



GOVERNMENT OF BERMUDA

**Ministry of Public Works
Department of Public Lands and Buildings**

TPO ROOF RETROFIT

SPECIFICATION

T.N. TATEM MIDDLE SCHOOL

Between the Owner: Department of Public Lands & Buildings
2 Aeolia Drive Devonshire DV05
Hamilton
Bermuda
441-292-8485

And the Contractor: To Be Advised

For the Project: T.N. Tatem Middle School
60 Middle Road
Warwick
WK03

Building #s, 0270, 0271,

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DIVISION 01. GENERAL REQUIREMENTS

01500 - Temporary Facilities and Controls

This work shall consist of the application of temporary measures throughout the life of the project.

01510 - Temporary Utilities

All connections and extensions required to provide temporary utilities shall be made by the Contractor at the Contractor's expense.

01511 - Temporary Electricity

The Contractor is to connect to the existing power service without disrupting local service requirements.

01518 - Temporary Water

The Contractor is to connect to the existing water source for construction operations.

01519 – Permits

Not Applicable.

01523 - Sanitary Facilities

The Contractor will be able to use the existing sanitary facilities, which he shall maintain in a neat and sanitary condition.

01530 - Temporary Construction

The contractor shall provide and maintain for duration of work all required temporary stairs, ladders, ramps, runways and hoists for use of all trades.

01540 - Construction Aides

The contractor to provide all construction aids needed during construction which shall include but not limited to; elevators, hoists, cranes, etc.

01542 - Construction Scaffolding and Platforms

The owner shall provide and maintain for duration of work all required temporary standing scaffolding and 'Independent tied' scaffold.

01550 - Vehicular Access and Parking

Arrange parking areas to accommodate construction personnel.

01560 - Temporary Barriers and Enclosures

The contractor shall provide barriers to prevent unauthorized entry into construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition. Install barricades and covered walkways required by governing authorities for public right of ways.

01600 - Product Requirements (Scope of Work)

All materials shall be installed in strict accordance with the manufacturer's written specifications or Material's Institute Standards. Where the manufacturer's recommended details are used, the

Manufacturer shall be responsible for the performance of their product. All Items not specifically mentioned that are required to make the work complete and operational shall be included.

Installation and Storage - All materials, supplies and equipment shall be installed per manufacturer's recommendations and per applicable codes and requirements. Material stored on site shall be protected from damage by moisture, wind, sun, abuse or any other harmful effects.

01630 - Product Substitution Procedures

If unable to source the specified product on island the Contractor is to investigate alternative proposed products and determine that they are equal or superior in all respects to products specified. Coordinate installation of accepted substitutions into the Work, making such changes as may be required for the Work to be complete in all respects. Meet with clients and get change order request signed.

01700 - Execution Requirements

The execution of all work shall be in strict accordance with these specifications and manufacturer's written specifications or Material's Institute Standards. Where the manufacturer's recommended details are used, the manufacturer shall be responsible for the performance of their product. All work not specifically mentioned that is required to make the work complete and operational shall be included.

Codes - Construction shall comply with all applicable building codes. It is the responsibility of the Contractor to insure compliance with said codes and modify the specifications as needed to comply with such codes.

Measurements - The Contractor shall check and verify all dimensions and conditions before proceeding with construction.

Workmanship - Workmanship shall conform to the best and highest standards of quality in each trade and shall include all items of fabrication, construction and installation. All work shall be completed by skilled tradesmen and mechanics. Installation of all equipment and materials shall be in strict accordance with manufacturer's recommendations.

Insurance - Builders Risk Insurance shall be maintained by the contractor during the course of construction until final acceptance by the owner. All bonding and insurance requirements shall be coordinated with the Owner prior to beginning construction. All contractors shall provide and be solely responsible for necessary barricades and safety precautions, and strictly adhere to all governing codes on safety, including the OSHA Act.

01740 - Cleaning

The construction site is to be in a clean and orderly condition throughout the construction process. Clean interior spaces prior to the application of the finishes. At the conclusion of construction, the project shall be properly cleaned. This should include but not be limited to; cleaning the interior and exterior glass, surfaces exposed to view, remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, and mop all tiled surfaces, etc. Remove all waste and surplus materials.

01760 - Protecting Installed Construction

The Contractor is to protect all installed construction. If products or materials come with a protective coating, contractor shall maintain protective coating until construction is complete. Contractor shall replace any items that become defective or damaged.

01904 - Hazardous Materials Removal and Disposal

The owner shall arrange for the removal and disposal of all hazardous material before beginning construction.

01904 - Submittals

Prior to starting work, the roofing contractor must submit the following:

Shop drawings showing layout, details of construction and identification of materials.

A sample of the manufacturer's Membrane System Warranty.

Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.

Certification from the membrane manufacturer indicating the membrane thickness over the reinforcing scrim (top ply membrane thickness) is nominal 15 mil or thicker.

DIVISION 02. ROOFING

02000 - General

Contractor shall provide labor and materials pertaining to TPO membrane roof covering installation as specified herein, while complying with all applicable building codes.

DIVISION 04. MASONRY

04000 - General

Contractor shall provide labor and materials pertaining to masonry work as required and as specified herein, while complying with all applicable building codes.

04002 – Masonry Up-Stand

Allow for raking out all loose pointing and repointing. Allow for making good all defective areas of masonry as necessary.

DIVISION 06. CARPENTRY

06000 - General

Contractor shall provide labor and materials pertaining to carpentry work as specified herein, while complying with all applicable building codes.

06100 – Rough Carpentry

Lumber shall be of live, sound stock and properly dried. Pressure treated lumber shall be used where any lumber shall come into contact with concrete, masonry block, and when using as support members.

06101 – Fascia Boards

Remove all existing defective fascia boards throughout and replace using timber or Plycem sized to match existing.

06102 - Soffits

Remove all existing defective soffit boards throughout and replace using timber or Plycem sized to match existing.

06103 - Bargeboards

Remove all existing bargeboards throughout and replace using timber or Plycem sized to match existing.

All new fascia, soffits and bargeboards are to be screw fixed using nonferrous screws.

06105 – Plycem Boarding

The contractor is to allow for installing new ½" (Plycem) fiber reinforced cement board over the existing roofs prior to the installation of the new TPO membranes throughout.

DIVISION 07. WATERPROOFING AND ROOF DRAINAGE

07000 - General

Contractor shall provide labor and materials pertaining to moisture protection work as specified herein, while complying with all applicable building codes.

It should be noted that the works may be carried out whilst the buildings are occupied.

The contractor is to ensure that roof covering works are carried out during forecasted dry weather conditions. The contractor is to allow for alterations and repositioning the existing temporary tarpaulins etc. necessary to protect the interior areas during the course of the roof covering works.

The Contractor is to review Roof layout in conjunction with this specification.

07110 – Waterproofing,

“Contractor shall provide labor and materials pertaining to moisture protection work as required and as specified herein, while complying with all applicable building codes and BS 6920:2000 (suitability of non-metallic products in contact with water intended for use for human consumption).

The contractor is to allow for the resurfacing of the existing roofs with a new **Thermoplastic Polyolefin (TPO) Single Ply Membrane Roof** covering or similar approved.

Location: All roofs

07500 - Membrane Roofing

The contractor shall provide and utilize appropriate roof slopes, drainage system(s), cants, flashing, protection devices and materials necessary for an effective roof system. All Roofing techniques, systems and materials utilized should be "time proven" (15 years) and constructed as "composite" systems instead of applications. Roofing shall be performed by professionals who are fully qualified and approved as specified by the manufacturer.

Design Requirements

Slopes to drain should be unobstructed by above-roof building elements, equipment curbs, or similar objects. Where such obstructions are unavoidable, provide cants, saddles or other means to restore positive pitch to drain. No buck laps shall be permitted anywhere in single-ply roofing membranes. All installed Roofing Systems shall meet ASCE 7 category D design standards. All eaves are to include for Carlisle Sure weld or Mule Hide recommended drip detail (or similar approved).

Warranty Requirements - Comply with the following requirements for warranties:

New Roofs: Roofing Systems shall include a 15 year, single source warranty covering the full single ply roofing system (including all accessories) for materials and labor.

Roofing Materials

All necessary roofing materials for a given project shall be provided by a single manufacturer. All accessory materials shall be approved by that manufacturer as necessary to obtain the manufacturer's full warranty.

Roofing System

Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of the Carlisle Sure-Weld or Mule Hide (or similar approved) 60-mil thick white TPO (Thermoplastic Polyolefin) reinforced membrane Adhered Roofing System including flashings as specified herein in accordance with the manufacturer's most current specifications and details.

The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.

Insulation – Not applicable.

Special Requirements - Re-roofing Projects.

Noise and Vibration - Consult with Project Coordinator to determine whether special requirements for evening or weekend work are necessary.

Dust Protection - Contractor shall provide dust protection over occupant's equipment and furnishings (where appropriate). Dust protection shall include top floor areas that are occupied. Where occupant's activities may be particularly sensitive to dust, dust protection shall be provided by contractor regardless of presence of suspended ceiling. Dust protection shall be applied and removed in coordination with occupant's operations.

Walkways

Install fully adhered slip resistant and highly visible TPO walkway rolls as supplied by Carlisle Sure-Weld or Mule Hide (or similar approved) at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, HVAC equipment etc.) and all locations as identified on the specifier's drawing.

Walkway rolls are to be welded to the roof membrane in accordance with the manufacturer's specifications.

07600 - Flashing

Supply and Install Carlisle Sure weld or Mule Hide flashing (or similar approved product) at all joints of walls, up-stands, copings and other connection points to prevent the infiltration of water.

07716 – Caulking

Carefully rake out all existing caulking to the joints of the copings and carryout replacement of this exterior caulking.

All exterior caulking shall be either external quality **Dow Corning** or Marine quality caulk 5200 as supplied by **3M** or similar to the prior approval of the contract administrator. Caulking shall be applied in accordance with the manufacturer's instructions, including surface preparation but excluding weep holes. Closed-cell polyethylene backer-rod must be used in all joints deeper or wider than ¼"; such joints shall be kept to a minimum in any event. Caulk shall be guaranteed non-staining, non sagging type. Caulk color shall match closely the finish of the masonry.

Joints and spaces to be caulked shall be thoroughly clean, dry, free of paint, putty oils, grease, dust and other foreign matters, and shall be primed if necessary. All caulking shall be removed from areas to receive new caulk. All surfaces to accept caulk shall be left broom clean before new application.

Application of caulk to the masonry, plaster, surfaces shall be provided in a manner recommended by the manufacturer. Caulk beads should be smooth and slightly concave, Excess, messy, or convex caulking will not be permitted, nor beads exceeding 3/8" wide.

All caulking shall be done using an approved type of caulking gun and applying the material under pressure, except where the use of a sun is not practical. Caulk joints shall be tooled immediately upon application to assure maximum adhesion and neat joint appearance.

07720 – Rainwater Glides, Drains and Drainage Strainers

Allow for the removal and replacement of all existing glides using either aluminum or pressure treated lumber.

Allow for removal of all existing rainwater drains and replacing with manufacturer's welded insert rainwater drain. Sealant to drain to be applied in accordance with the manufacturer's detail. Include for insert drainage strainer to all drains.

Drains to be 60mil thick ASTM grade reinforced TPO and sized to fit existing drain openings

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APPENDIX 1
(PHOTOGRAPHS)



Figure 1 South Class Rooms Pitched Roof 5



Figure 2 - Library Flat Roof 3



Figure 3 - East Restrooms and Class Room Roofs 4A and 5



Figure 4 - South East Class Rooms Roofs 7 & 8



Figure 5 - Assembly Flat Roof & Cafeteria Pitched Roof 1, 6 and 17



Figure 6 - Assembly Flat Roof 1



Figure 7 - Flat Restrooms Flat Roof 2A

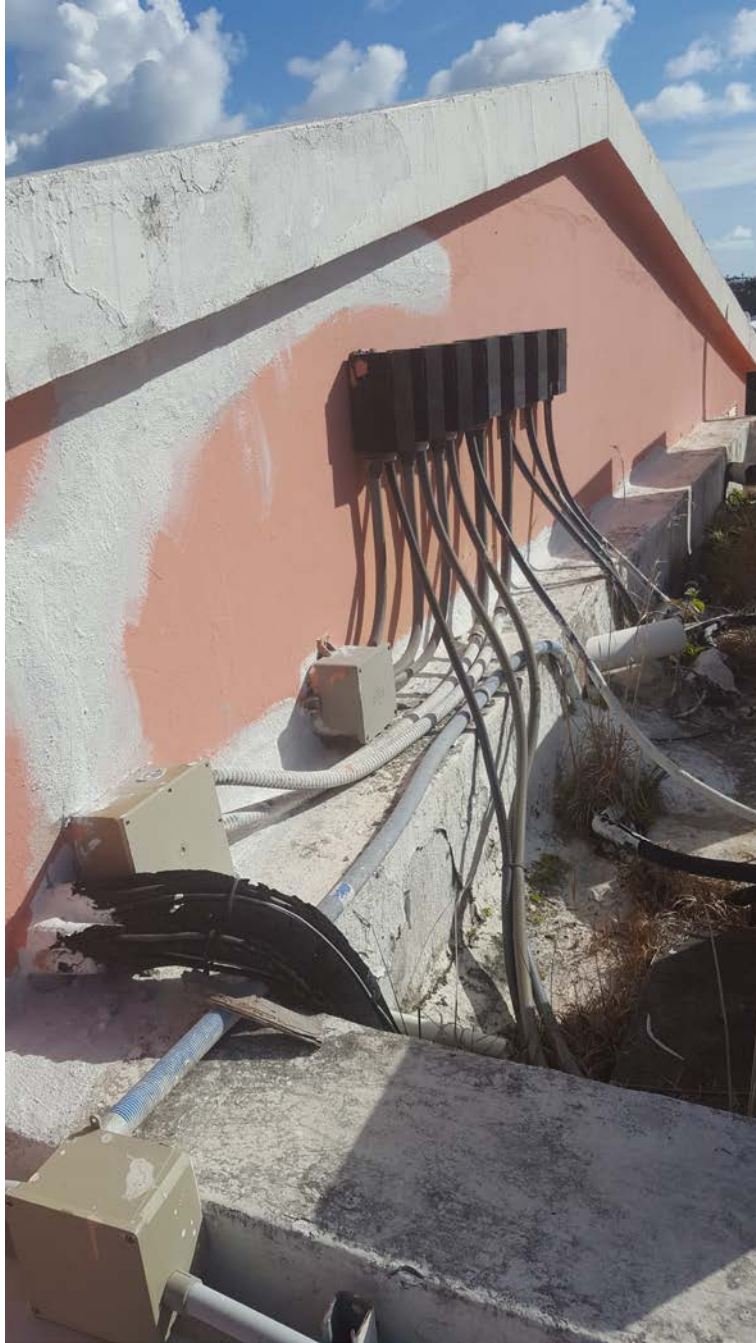


Figure 8 - East Class Rooms and Restrooms 4 & 4A