SECTION 071416

Fluid-applied waterproofing

Procor® Fluid Applied Membrane

PART 1 — GENERAL

1.01 RELATED DOCUMENTS

A. All of the Contract Documents, including General and Supplementary Conditions and Division 1 General Requirements, apply to the work of this section.

1.02 SUMMARY

A. The work of this section includes, but is not limited to, the following:

1. Fluid applied waterproofing system

2. Prefabricated drainage composite

3. Protection board

B. Related Sections: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 033000 – Cast-In-Place Concrete

2. Section 042000 – Unit Masonry

3. Section 071100 – Dampproofing

4. Section 076000 – Flashing and Sheet Metal

5. Section 079200 – Joint Sealants

6. Section 079500 – Expansion Control

7. Section 334600 – Subdrainage

1.03 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text.

B. American Society for Testing and Materials (ASTM)

C 836 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course

C 898 Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Separate Wearing Course

D 412 Standard Test Methods for Rubber Properties in Tension

D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds

D 1644 Test Methods for Nonvolatile Content of Varnishes

D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection

D 3767 Standard Practice for Rubber - Measurements of Dimensions

D 5295 Preparation of concrete Surfaces for Adhered Membrane Waterproofing Systems

1.04 SUBMITTALS

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

B. Samples: Submit representative samples of the following for approval:

1. Fluid applied membrane

2. Protection board

3. Prefabricated drainage composite

1.05 QUALITY ASSURANCE

A. Installer: A firm which has at least 3 years experience in work of the type required by this section.

B. Materials: Fluid applied waterproofing material shall be two part synthetic rubber based system free of isocyanates and bitumen. For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.

C. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver materials and products in labeled packages. Store and handle in strict compliance with manufacturer’s instructions, recommendations and material safety data sheets. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with applicable regulations.

1. Do not double-stack pallets of waterproofing material on the job site. Provide cover on top and all sides, allowing for adequate ventilation.

2. Store drainage composite or protection board flat and off the ground. Provide cover on top and all sides.

3. Protect waterproofing materials from freezing. In cool temperatures, store the material for several hours at room temperature to facilitate mixing and application.

B. Sequence deliveries to avoid delays, but minimize on-site storage.

1.07 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.

1.08 WARRANTY

A. Fluid Applied Waterproofing Membrane: Provide written 5 year material warranty issued by the membrane manufacturer upon completion of the work.

PART 2 — PRODUCTS

2.01 MATERIALS

A. Fluid Applied Waterproofing Membranes: Procor® fluid applied membranes by GCP Advanced Technologies Construction Products; a two part, self-curing, synthetic rubber based material. Procor® fluid applied membranes meet or exceed the performance requirements of ASTM C 836 and other ASTM standards as shown in the following table.

B. Waterproofing Membrane Physical Properties:

 PHYSICAL PROPERTIES FOR PROCOR® FLUID APPLIED MEMBRANES:

|  |  |  |
| --- | --- | --- |
| Property  | Test Method Test Method Typical Value Test Method Typical Value | Typical Value |
| Color |  | terra cotta |
| Cured Film Thickness | ASTM D 3767 Method A 1.5 mm (0.060 in.) nominal | 1.5 mm (0.060 in.) nominal |
| Solids Content | ASTM D 1644 100% | 100% |
| Flexibility, 180° bend over25 mm (1 in.) mandrel at 32°C (-25°F) | ASTM D 1970 | Unaffected |
| Elongation | ASTM D 412 | 500% minimum |
| Peel Adhesion to Concrete | ASTM D 903 Modified1 | 880 N/m (5 lbs/in.) |

**Footnote:**

1. Procor waterproofing membrane is applied to concrete and allowed to cure. Peel adhesion of the membrane is measured at a rate of 50 mm (2 in.) per minute with a peel angle of 90° at room temperature.

C. Prefabricated Drainage Composite: Hydroduct® 660 Drainage Composite by GCP Advanced Technologies Construction Products for horizontal surfaces. Hydroduct 220 Drainage Composite by GCP Advanced Technologies Construction Products for all vertical surfaces. Drainage composite shall be designed to promote positive drainage while serving as a protection course.

D. Protection Board (only if prefabricated drainage composite is not used):

1. Asphalt Hardboard: A premolded semi-rigid protection board consisting of bitumen, mineral core and reinforcement. Provide 3 mm (0.125 in.) thick hardboard on horizontal surfaces not receiving steel reinforced slab. Where steel reinforcing bars are to be used, apply two layers of 3 mm (0.125 in.) thick hardboard or one layer of 6 mm (0.25 in.) thick hardboard.

2. Expanded Polystyrene Protection Board: 25 mm (1 in.) thick for vertical applications with the following characteristics.

 Normal Density: 16 kg/m3 (1.0 lb/ft3)

 Thermal Conductivity, K factor: 0.24 at 5°C (40°F), 0.26 at 24°C (75°F)

 Thermal Resistance, R-Value: 4 per 25 mm (1 in.) of thickness.

E. Waterstop: AdcorTM ES hydrophilic non-bentonite waterstop by GCP Advanced Technologies Construction Products for non-moving concrete construction joints.

F. Miscellaneous Materials: Tape and other accessories specified or acceptable to manufacturer of fluid applied waterproofing membrane.

PART 3 — EXECUTION

3.01 EXAMINATION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 PREPARATION OF SUBSTRATES

1. Tie-holes and “bugholes” larger than 13 mm (1/2”) in diameter or deeper than 3 mm (1/8”), or both, should be either pretreated with Procor or repaired with a lean concrete mix or Waterproofing Systems, for further details on substrate preparation.

Cracked, pitted, honeycombed or heavily bugholed surfaces can be filled by spraying from close in (10” to 12”) but high material usage with result. Under these circumstances it may be more efficient to fill the surface with a parge coat of lean mortar mix before application of the Procor. It is also acceptable to fill in gaps with a compatible sealant or caulk.

B. Cast-In-Place Concrete Substrates:

1. Waterproofing application may commence as soon as the substrate can accept foot traffic. Surface shall be free of any visible water.

2. Fill form tie rod holes with concrete and finish flush with surrounding surface.

3. Repair bugholes greater than ½” (13 mm) in depth and ¼” (6 mm) in diameter deep and finish flush with surrounding surface.

4. Remove scaling to sound, unaffected concrete and repair exposed area.

5. Grind irregular construction joints to suitable flush surface.

C. Masonry Substrates: Apply waterproofing over concrete block and brick with smooth trowel-cut mortar joints or parge coat.

D. Plywood Substrates: Pretreat all plywood joints with 75mm (3 in.) wide, reinforced self-adhesive tape. Secure all fasteners.

E. Related Materials: Treat joints and install flashing as recommended by waterproofing manufacturer.

3.03 INSTALLATION

A. Refer to manufacturer’s literature for recommendations on installation, including but not limited to, the following:

1. Apply minimum 1.5 mm (0.060 in.) in all areas to be waterproofed. Apply minimum 3 mm (0.120 in.) in
all detail areas.

2. If area to be waterproofed is in direct sunlight and temperature is rising, apply “scratch coat” (a thin application of fluid applied waterproofing) prior to the full application of the waterproofing membrane.

3. In applications where a minimum slope of 11 mm/m (0.13 in./ft) cannot be achieved, a two coat application of Procor membrane is recommended to achieve the total thickness.

4. Apply protection board and related materials in accordance with manufacturer’s recommendations.

3.04 CLEANING AND PROTECTION

A. Remove any masking materials after installation. Clean any stains on materials which would be exposed in the
completed work.

B. Protect completed membrane waterproofing from subsequent construction activities as recommended by manufacturer.