TECHNICAL DROP-IN SPECIFICATION

VaporBlock Plus® Plus 20 MIL

Under-Slab Vapor and Gas Retarder

The following technical drop-in specifications are provided as guidelines to be customized and finalized by the design engineer for preparing specific project specifications. This information is provided for reference purposes only and is not intended as a warranty or guarantee. Viaflex Inc. assumes no liability in connection with the use of this information. Please visit the Viaflex website at www.viaflex.com for current product specification sheets.

**Index**

**Description**

1. General
2. Related Work
3. Reference Standards
4. Quality Assurance
5. Manufactures Qualifications
6. Installer Qualifications
7. Warranties

**Materials**

1. General
2. RLC Materials
3. Seaming Materials
4. Ballast System

**Submittals**

1. Pre-Installation Requirements
2. Post-Installation Requirements

**Construction**

1. Shipping, Handling & Storage
2. Subgrade Preparation
3. RLC Placement
4. Field Seams
5. Repair Procedures
6. Ballasting

**Table 1: Required RLC Properties**

**UNDER-SLAB VAPOR AND GAS RETARDER**

High-performance, under-slab vapor barrier designed to retard moisture and gas migration through concrete slabs and walls to protect your structures from mold, mildews and fungi.

1. **DESCRIPTION**
2. General:

VaporBlock® Plus 20 cost-effectively controls moisture and gas within a building’s interior by preventing water vapor and gas from permeating concrete. Made from state-of-the-art polyethylene resins, VaporBlock Plus greatly reduces condensation and the potential for mold formation in a building’s interior, while serving as a highly resilient under slab and wall barrier designed to restrict naturally occurring gases from migrating through the ground and concrete slab, thus protecting flooring and furnishings from moisture migration. VaporBlock Plus 20 is designed for use under concrete slabs, in crawl spaces and in foundation walls. VaporBlock Plus 20 installation helps ensure quality construction and energy savings in building projects.

1. COMPOSITION & MATERIALS:

VaporBlock Plus 20 is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

1. TYPE:

VaporBlock Plus 20 high performance vapor and gas retarders are used in residential and commercial projects to impede moisture and gas from entering the structure. VaporBlock Plus 20 meets and exceeds Class A, B and C requirements under ASTM E1745*.*

4. SIZES:

VaporBlock Plus 20 is available in 10' × 150' rolls

Custom sizing is available.

5. COLORS:

1. One side gold and one side white is the standard color for VaporBlock Plus 20
2. BENEFITS:
3. Very low moisture vapor permeability
4. Meets and exceeds ASTM E1745 requirements
5. Resists attack by organisms in the contacting soil
6. Greatly reduces damaging moisture and gas migration through walls and under concrete slabs
7. Resists tearing and puncture during the installation phases

7. Warranties:

Manufacturer of the RLC will warrant the material to the installer on a pro rata basis for five years after the final acceptance of the Work. This warranty shall include but not be limited to defects related to workmanship and manufacturing.

**B. TECHNICAL DATA**

1. APPLICABLE STANDARDS:

American Concrete Institute (ACI) -

ACI 302.2R-06 Guide for Concrete Floor and Slab Construction

ASTM International.

1. ASTM D1709 Standard Test Methods for Impact Resistance of Plastic Film by the Free- Falling Dart Method
2. ASTM E96 Standard Test Methods for Water Vapor Transmission of Materials
3. ASTM E154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover
4. ASTM E1745 Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs
5. APPROVALS:

Contact Viaflex Inc., for information about approvals by specific agencies and code bodies.

1. **INSTALLATION**
2. PREPARATORY WORK:
3. VaporBlock® Plus 20 is provided folded and rolled on heavy duty cores for ease of installation and handling. Installation instructions and ASTM E1745 classifications accompany each roll.
4. Deliver products in manufacturer’s original, unopened, undamaged containers with identification labels intact. Store materials protected from exposure to ultraviolet light, excessive moisture, heat and sources of ignition. Verify that site conditions are acceptable and approved for installation. Do not proceed with installation until unacceptable conditions are corrected.
5. METHODS

Instructions on architectural and structural drawings should be reviewed and followed. General installation instructions are detailed below or at www.viaflex.com.

1. Level and tamp or roll the granular base as specified by architectural or structural drawings. If sharp crushed rock is used, a 1/2" (12.7 mm) layer of fine grade compactable fill is required between the base and the vapor retarder.
2. Unroll the vapor retarder with the longest dimension parallel to the direction of the pour. Open all folds to full width.
3. Overlap the vapor retarder 12" (152 mm) and seal with Vapor Seal tape or equivalent. In a typical floor slab below grade, lay the vapor retarder over the footing and terminate it at the vertical wall and footing corner. Seal with an adhesive-type water stop.
4. Repair any tears or punctures using a vapor retarder patch that overlaps the damaged area by 6" (152 mm) in all directions. Tape around the patch perimeter.
5. Seal all holes or openings in the vapor retarder, and seal around plumbing systems, conduit, support columns or any item that passes through the vapor retarder and floor slab. For sealing pipe penetrations, Viaflex’s VaporBoot Plus System includes tape and precut pipe boots. Pipe boots can also be fabricated from an 12" (457 mm) square of the vapor retarder and sealed using stretchable butyl adhesive tape with a split release liner. Cut a hole in the vapor retarder approximately 1/2" (12.7 mm) smaller than the outside diameter of the penetration and make 4 - 8 cuts 1/4" (6.4 mm) from the inside of the hole. Force the vapor retarder square over the penetration to form a tight-fitting lip. Fold the tape in half and remove 1/2 of the release liner. Wrap it around the pipe and allow 1" (25.4 mm) extra for over- lap sealing. Peel off the second half of the release liner and work the tape outward, gradually forming a complete seal. Finish the boot installation by taping completely around the 18" × 18" (457 × 457 mm) exterior edge of the boot with VaporBond® tape.
6. Pipe boots can also be sealed to the pipe using an elastomeric sealant (polyurethane or butyl caulk) and spiral wrapping with seaming tape until a seal is achieved.

3. PRECAUTIONS:

1. Use only brick-type or chair-type reinforcing bar supports to protect the vapor retarder from puncture and avoid driving stakes through it. If this cannot be avoided, repair each individual hole.
2. To avoid penetrating VaporBlock® Plus 20 when installing screed supports, utilize non- penetrating supports such as the Mako Screed Support System.
3. Use additional care if sharp crushed rock is used as a cushion or blotter layer between the vapor retarder and the slab. Washed rock will provide less chance of damage during placement. Protect the blotter layer from precipitation before concrete is placed.
4. When placing concrete on a vapor retarder in hot weather, use a wet curing blanket to prevent the concrete from shrinking, curling or cracking as a result of rapid drying.

4. BUILDING CODES:

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

**C. AVAILABILITY & COST**

The Contractor shall submit the following to the CQA Engineer:

1. AVAILABILITY:

VaporBlock Plus 20 is available through reputable construction supply houses across the United States and Canada:

2. COST:

Cost information may be obtained from any qualified distributor. Contact the manufacturer for local distribution information.

**D. WARRANTY:**

Consult Vialex Inc. for detailed warranty information:

The RLC shall be shipped, handled, and stored in strict accordance with the Manufacturer's recommendations.

1. **MAINTENANCE:**

No maintenance is required after installation.

1. **TECHNICAL PROPERTIES:**

Table 1 Physical Properties

|  |  |
| --- | --- |
| **Product** | **VaporBlock Plus® Plus 20** |
| Nominal Thickness | 19.4 mil |
| Weight | 102 lbs/MSF |
| Classification (ASTM E 1745) | Class A, B, & C |
| Tensile Strength, new material (ASTM E154) | 58 lbs/in |
| Tensile Strength, after soaking (ASTM E 154) | 59 lbs/in |
| Puncture Resistance (ASTM D 170) | 2600 g |
| Maximum Use Temperature | 180° F |
| Minimum Use Temperature | -70° F |
| Water Vapor Permeance (ASTM E 154 Section 7 ASTM E 96 Procedure B) | 0.0098 grain/hr•ft² |

Notes:

1. The Engineer may allow alternates to these requirements.