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## DIVISION: 07 THERMAL AND MOISTURE PROTECTION

### Section: 07280 – Water-resistive Barriers

#### REPORT HOLDER:

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#### EVALUATION FOR:

**Tremco Barrier Solution's Enviro-Dri Weather Resistive Barrier (WRB) System consisting of Enviro-Dri Field Membrane and Enviro-Dri Joint Sealant.**

## 1.0 EVALUATION SCOPE

### 1.1 Compliance with codes:

- 2006 International Building Code® (IBC)
- 2006 International Residential Code® (IRC)

### 1.2 Evaluated in accordance with:

- ICC AC212 approved October 2009

#### Properties evaluated:

Water-resistive barrier

## 2.0 USES

TBS's Enviro-Dri WRB System is used as an alternative to the water-resistive barrier specified in the IBC and IRC when installed over plywood or oriented strand board (OSB) sheathing in exterior walls of non-fire-rated construction of any construction type.

## 3.0 DESCRIPTION

### 3.1 General:

The TBS Water-resistive Barrier system consists of a treatment to seal sheathing joints and a vapor-permeable water-resistive barrier coating. It may also include an integrated counter-

flashing over window and door openings, at roof sections abutting vertical wall sections, and at the lower edge of the sheathing overhanging the top of the foundation wall.

### 3.1.1 Enviro-Dri Joint Sealant Material:

Enviro-Dri Joint Sealant is a single component, flexible, water-based, polymer-modified asphalt emulsion joint sealing material packaged in 52-gallon (197 L) drums, having a one-year shelf life when stored at temperatures between 36°F and 100 °F (2°C and 38 °C) and out of direct sunlight.

### 3.1.2 Enviro-Dri Field Membrane:

Enviro-Dri Field Membrane is a single component, flexible, polymer-modified asphalt emulsion coating material. It is packaged in 52-gallon (197 L) drums or in 330-gallon (1,249 L) totes, and is available in bulk. It has a one-year shelf life when stored at temperatures between 36°F and 100 °F (2°C and 38 °C) and out of direct sunlight.

### 3.1.3 Enviro-Dri Joint Fabric:

Enviro-Dri Joint Fabric is a porous fabric with a minimum weight of 2.75 oz/yd<sup>2</sup> (93.3 g/m<sup>2</sup>) woven from polyester, polypropylene, or glass fibers and, if needed, stabilized with a suitable binder. The material is supplied in rolls of varying lengths and widths, including 150-foot (45.7 m) lengths and 4.8-inch (12.1 cm) width.

### 3.1.4 Enviro-Dri Counterflashing Fabric:

Enviro-Dri Counterflashing Fabric consists of a porous base fabric with a minimum weight of 2.75 oz/yd<sup>2</sup> (93.3 g/m<sup>2</sup>) fabric woven from polyester, poly-propylene, or glass fibers and, if needed, stabilized with a suitable binder, that is either coated or laminated to a polymeric film to render the majority of the width impermeable to liquids. The material is supplied in rolls of varying lengths and widths, including 150-foot (45.7 m) lengths and 4.8-inch (12.1 cm) width with a 4-inch (10.2 cm) impermeable portion of the width.

### 3.2 Water Vapor Transmission:

The water vapor transmission value for Enviro-Dri Field Membrane satisfies the requirements of Table 1, Grade C [in compliance with the ICC-



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ES Acceptance Criteria for Water-resistive Barriers (AC38)].

### 3.3 Sheathing:

The use of Enviro-Dri Water-resistive Barrier system is limited to applications to the following sheathing materials:

- Plywood, Exposure 1, complying with U.S. DOC PS-1.
- Oriented Strand Board (OSB), Exposure 1, complying with U.S. DOC PS-2.

## 4.0 INSTALLATION

### 4.1 General:

The installation of the Enviro-Dri Water-resistive Barrier system must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite during application.

### 4.2 Substrate Preparation:

The Enviro-Dri WRB System is installed on the exterior surface of the vertical wall sheathing. The substrate must be a type listed in section 3.3, and approved by the local code authority for use with the Enviro-Dri WRB System. Ensure that the sheathing is structurally sound, complete, securely fastened, and free of loose material, voids, projections, or other conditions that may interfere with the application of the WRB System. The substrate shall be prepared so as to be free of foreign materials such as oil, dust, dirt, paint, wax, water repellents, liquid water, frost, snow, ice, or any other materials that may inhibit adhesion.

Ensure that the substrate is sufficiently dry. There should be no visible water in any joints, and liquid water should not transfer to your hand as it is rubbed across the exterior surface of the sheathing. Plywood or OSB moisture content shall not exceed 25% if measured by a probe-type moisture meter.

Sheathing gaps that exceed ¼ inch (6.4 mm) may require special treatment. The exterior sheathing surface with un-backed gaps greater

than ¼ inch in width must be covered with Enviro-Dri Joint Fabric. The Enviro-Dri Joint Fabric is subsequently fully coated and adhered to the exterior surface of the sheathing on both sides of the gap with either Enviro-Dri Field Membrane or Enviro-Dri Joint Sealant. Backed gaps greater than ¼ inch in width do not require the use of Enviro-Dri Joint Fabric. Installers may choose to use Enviro-Dri Joint Fabric on other gaps as a matter of personal preference regardless of backing or joint width. Apply no more Enviro-Dri Joint Fabric than can be fully coated and adhered to the substrate the same day and before any rain.

### 4.3 Enviro-Dri System Application:

#### 4.3.1 Weather:

The Enviro-Dri WRB System can be applied in a broad range of weather conditions. Any weather condition that allows the installer to achieve a properly-cured, finished, coated and sealed Enviro-Dri WRB System that isn't damaged by subsequent precipitation or moisture condensation is permissible. It is the end result that that should be evaluated. If the end result is a fully cured system, with complete coverage of the sheathing with the proper thickness of Enviro-Dri Field Membrane and proper sealing of the joints between sheathing panels, the weather was acceptable.

The air and surface temperatures at the time of application are permitted to be between 0°F (-18°C) and 130°F (54°C). The Enviro-Dri WRB System should not be installed during rain or impending rain that might damage the system before it can sufficiently dry and cure. The substrate must be sufficiently dry to achieve a quality application; see section 4.2 above. The experience of the installer is the best guide to when the weather is suitable; he is responsible to achieve the properly cured, coated and sealed system.

#### 4.3.2 Drying and Curing:

Generally, both Enviro-Dri Field Membrane and Enviro-Dri Joint Sealant dry quickly to the touch when applied to approved substrates in the appropriate condition. At 70°F (21°C) and 50% RH they are dry to the touch within a 2-4 hours.



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Generally, cool or damp conditions will slow drying, while hot or dry conditions will accelerate drying. Enviro-Dri Joint Sealant will normally take longer to dry than Enviro-Dri Field Membrane because it is generally applied in a thicker application. Drying time will vary with substrate and individual job conditions.

When the temperatures are below freezing, the WRB System can be installed but will freeze before it is fully dry and cured. The freezing does not damage the installation; it will continue to “freeze-dry” in place resulting in a dry and cured system.

#### **4.3.3 Exposure**

The Enviro-Dri WRB System should not be left exposed more than 120 days prior to being covered with the exterior cladding material. Both Enviro-Dri Field Membrane and Enviro-Dri Joint Sealant, when left exposed to UV conditions, may exhibit minor surface cracking, also known as ‘crazing’. This condition is normal and expected, and is cosmetic only. It has no significant effect on the performance of the products.

Care should be taken to prevent water or condensation on the unprotected inside surface of sheathing. Internal moisture from temporary heaters, inadequate roof cover, concrete foundations and floors are sources of internal moisture that can be detrimental to sheathing, even when protected with the Enviro-Dri WRB System on the outside.

#### **4.3.4 Enviro-Dri Field Membrane Application:**

The WRB System materials can be applied using a brush, trowel, manual roller or power roller or spray equipment over sheathing materials listed in section 3.3.

The sheathing area should be fully and evenly coated with Enviro-Dri Field Membrane applied at a minimum thickness of 12 mils. The application thickness of the wet coating can be checked using a notch film gauge. The proper application thickness results in an approximate coverage rate of  $120 \pm 15$  ft<sup>2</sup> per gallon of Enviro-Dri Field Membrane. The coverage rate on individual installations will vary due to surface roughness, sheathing condition, and/or other varying conditions.

#### **4.3.5 Enviro-Dri Joint Sealant Application:**

Joints between sheathing panels or between sheathing panels and framing materials must be sealed using either Enviro-Dri Joint Sealant alone or using Enviro-Dri Joint Fabric coated with either Enviro-Dri Field Membrane or Enviro-Dri Joint Sealant.

When using Enviro-Dri Joint Sealant alone, sheathing panel joints wide enough to be filled with Enviro-Dri Joint Sealant may be sealed by filling the joint Enviro-Dri Joint Sealant material. The full depth of the joint should be filled with the Enviro-Dri Joint Sealant material. After curing, the Enviro-Dri Joint Sealant material should span the joint and have a minimum thickness of approximately 2/3 the depth of the joint. For joints between tightly butted sheathing panels, the joint should be sealed by application of a continuous layer of Enviro-Dri Joint Sealant to the exterior surface of the adjoining sheathing and across the joint. The Enviro-Dri Joint Sealant should extend a minimum of ½ inch onto each adjoining sheathing panel and have a minimum wet thickness of 12 mils, which will cure to a thickness of approximately 8 mils.

For wide joints that are backed with framing or other material, the joint between the interior edge of the sheathing panel and the backing should be sealed with Enviro-Dri Joint Sealant at a minimum of ¼ inch wet thickness, measured as a radius from the joint. This will cure to a thickness exceeding 1/8 inch.

When using Enviro-Dri Joint Fabric, the entire fabric must be fully coated as well as adhered and sealed to the exterior surface of the sheathing on both sides of the joint with either Enviro-Dri Field Membrane or Enviro-Dri Joint Sealant. Sufficient care must be taken to insure that any wrinkles or other irregularities are further treated to the extent that no water or air can penetrate the plane of the exterior sheathing by passing either through or around the coated and sealed Enviro-Dri Joint Fabric. The Enviro-Dri Joint Fabric may be coated and sealed with either Enviro-Dri Field Membrane or Enviro-Dri Joint Sealant.



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Un-backed joints, greater than ¼ inch in width, must use the Enviro-Dri Joint Fabric sealing option.

It is normal for less than the entire volume of the joint to be filled with Enviro-Dri Joint Sealant. Joints sealed with Enviro-Dri Joint Sealant need not be totally filled to be sealed

It is normal for the Enviro-Dri Joint Sealant material to cover a portion of the face of the sheathing near the joint being sealed. Except for the application to tightly butted sheathing panel joints discussed above, there is no required minimum width of Enviro-Dri Joint Sealant material coating the sheathing surface at the joint, nor is there a requirement for the minimum depth of such coating.

#### 4.3.6 Application Order:

The order of application of Enviro-Dri Field Membrane and Enviro-Dri Joint Sealant materials is discretionary. Enviro-Dri Field Membrane may be applied to the sheathing surface followed by the application of the joint treatment, or the joint treatment may be completed first, followed by application of the Enviro-Dri Field Membrane. For joints using Enviro-Dri Joint Fabric followed by application of Enviro-Dri Field Membrane, only one application of the Enviro-Dri Field Membrane is required and may occur as the majority of the wall area is receiving the Enviro-Dri Field Membrane application.

#### 5.0 CONDITIONS OF USE

The Enviro-Dri WRB System described in this report complies with, or is a suitable alternative to the requirements specified in the codes listed in section 1.0 of this report, subject to the following conditions:

**5.1** Installation must comply with this report, the manufacturer's published installation instructions, and the applicable code. In the event of a conflict between this report and the manufacturer's published installation instructions, this report shall prevail.

**5.2** Inspections required at the jobsite must be in accordance with IBC Sections 1704.1 and 1704.13, which also apply for compliance with

the IRC.

**5.3** The Enviro-Dri WRB System is not intended for use in repairing moving joints or cracks.

**5.4** The Enviro-Dri WRB System is intended for installation to vertical walls and is not for use on parapets, sloped surfaces, or horizontal surfaces.

**5.5** The Enviro-Dri WRB System must be covered with an exterior wall finish or covering complying with the applicable code or a current evaluation report.

#### 6.0 EVIDENCE SUBMITTED

Data accordance with ICC-ES Acceptance Criteria for Water-resistive Coatings Used as Weather-resistive Barriers over Exterior Sheathing (AC212), approved October 2009.

#### 7.0 IDENTIFICATION

Shipping containers of the Enviro-Dri WRB System emulsion products described in this report must be identified by a label with the following information: product name, manufacturer's name (Tremco Barrier Solutions) and address, identification of components, lot or batch number, quantity of material in packaged container, storage instructions and shelf-life and the IAPMO ES Mark of Conformity.



**IAPMO #0157**

A handwritten signature in black ink, appearing to read 'Amir' followed by a flourish.

Director of Evaluation Services