manner to that described for the entire system, and in the presence of the Procuring Entity or its representative.

### **3.3. DRAINAGE SYSTEM TEST**

3.3.1. The entire drainage and venting system shall have necessary openings which can be plugged to permit the entire system to be filled with water to the level of the highest vent stack and/or vent above the roof.

3.3.2. The system shall hold this water for a full thirty (30) minutes during which time there shall be no drop more than four inches 100mm (4").

3.3.3. If and when the Procuring Entity decides that an additional test is needed, such as an air or smoke test on the drainage system, the Contractor shall perform such test without additional cost to the Procuring Entity.

**\*\*\* END OF SECTION \*\*\***

# Checklist of Technical and Financial Documents

## I. TECHNICAL COMPONENT ENVELOPE

### *Class "A" Documents*

#### Legal Documents

- (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

#### Technical Documents

- (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**
- (d) Special PCAB License in case of Joint Ventures **and** registration for the type and cost of the contract to be bid; **and**
- (e) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** original copy of Notarized Bid Securing Declaration; **and**
- (f) Project Requirements, which shall include the following:
  - a. Organizational chart for the contract to be bid;
  - b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
  - c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
  - d. Certificate of Site Inspection
- (g) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

#### Financial Documents

- (h) The prospective bidder's computation of Net Financial Contracting Capacity

(NFCC).

***Class “B” Documents***

- (i) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence **or** duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

**II. FINANCIAL COMPONENT ENVELOPE**

- (j) Original of duly signed and accomplished Financial Bid Form; **and**

***Other documentary requirements under RA No. 9184***

- (k) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- (l) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- (m) Cash Flow by Quarter.



## Statement of Single Largest Similar Completed Contract

**Business Name:** \_\_\_\_\_

**Business Address :** \_\_\_\_\_

Name of Contract/Title of the Project	a. Owner's Name b. Address c. Telephone Nos.	Date of the Contract	Contract Duration	Nature / Scope of Work	Contractor's Role (Whether sole contractor, subcontractor, or partner in a JV)		Total Contract Value at Award	Date of Completion	Total contract value at completion	Percentage of Planned and Actual Accomplishments, if applicable	
					Description	Percentage of Participation (%)				Planned	Actual
<u>Government Contracts</u>											
<u>Private Contracts</u>											
<b>Total Cost</b>											

**Note: This statement shall be supported with:**

- 1 Notice to Proceed and/or Purchase Order/Contract
- 2 Owner's Certificate of Final Acceptance issued by the project owner other than the contractor or a final rating of at least **Satisfactory** in the Constructors Performance Evaluation System (CPES).
- 3 In case of contracts with the private sector, an equivalent document shall be submitted

Submitted by \_\_\_\_\_ :

(Printed Name & Signature)

Designation \_\_\_\_\_ :

Date \_\_\_\_\_ :

**STATEMENT OF ALL ITS ON-GOING GOVERNMENT AND PRIVATE CONTRACTS, INCLUDING CONTRACTS AWARDED BUT NOT YET STARTED, IF ANY, WHETHER SIMILAR OR NOT SIMILAR IN NATURE AND COMPLEXITY TO THE CONTRACT TO BE BID**

Name of the Contract or Title of the Project	Owner's Name and Address	Nature of Work / Scope of Work	Contractor's Role and percentage of participation	Date of Contract	Total Contract Value at Award	Value of Outstanding Works	Contract Duration	Percentage (%) of Accomplishment		Estimated Time of Completion	
								Planned	Actual	Start	Completion
<b>A) Government Contracts</b>											
i. On-going											
ii. Awarded but not yet started											
<b>B) Private Contracts</b>											
i. On-going											
ii. Awarded but not yet started											

**Note: This statement shall be supported with:**

1. Contract Agreement and/or Purchase Order
2. Notice to Proceed (for government contracts under Public Bidding)

\_\_\_\_\_  
Name of Firm / Applicant

\_\_\_\_\_  
Authorized Signatory

\_\_\_\_\_  
Date

## **Bid Securing Declaration Form**

*[shall be submitted with the Bid if bidder opts to provide this form of bid security]*

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REPUBLIC OF THE PHILIPPINES)  
CITY OF \_\_\_\_\_) S.S.

### **BID SECURING DECLARATION** **Project Identification No.: *[Insert number]***

To: *[Insert name and address of the Procuring Entity]*

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f), of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
  - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
  - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
  - c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this \_\_\_\_ day of *[month]* *[year]* at *[place of execution]*.

*[Insert NAME OF BIDDER OR ITS AUTHORIZED  
REPRESENTATIVE]*

*[Insert signatory's legal capacity]*

Affiant

### **[Jurat]**

*[Format shall be based on the latest Rules on Notarial Practice]*

**Contractor's Organizational Chart for the Firm**

Submit Copy of the Organizational Chart of the firm. Indicate in the chart the names of the Project Manager, Project Engineer, Bridge Engineer, Structural Engineer, Materials and Quality Control Engineer, Foreman and other Key Engineering Personnel.

Attach the required Proposed Organizational Chart for the Contract as stated above

(Name of Representative)  
(Position)  
(Name of Bidder)

**KEY PERSONNEL  
(FORMAT OF BIO-DATA)**

Give the detailed information of the following personnel who are scheduled to be assigned as full-time field staff for the project. Fill up a form for each person.

- Authorized Managing Officer / Representative
- Sustained Technical Employee

1. Name : \_\_\_\_\_
2. Date of Birth : \_\_\_\_\_
3. Nationality : \_\_\_\_\_
4. Education and Degrees : \_\_\_\_\_
5. Specialty : \_\_\_\_\_
6. Registration : \_\_\_\_\_
7. Length of Service with the Firm : \_\_\_\_\_ Year from \_\_\_\_\_ (months) \_\_\_\_\_ (year)  
To \_\_\_\_\_ (months) \_\_\_\_\_ (year)
8. Years of Experience : \_\_\_\_\_
9. If Item 7 is less than ten (10) years, give name and length of service with previous employers for a ten (10)-year period (attached additional sheet/s), if necessary:

Name and Address of Employer

Length of Service

_____	_____ year(s) from _____ to _____
_____	_____ year(s) from _____ to _____
_____	_____ year(s) from _____ to _____

10. Experience:

This should cover the past ten (10) years of experience. (Attached as many pages as necessary to show involvement of personnel in projects using the format below).

1. Name : \_\_\_\_\_
2. Name and Address of Owner : \_\_\_\_\_
3. Name and Address of the  
Owner's Engineer : \_\_\_\_\_  
(Consultant)
4. Indicate the Features of Project  
(particulars of the project  
components and any other particular  
interest connected with the project): \_\_\_\_\_
5. Contract Amount Expressed in  
Philippine Currency : \_\_\_\_\_
6. Position : \_\_\_\_\_
7. Structures for which the employee  
was responsible : \_\_\_\_\_
8. Assignment Period : from \_\_\_\_\_ (months) \_\_\_\_\_ (years)  
to \_\_\_\_\_ (months) \_\_\_\_\_ (years)

\_\_\_\_\_  
Name and Signature of Employee

It is hereby certified that the above personnel can be assigned to this project, if the contract is awarded to our company.

\_\_\_\_\_  
(Place and Date)

\_\_\_\_\_  
(The Authorized Representative)

**Qualification of Key Personnel**

Business Name : \_\_\_\_\_  
 Business Address : \_\_\_\_\_  
 \_\_\_\_\_

	(For Ex.) Project Manager / Engineer					
1 Name						
2 Address						
3 Date of Birth						
4 Employed Since						
5 Experience						
6 Previous Employment						
7 Education						
8 PRC License						

Minimum Requirements :  
 :  
 :  
 :

Submitted by : \_\_\_\_\_  
 (Printed Name & Signature)

Designation : \_\_\_\_\_

Date : \_\_\_\_\_

**List of Equipment, Owned or Leased and/or under Purchase Agreements**

Business Name : \_\_\_\_\_  
Business Address : \_\_\_\_\_

Description	Owned/ Leased/Under Purchase Agreement	Model/ Year	Capacity / Performance / Size	Plate No.	Motor No. / Body No.	Location	Condition	Proof of Ownership / Lessor or Vendor
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								

Submitted by : \_\_\_\_\_  
(Printed Name & Signature)  
Designation : \_\_\_\_\_  
Date : \_\_\_\_\_

**Print as many pages as necessary.**



## Omnibus Sworn Statement (Revised)

*[shall be submitted with the Bid]*

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REPUBLIC OF THE PHILIPPINES )  
CITY/MUNICIPALITY OF \_\_\_\_\_ ) S.S.

### AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*

*[If a sole proprietorship:]* I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

*[If a partnership, corporation, cooperative, or joint venture:]* I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. *[Select one, delete the other:]*

*[If a sole proprietorship:]* As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

*[If a partnership, corporation, cooperative, or joint venture:]* I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, **by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;**

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. *[Select one, delete the rest:]*

*[If a sole proprietorship:]* The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical

Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

*[If a partnership or cooperative:]* None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

*[If a corporation or joint venture:]* None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
  - a. Carefully examining all of the Bidding Documents;
  - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
  - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
  - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

**IN WITNESS WHEREOF**, I have hereunto set my hand this \_\_\_ day of \_\_\_, 20\_\_ at \_\_\_\_\_, Philippines.

*[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]*

*[Insert signatory's legal capacity]*

Affiant

**[Jurat]**

*[Format shall be based on the latest Rules on Notarial Practice]*

**FINANCIAL DOCUMENTS FOR ELIGIBILITY CHECK**

- A. Summary of the Applicant Supplier's/Distributor's/Manufacturer's assets and liabilities on the basis of the income tax return and audited financial statement for FY2021 or FY2022, stamped "RECEIVED" by the Bureau of Internal Revenue or BIR authorized collecting agent.

		Year 20__
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

- B. The Net Financial Contracting Capacity (NFCC) based on the above data is computed as follows:

NFCC = [(Current assets minus current liabilities) (15)] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started, coinciding with the contract to be bid.

NFCC = P \_\_\_\_\_

I hereby certify that the computation of the above is based on the income tax return and audited financial statement for FY2021 or FY2022 stamped "RECEIVED" by the BIR or BIR authorized collecting agent.

Submitted by:

\_\_\_\_\_  
Name of Supplier / Distributor / Manufacturer

\_\_\_\_\_  
Signature of Authorized Representative  
Date : \_\_\_\_\_

**NOTE:**

1. If Partnership or Joint Venture, each Partner or Member Firm of Joint Venture shall submit the above requirements.

# Bid Form for the Procurement of Infrastructure Projects

*[shall be submitted with the Bid]*

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## BID FORM

Date : \_\_\_\_\_  
Project Identification No. : \_\_\_\_\_

To: *[name and address of Procuring Entity]*

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, declare that:

- a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: *[insert name of contract]*;
- b. We offer to execute the Works for this Contract in accordance with the PBDs;
- c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;
- d. The discounts offered and the methodology for their application are: *[insert information]*;
- e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties]*, which are itemized herein and reflected in the detailed estimates,
- f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;
- g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines<sup>1</sup> for this purpose;
- h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and
- j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- k. We likewise certify/confirm that the undersigned, is the duly authorized

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<sup>1</sup> currently based on GPPB Resolution No. 09-2020

representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].

- I. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: \_\_\_\_\_

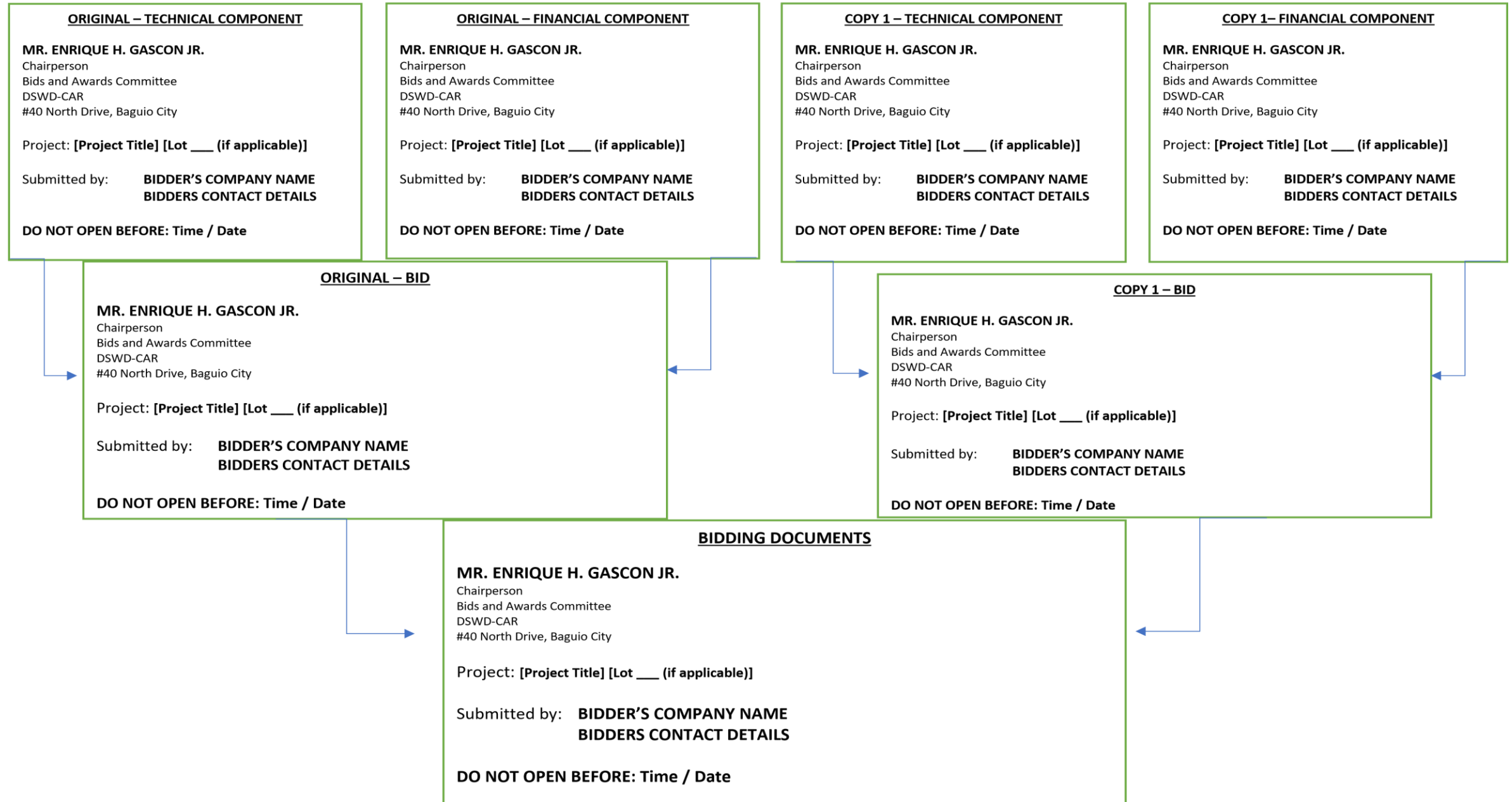
Legal Capacity: \_\_\_\_\_

Signature: \_\_\_\_\_

Duly authorized to sign the Bid for and behalf of: \_\_\_\_\_

Date: \_\_\_\_\_

**MARKING AND SEALING OF ENVELOPE:**



**Note: The technical and financial documents must be submitted in two (2) copies (Original Copy and Copy 1). The Original Technical Component envelope and Original Financial Component envelope must be sealed in one envelope marked “ORIGINAL BID”. The Copy 1 Technical Component envelope and Copy 1 Financial Component Envelope must also be sealed in another envelope marked “Copy 1 Bid”. These envelopes containing the Original Copy and Copy 1 must be enclosed in one single envelope marked “BIDDING DOCUMENTS”. The technical and financial documents must be properly tabbed and signed.**



## CERTIFICATE OF SITE INSPECTION

This is to certify that \_\_\_\_\_ of \_\_\_\_\_  
(Name of Representative)

\_\_\_\_\_ with office address  
(Name of Entity)

at \_\_\_\_\_ had inspected the site for  
the **CONSTRUCTION OF RSCC GUARD HOUSE AND ADDITIONAL IMPROVEMENT  
FOR RSCC BUILDING** located at RSCC, Wangal, La Trinidad.

This certification is issued to Mr./Ms. \_\_\_\_\_ as part  
(Name of Bidder or Representative)  
of his/her Technical Proposal.

Issued this \_\_\_\_ of \_\_\_\_\_, 2023.

**GLYXTER N. RUDIO**

AOI, Buildings and Ground Management Section Head