SECTION 072616

**Integrally-bonded underslab vapor retarder**

Florprufe® 120 membrane

PART 1 — GENERAL

1.01 SUMMARY

A. The Work of this Section includes, but is not limited to, underslab vapor retarder/barrier membrane that forms an integral bond to poured concrete for use below slabs on grade.

B. Related sections include, but are not limited to, the following:

1. Section 031000 – Concrete Formwork

2. Section 033000 – Cast-In-Place Concrete

1.02 SUBMITTALS

A. Submit manufacturer’s product data, installation instructions and membrane samples for approval.

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):

D 412 Standard Test Methods for Rubber Properties in Tension

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

D 3767 Standard Practice for Rubber - Measurements of Dimensions

E 96 Standard Test Methods for Water Vapor Transmission of Materials

E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

E 1643 Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs

E 1745 Plastic Vapor Retarders Used in Contact with Soil or Granular fill under Concrete Slabs

1. American Concrete Institute (ACI)

ACI 302.1R-96 Addendum Vapor Retarder Location: For slabs with vapor-sensitive floor coverings, locate retarder in direct contact with the slab (not beneath a layer of granular fill).

1.04 QUALITY ASSURANCE

A. Materials: For each type of material required for the work of this section, provide primary materials that are the products of one manufacturer.

B. Schedule Coordination: Schedule work such that membrane will not be left exposed to weather for longer than that recommended by the manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer’s instructions. Protect from damage from weather, excessive temperature and construction operations. Remove and dispose of damaged material in accordance with applicable regulations.

PART 2 — PRODUCTS

2.01 MATERIALS

1. Integrally Bonded Vapor Protection: Florprufe® 120 Membrane by GCP Advanced Technologies Construction Products, a 0.5mm (0.021 in) nominal thickness composite sheet membrane comprising 0.4 mm (0.016 in.) of polyolefin film, and layers of specially formulated synthetic adhesive layers. The membrane shall form an integral and permanent bond to poured concrete to prevent vapor migration at the interface of the membrane and structural concrete. Provide membrane with the following physical properties:

 PHYSICAL PROPERTIES FOR FLORPRUFE® 120 MEMBRANE:

 Florprufe 120 is a Class A vapor barrier and exceeds the requirements as defined by ASTM E 1745

|  |  |  |
| --- | --- | --- |
| Property | Typical Value | Test Method |
| Thickness (nominal) |  0.5mm (0.021 in) | ASTM D3767 Method A |
| Water Vapor Permeance | 0.03 perms | ASTM E96 Method B \* |
| Tensile Strength | 65 lb./in | ASTM E154 \* |
| Elongation  | 300% | ASTM D412 |
| Puncture Resistance | 3300 grams | ASTM D1709 \* |
| Peel Adhesion to Concrete | >4 lb./in  | ASTM D903 |

\* ASTM E 1745 Requirements.

PART 3 — EXECUTION

3.01 EXECUTION

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 INSTALLATION

A. Earth and stone substrates shall be well compacted to produce an even, solid substrate. Remove loose aggregate or sharp protrusions. Concrete substrates shall be smooth or broom finished and monolithic. Remove standing water prior to membrane applications.

B. Installation shall be in accordance with manufacturer’s instructions and ASTM E 1643–98, including but not limited to,
the following:

1. Apply membrane with the HDPE film facing the prepared substrate. Remove the release liner during application.

2. Apply succeeding sheets by overlapping the previous sheet 50-mm (2 in.) along the marked lap line. End Laps should be staggered to avoid a build up of layers.

Mechanical Fastening Method - To prevent the membrane from moving and gaps opening, the laps should be fastened together at 1.0m (39 in) maximum centers. Fix through the center of the lap area using 12mm (0.5 in) long washer-head self-tapping galvanized screws or similar allowing the head of the screw to bed into the adhesive compound to self-seal. Ensure the membrane lays flat and no openings occur. Additional fastening may be required at corners, details etc.

OR

Taped Lap Method - For additional security use Preprufe® Tape to secure and seal the overlaps. Overband the lap with the 100mm (4in) wide Preprufe® Tape using the lap line for alignment. Remove plastic release liner to ensure bond to concrete.

3. Mix and apply GCP Advanced Technologies liquid detailing compound to seal around penetrations such as drainage pipes, etc.

3.04 CONCRETE PLACEMENT

A. Place concrete within 30 days. Inspect membrane and repair any damage with patches of Preprufe Tape. Ensure all liner is removed from membrane and tape before concrete placement.