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RESEARCH REPORT: RR 25546
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GENERAL APPROVAL – Renewal - VaporLock-m™ Methane Barrier System for Below-Grade Water Proofing and Gas Barrier.

DETAIL

VaporLock-m™ Methane Barrier System is composed of Tuff-N-Dri or Tuff-N-Dri MV installed over a geotextile fabric or a Class A Vapor Barrier consisting a 10 mil thick polyolefin geomembrane. Tuff-N-Dri® or Tuff-N-Dri MV is a fluid-applied, single component, polymer-modified asphalt emulsion. The VaporLock-m-system is designed for applications on grade, over a sand substrate, or over unusually irregular substrata such as wood lagging. Tuff-n-Dri is applied directly to substrata such as cast in place (CIP) concrete or concrete masonry units (CMU), and on decks. The minimum thickness of the system is 60 mils total, when measuring the composite of geotextile fabric and applied cured polymer-modified asphalt emulsion; the thickness of the applied cured film shall be no less than 50 mils. The minimum thickness of the system is 55 mils, when measuring the composite of polyolefin membrane and applied cured polymer modified asphalt emulsion; the thickness of the applied cured film shall be no less than 50 mils. For applications directly to solid substrate, a 70 mil wet film thickness shall be applied as per the application instructions. Geotextile fabrics are adjoined by seams overlapping minimum 4 inches in which the bottom geotextile fabric is sprayed with 65 mil thick coating (40 mil dry, minimum) of the Tuff-N-Dri or Tuff-N-Dri MV, as applicable and the top (geotextile) press bonded to it manually. Polyolefin geomembranes are adjoined by seams overlapping minimum 5 inches in which the bottom polyolefin geomembrane is sprayed with 65 mil thick coating (40 mil dry, minimum) of the Tuff-N-Dri MV, as applicable and the top (Polyolefin geomembrane) press bonded to it manually.

The repair procedures for the VaporLok-m™ Methane Barrier System are outlined below:

1. Voids found after the membrane has cured may be repaired by spraying the void and 2 inches surrounding the void with Tuff-N-Dri (MV) the 70 mils wet(44 dry) required. Alternately, the Tuff-N-Dri (MV) membrane may be troweled or brushed into the void and the surrounding 2 inches. Multiple troweled or brushed coats may be required to achieve the required thickness.

2. Small areas (up to 8 inch square areas) of barrier membrane that have to be repaired due to faulty installation or because of thickness sampling shall be repaired in the following manner. First a tack coat of Tuff-N-Dri shall be applied to cover the repair area and a minimum of 3 inches beyond the borders of the repair area. Next, a piece of geotextile or polyolefin geomembrane, depending on the original carrier fabric used is placed so that it extends over the repair area and 2 inches beyond the borders of the area. Then apply a 70 mil wet (44 mil) dry coat of Tuff-N-Dri over the patch.

3. Large patches shall be handled in the same manner as the original installation of the methane barrier membrane, e.g. seams with 4 inch overlaps adhered with 60 wet mils of Tuff-N-Dri MV on installations using geotextile fabric, seams with 5 inch overlap adhered with 60 wet mils of Tuff-N-Dri MV for installations using polyolefin geomembranes, and the fabric field sprayed to achieve 44 dry mil membrane thickness

This product is approved for below-grade gas barrier subject to the following conditions:

1. VaporLock-m™ Methane Barrier System shall be supplied in clearly marked containers bearing the brand name and product identification.

2. The manufacturer shall provide quality assurance of the materials supplied as to their formulation.

3. Application of the product shall be accomplished by an applicator approved by the manufacturer. A written statement by the manufacturer stating that the applicator is an approved applicator is required prior to use of the product.

4. All surfaces to receive membrane shall be free of laitance, sharp projections, oil, dirt or other contaminants. Prepare surfaces in accordance with the manufacturer's instructions.

5. Installation of the materials shall be in accordance with the manufacturer's instructions, a copy of which shall be kept at the job site. All carrier materials (geotextile and polyolefin) used by the installer must meet the basic

requirements in this report and be on the Approved Carrier Material List provided by Tremco Barrier Solutions.

6. Complete details for the membrane system are submitted for plan check and a building permit is obtained.

7. The following field tests in accordance with the Tremco Barrier Solutions Field Installation and Repair Procedure are required: (A copy of the Installation and Repair Procedures is on file with Engineering Research Section.)

    a. Perform Thickness Sample Test at every 500 square feet.
    b. Perform Smoke Test for the entire site at the interval not more than 50,000 sq. ft. each.

8. Protection for the membrane shall be provided in accordance with the written instructions by the engineer of the record.

9. Prior to placing the concrete slab over the membrane, the membrane installer shall certify the membrane to be installed and tested in accordance with the manufacturer's specifications and to be free of leaks.

10. The membrane is not to be placed under the building footings.

11. For gas membrane installation, continuous inspection by a registered deputy inspector certified by Tremco Barrier Solutions, Inc., and registered in accordance with the requirements specified in Section 1704.2 of the 2020 Los Angeles City Building Code for special inspection is required.

DISCUSSION

The report is in compliance with the 2020 Los Angeles City Building Code.

The use of VaporLock-™ Methane Barrier System for water-proofing and gas barrier is based on tests in accordance with below-grade water proofing and the methane barrier test criteria.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this Approval have been met in the project in which it is to be used.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

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