

Republic of the Philippines
NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY
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SUPPLEMENTAL/BID BULLETIN NO. 1

This Supplemental/Bid Bulletin is issued to inform prospective bidders of the procurement project “Supply of Labor, Materials and Equipment for the Waterproofing Works at NAST-PSHC Roof Deck” of the following:

1. Revised Specifications is attached (or download from www.nast.ph)

This bulletin shall form an intergral part of the Bid Documents for the said project.

For guidance and information of all concerned.


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Chair, NAST-BAC

Section VI. Specifications

TERMS OF REFERENCE (TOR)

SUPPLY OF LABOR, MATERIALS AND EQUIPMENT FOR WATERPROOFING WORKS AT NAST-PSHC ROOF DECK

BACKGROUND/RATIONALE

The National Academy of Science and Technology through the DOST Grants-in-Aid (GIA) Funds provided funds amounting to **One Million Nine Hundred Eleven Thousand Five Hundred Sixty-Six Pesos and 48/100 Only (P1,911,566.48)** for the **Supply of Labor, Materials and Equipment for Waterproofing of NAST Building Roof Deck**. The said budget allocation was granted for CY2019 under the project “Salinlahi in Transition: Transforming the PSHC into a world Class Science Center (Phase II, Year 3)”.

The objective of this project is to protect rainwater leaks of roof deck area of the National Academy of Science and Technology Building. Work shall include supervision, labor and supply of materials, equipment and services necessary to properly conduct and implement the work and produce the desired output/result.

I. SCOPE OF WORKS

This project includes the furnishing of all labor, materials tools, equipment and other technical services needed to complete the Supply of Labor, Materials and Equipment for Waterproofing Works at NAST-PSHC Roof Deck.

The said project also includes other technical services needed to complete the work packages in accordance with the drawings, specifications in the bidding documents and in the TOR.

1. Mobilization/Demobilization
2. Provision of Temporary Facilities
 - a. temporary enclosure using durable materials
 - b. Provide temporary storage of the materials and equipment
3. Removal and disposal of the existing waterproofing materials at roof deck and parapet walls.
4. Preparation of concrete base at the roof deck.
5. Slope correction and concrete toppings (1”) with welded wire mesh 6mm, 4” x 4”, 6” x 20”; and restoration of damaged surface.

6. Supply and installation of waterproofing 80 mils **Pure Polyurethane** exposed type for exterior application;
 - a. Roof deck, and
 - b. Parapet wall
7. The Waterproofing materials shall be delivered to the site in the original sealed container or package bearing manufacturers name and brand designation.
8. Materials stored on the job site shall be protected from moisture weather and extreme temperatures.
9. Surface to which materials are to be applied shall be free from foreign matter, grinded surface, clean and smooth, dry and free from projections.
10. All works under the section shall be performed only by qualified waterproofing contractor trained and approved by the manufacturer.
11. Materials shall be applied by trained and certified Waterproofing applicator.
12. Submission of Bonds and Insurance and warranty Certificates.
13. Main Composition of the Project Team for NAST
 - a. Project-in-charge
 - b. QA/QC Engineer
14. Permits by Local Government Agencies including expenses c/o contractor
15. Safety Requirements Related to Constructions
 - a. Paraphernalia c/o Contractor (Staff PPE, EHS, Medicines, Signages, fire extengueshers and all other fire protection, ahuling, house keeping and etc.
 - b. Cosntructions Safety and Health Program
 - i. Tools and Equipment/s (Lifting Mobile equipment)
 - ii. Workers Lodging Houses
 - iii. hauling and disposal of debris

II. MATERIALS SPECIFICATION

1. **Pure Polyurethane** is coloured expose moisture cured waterproofing membrane.

High flecible, cold applied Ultra Violet resistant coloured waterproofing membreane for Roofing deck application.

Polyurethane sealant, one-component (without mixing of other chemicals) shall be applied using caukling gun to ensure quality and ease of application. The Pure Polyurethane has the following properties and values:

Properties	Value
Product Composition	Pure Polyurethane
Color	Gray or green
Density	1.2-1.3 kg/m ²
Solid Content	>95%
Tensile Strength (ASTM E 96) for water vapor transmission	
ASTM D6886-12 (for determination of the Individual Volatile Organic Compounds (VOCs) in Air-Dry Coatings by Gas Chromatography)	

Waterproofing membrane to be used should pass the following Reference Standards of American Society for Testing and Materials (ASTM)

TEST METHOD	VALUE
• ASTM C 836- Crack Bridging	= Pass 2mm, 25 cycle
• ASTM D 412 – Tensile Strength	= 4.0 N/mm ²
• ASTM D 412 – Elongation at break	= >700%
• ASTM D 5469 – Adhesion to concrete	= >1.5 N/mm ²
• ASTM D 2240 – Hardness (Shore A)	= >60
• ASTM D 5052 – Water Permeability	= Below 5.0g/sq.m (42 hours)

2. Primer (for liquid applied waterproofing) – Must be non-toxic, non-flammable and alkali resistant

3. Other Requirements for submission by the contractor

a. Product Data: Submit manufacturer’s product data, installation instructions, use limitation and recommendations.

b. Samples: submit representative samples for approval:

b.1 Cold Fluid Applied Waterproofing System

III. RESPONSIBILITY OF THE CONTRACTOR

1. General Requirements:

- a. The Contractor will provide technical supervision, skilled manpower, tools, equipment and suitable highest quality materials within the specified period to complete the project.
- b. As built Drawings is to be done and submitted by Contractor
- c. Provide coordination and collaborative works with NWRB to complete respective works in accordance with approved drawings, specifications and method of installation.
- d. Provide all materials necessary to complete the works although not specifically mentioned in the Specifications, working drawings or in other contract documents without extra cost to the NWRB.
- e. Comply with all applicable Environment, Health and Safety regulations required by law.
- f. Secure and submit all necessary bonds, permits and insurances required in the contract.
- g. Submit on time, the required work schedule, delivery schedule, table of organization, manpower schedule, samples product data, safety plan, methodology and other requirements deemed necessary.
- h. Ensure the quality of materials and workmanship needed to complete and render ready for acceptance by the owner.

- i. Responsible for the safety requirements (safety shoes, vest, hard hat, safety harness, lifeline) and provision of fire extinguishers and all other fire protection provisions in working areas
- j. Compliance to provisions of safety provisions for warehousing/storage of their materials and equipment
- k. Medical Requirements of Contractor workers will be part of preliminaries of Contractors
- l. Hauling and disposal of garbage inside the building perimeter
- m. Protect and maintain in the required acceptable conditions of all waterproofing works and accessories during construction until hand over
- n. Ensure that the performance, appearance and proper functioning of the works are not affected by any movements, settlement or deflection in the building structure. Also take into account the construction accuracy of works by others to which the waterproofing works are attached

2. PROJECT CONDITIONS

- a. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.
- b. Proceed with Installation only when substrate construction and preparation work is complete and in condition to receive membrane waterproofing.

3. SPECIFICATIONS FOR CREATION OF WATERPROOFING MATERIALS

- a. **Cold Fluid Applied Waterproofing Membranes**, is coloured expose moisture cured **pure polyurethane** waterproofing membrane which should meet or exceed the performance requirements of ASTM standards.

Coverage: Approximately 1.5kg/m² @ 1.1mm thick in minimum (depending on site for Roof deck- minimum thickness of 2mm of the applied product or as manufacturer recommendation.

Limitation: Do not use on areas where negative hydrostatic pressure is evident

- b. **Waterstop**: use as per manufacturers recommended compatible material
- c. **Sealant**: For use in both moving and non moving joint application between parapet wall and floor slab use Polyurethane sealant

4. APPLICATION

Apply one (1) coat of Primer and two (2) coats of Pure Polyurethane (solvent base) waterproofing by brush, roller, or squeegee. Let it cure 12-24 hours prior to application of polyurethane topcoat for ultra violet protection or as manufacturer specification.

4. PROOF TESTING

All waterproofing area shall be given twenty-four (24) hours of flood testing and the contractor shall at once remedy any evidence of leakage shown. Plug all drains, built temporary dams at openings so that water will be minimum 25 mm (1") deep at high point of waterproofing area