

## SECTION 07 25 00

### FLASHING AND SEALING FRAMING WITH NON-CHEMICAL MOISTURE AND TERMITE BARRIERS

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*This guide specification has been prepared by Polyguard Products Inc., in printed and electronic media, as an aid to specifiers in preparing written construction documents for flashing and sill barrier systems. Polyguard® TRM Flashing, TRM UV2-40 and TRM Sill are used as a waterproofing membrane/vapor barrier to virtually eliminate water and vapor transmission. The TRM Flashing, TRM UV2-40 and TRM Sill are used to exclude both water and termites.*

*Edit entire master document to suit project requirements. Modify or add items as necessary. Delete items which are not applicable. Words and sentences may contain a choice to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance-, proprietary-, and/or descriptive-type specifications. Edit to avoid conflicting requirements. Editor notes to guide the specifier are included between lines of asterisks to assist in choices. Remove these editor notes before final printing of specification.*

*This guide specification is written around the Construction Specifications Institute (CSI) Section Format standards.*

*For specification assistance on specific product applications, please contact our offices or any of our local product representatives throughout the country.*

*Polyguard Products Inc. reserves the right to modify these guide specifications at any time. Updates for this guide specification will be posted on the manufacturer's web site and/or in printed media as they occur. Manufacturer makes no expressed or implied warranties regarding content, errors, or omissions in the information presented.*

#### PART 1 GENERAL

##### 1.07 SECTION INCLUDES

- A. Surface preparation.
- B. Sill Moisture
- C. Flashing barrier at juncture of horizontal concrete and exterior wall sheathing,
- D. Seam and window barrier over joints in exterior wall sheathing and as a exterior window flashing.
- E. Accessory Products.

##### 1.02 RELATED SECTIONS

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*Specifier Notes: Edit the list of related sections as required for the project. List other sections dealing with work directly related to this section.*

- A. Section 03 15 00 – Concrete Accessories.
- B. Section 03 30 00 – Cast-in-Place Concrete.
- C. Section 07 21 00 – Thermal Insulation.
- D. Section 07 60 00 – Flashing and Sheet Metal
- E. Section 07 92 00 – Joint Sealants
- F. Section 31 31 16 – Pest Control Barriers

##### 1.03 REFERENCES

- A. International Code Council (ICC):
  - 1. AC 380 - Acceptance Criteria for Termite Physical Barriers - Evaluation Report demonstrating five-year multi-site field trial against Formosan termites, with zero failures, plus other criteria.

- B. ASTM International (ASTM):
  1. ASTM D146/D146M - Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing.
  2. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
  3. ASTM D 882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
  4. ASTM D 903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
  5. ASTM D 1000 - Standard Test Methods for Pressure-Sensitive, Adhesive-Coated Tapes used for Electrical and Electronic Applications.
  6. ASTM D 1876 - Standard Test Method for Peel Resistance of Adhesives (T Peel Test).
  7. ASTM D 5385 - Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes.
  8. ASTM E 96 (Method B) - Standard Test Methods for Water Vapor Transmission of Materials.
  9. ASTM E 154 - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
  10. ASTM F 2130 - Standard Test Method for Measuring Repellency, Retention, and Penetration of Liquid Pesticide Formulation Through Protective Clothing Materials.
- C. National Fire Protection Association (NFPA):
  - A. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components.

#### 1.04 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data:
  1. Manufacturer's data sheets on each product to be used.
  2. Preparation instructions and recommendations.
  3. Storage and handling requirements and recommendations.
  4. Typical installation methods.
  5. Include certification of data indicating VOC (Volatile Organic Compound) content of all components of waterproofing system.

**\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.**

- C. Verification Samples: Two representative units of each type, size, pattern, and color.
  1. Membrane
  2. Accessories.
- D. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.
- E. Proof of long-term termite resistance. Submit a copy of ICC ESR Evaluation Report showing compliance with AC 380 – International Code Council - Acceptance Criteria for Termite Physical Barriers demonstrating five-year multi-site-controlled field trial against Formosan termites with zero failures, plus other criteria.
- F. Sustainable Design Submittals: LEED v4:
  1. EA prerequisite and credit – Energy Performance:
    - a. Indicate how this material can improve energy conservation.
  2. MR credit - Regional Materials and Recycling content:
    - a. Indicate percentage of materials recycled pre-consumer.
    - b. Indicate percentage of materials recycled post-consumer.
    - c. Indicate percentage of materials sourced within 100 miles of the manufacturing facility.
  3. MR credit – Building Product Disclosure and Optimization:
    - a. Indicate whether the building product(s) have published a complete Health Product Declaration (HPD) with full disclosure of known hazards to at least 0.1 percent (1000 ppm) in compliance with the Health Product Declaration open Standard addressing all components of the system.
  4. EA prerequisite and credit – Energy Performance:
    - a. Indicate how this material can improve energy conservation.
  5. MR credit: Construction and Demolition Waste Management:
    - a. Indicate what portion of the building product is recyclable in areas where there is a facility to recycle.
    - b. For each recyclable material listed in 5.a above, list its weight.

6. EQ credit – Low Emitting Materials:
  - a. For each building product material used on the interior of the structure, and applied on site, list the VOC content and where the material is applied.
  - b. For each building product material used on the exterior of the structure, and applied on site, list the VOC content and where the material is applied.
7. IN credit - Innovation – Interior Wellness and Comfort:
  - a. Provide test results documenting ability of product to physically block termite access into structure, thus reducing the usage of pesticides.
  - b. Provide details of why the product can increase long term comfort or interior wellness of the building occupants.
8. IN credit – Innovation - Indoor Integrated Pest Management:
  - a. LEED v4 standards call out the implementation of IPM (Integrated Pest Management). Typical LEED wording in IPM guidelines is “Nonchemical pest preventive measures, either designed into the structure or implemented as part of pest management activities.” Describe the areas of the building envelope where this building product will provide protection against entry of insects.
9. LEED v4 for Homes – SS credit - Nontoxic Pest Control - Pest Control Alternatives:
  - a. Provide documentation of the ability of product to physically block termite or other pest access into structure.
10. LEED v4 for Homes – EA credit – Air Infiltration:
  - a. Provide details of how the building product will reduce air infiltration to the structure.

#### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Barrier System Sheet Membrane must be manufactured by a company with a minimum of ten (10) years of experience in the production and sales of membrane waterproofing materials.
- B. Applicator Qualifications: A firm having at least three (3) years of experience in applying these types of specified materials and specifically accepted in writing by the membrane system manufacturer.
- C. Materials: For each type of material required to complete the work of this section, provide primary materials which are the products of a single manufacturer.
- D. Pre-Application Conference: A pre-application conference shall be held to establish procedures and to review conditions, installation procedures and coordination with other related work. Meeting agenda shall include review of special details and flashing.
- E. Manufacturer’s Representative: Arrange to have trained representative of the manufacturer on site periodically to review installation procedures.

#### 1.06 PRE-INSTALLATION CONFERENCE

- A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Manufacturer’s Representative, Contractor, and trades involved. Agenda shall include schedule, responsibilities, critical path items, approvals, and to establish procedures and to review conditions, installation procedures and coordination with other related work. Review the details and waterproofing specifications.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Store materials in a clean, dry area in accordance with manufacturer's instructions.
- C. Store adhesives at temperatures of 40°F (5°C) and above to facilitate handling.
- D. Store membrane cartons on pallets.
- E. Do not store at temperatures above 90°F (32°C) for extended periods.
- F. Keep away from sparks and flames.
- G. Completely cover when stored outside. Protect from rain.
- H. Protect materials during handling and application to prevent damage or contamination.
- I. Avoid use of products which contain tars, solvents, pitches, polysulfide polymers, or PVC materials that may come into contact with waterproofing membrane system.

## 1.08 PROJECT CONDITIONS

- A. Perform work only when existing and forecasted weather conditions are within the limits established by the barrier manufacturer. Install TRM Flashing, TRM UV2-40 and/or TRM Sill Membrane when temperature is 30°F (-1°C) and rising.
- B. Do not install barriers unless ambient and surface temperatures are above 30 degrees and rising, and surface is dry.
- C. Do not leave TRM Flashing or TRM Sill barrier exposed to ultraviolet light for longer than 30 days and TRM UV2-40 for longer than 24 months.
- D. Warn personnel against breathing of vapors and contact with skin and eyes; wear appropriate protective clothing and respiratory equipment.
- E. Keep flammable products away from spark or flame. Post "No Smoking" signs. Do not allow use of spark-producing equipment during application and until all vapors have dissipated.
- F. Maintain work area in a neat and workmanlike condition. Remove empty cartons and rubbish from the site daily.

## 1.09 WARRANTY

- A. Manufacturer warrants only that this product is free of defects, since many factors which affect the results obtained from this product are beyond our control, such as weather, workmanship, equipment utilized and prior condition of the substrate. We will replace, at no charge, proven defective product within twelve (12) months of purchase, provided it has been applied in accordance with our written directions for uses we recommended as suitable for this product. Proof of purchase must be provided. A five (5) year material or system warranty may be available upon request. Contact Polyguard Products, Inc. for further details.

## PART 2 PRODUCTS

### 2.01 MANUFACTURER

- A. Polyguard Products Inc. P.O. Box 755 Ennis, TX 75120-0755; Phone: (214) 515-5000; Email: [info@polyguard.com](mailto:info@polyguard.com)

### 2.02 SYSTEM MATERIALS

- A. FLASHING, MOISTURE AND TERMITE BARRIER / SEAM AND WINDOW BARRIER
  - 1. Basis of Design: TRM Flashing is a strong, pliable, self- adhesive sheet consisting of a 4-mil high density polyethylene film bonded to 36 mils of sealant. It is wound on a disposable treated release. TRM Flashing is formulated for low temperature application down to 30°F (-1°C) and is UV resistant for up to 30 days (1 month).

#### PHYSICAL PROPERTIES - TRM Flashing

PROPERTY	TEST METHOD	TYPICAL VALUE
COLOR	-	Red / White
MEMBRANE THICKNESS	ASTM D 1000	40 mils
LONG TERM TESTING AGAINST TERMITE PENETRATION	ICC AC 380	ICC AC 380 Compliance <a href="#">ICC ESR-3632</a>
ELONGATION OF BARRIER SEALANT - PERCENT STRETCH BEFORE FAILURE	ASTM D 412	> 1000%
PESTICIDE REPELLENCY (CHLORDANE, FIPRONIL, PERMETHRIN)	ASTM F 2130	0% penetration
PERMEANCE TO MOISTURE / WATER VAPOR	ASTM E 96-B	0.035 Grains/ft <sup>2</sup> /hr./in
TENSILE STRENGTH – FILM BACKING	ASTM D 882	5470 PSI
TENSILE STRENGTH – BARRIER COMPOSITE	ASTM D 412 (Modified Die C)	325 PSI
PEEL ADHESION	ASTM D 903	12.1 lb./in width
OVERLAP BOND	ASTM D 1876	8.0 lb./in width
LOW TEMPERATURE FLEXIBILITY	ASTM D146 180° bend over 1" mandrel @ -25°F (-32°C)	No cracking or delamination
BARRIER PUNCTURE RESISTANCE	ASTM E 154 (Blunt Instrument)	50 lb.
RESISTANCE TO HYDROSTATIC HEAD	ASTM D 5385	231 ft.

2. Basis of Design: TRM UV2-40 is a strong, pliable, self-adhesive sheet consisting of a 4-mil high density polyethylene film bonded to 36 mils of sealant. It is wound on a disposable treated release sheet. TRM UV2-40 is formulated for low temperature application down to 30°F (-1°C) and is UV resistant for up to 24 months (2 years).

PHYSICAL PROPERTIES - TRM UV2-40

PROPERTY	TEST METHOD	TYPICAL VALUE
COLOR	-	Silver
MEMBRANE THICKNESS	ASTM D 1000	40 mils
LONG TERM TESTING AGAINST TERMITE PENETRATION	ICC AC 380	ICC AC 380 Compliance <a href="#">ICC ESR-3632</a>
ELONGATION OF BARRIER SEALANT - PERCENT STRETCH BEFORE FAILURE	ASTM D 412	> 1000%
PESTICIDE REPELLENCY (CHLORDANE, FIPRONIL, PERMETHRIN)	ASTM F 2130	0% penetration
PERMEANCE TO MOISTURE / WATER VAPOR	ASTM E 96-B	0.035 Grains/ft <sup>2</sup> /hr./in
TENSILE STRENGTH – FILM BACKING	ASTM D 882	5470 PSI
TENSILE STRENGTH – BARRIER COMPOSITE	ASTM D 412 (Modified Die C)	325 PSI
PEEL ADHESION	ASTM D 903	12.1 lb./in width
OVERLAP BOND	ASTM D 1876	8.0 lb./in width
LOW TEMPERATURE FLEXIBILITY	ASTM D146 180° bend over 1" mandrel @ -25°F (-32°C)	No cracking or delamination
BARRIER PUNCTURE RESISTANCE	ASTM E 154 (Blunt Instrument)	50 lb.
RESISTANCE TO HYDROSTATIC HEAD	ASTM D 5385	231 ft.
EVALUATION OF FIRE PROPAGATION OF BUILDING MATERIALS	NFPA 285	Compliant*

\*Related to specific assemblies

B. SILL MOISTURE AND TERMITE BARRIER

1. Basis of Design: TRM Sill is a 68-mil thickness of high strength film backed barrier sealant. TRM Sill is wound onto a disposable treated release sheet, which can be peeled away to expose the adhesive face just prior to application. TRM Sill is formulated for low temperature application down to 30°F (-1°C) and is UV resistant for up to 30 days (1 month).

PHYSICAL PROPERTIES – TRM Sill

PROPERTY	TEST METHOD	TYPICAL VALUE
COLOR	-	Red / White
MEMBRANE THICKNESS	ASTM D 1000	68 mils
LONG TERM TESTING AGAINST TERMITE PENETRATION	ICC AC 380	ICC AC 380 Compliance <a href="#">ICC ESR-3632</a>
PEEL ADHESION	ASTM D 903	17.0 lb./in width
ELONGATION OF BARRIER SEALANT – PERCENT STRETCH BEFORE FAILURE	ASTM D 412	> 1000%
LOW TEMPERATURE FLEXIBILITY	ASTM D146 180° bend over 1" mandrel @ -25°F (-32°C)	No cracking or delamination
PERMEANCE TO MOISTURE / WATER VAPOR	ASTM E 96-B	0.03 Grains/ft <sup>2</sup> /hr./in

2.03 SYSTEM ACCESSORIES

A. Surface Primer Roller-Grade Adhesive:

1. Polyguard® 650 LT Liquid Adhesive: A rubber-based, tacky adhesive which is specifically formulated to provide excellent adhesion.
2. Polyguard® California Sealant: A rubber-based sealant which is specifically formulated to provide excellent adhesion. The VOC (Volatile Organic Compound) content meets the South Coast Air Quality Management District regulations established under the February 1, 1991 version of Rule 1168 ©) (2) Adhesion and Sealant Applications. California Sealant is classified as an Architectural Sealant Primer Porous, with VOC of 527 g/L. Current SCAQMD regulations for this type sealant primer are 775 g/L.
3. Polyguard® 650 WB Liquid Adhesive: A water-based, rubber-based adhesive which is specifically formulated to provide excellent adhesion.

B. Barrier Sealant:

1. TRM Sealant is a waterproofing sealant plus a termite barrier. It is formulated from polymer asphalt which has been upgraded to incorporate a non-chemical termite and insect barrier. TRM Sealant is a component of the non-structural TRM Barrier System which, properly installed as part of the building envelope, acts as a barrier to termites and other pests. Because almost all pests are excluded for the life of the structure, the need for pesticide treatment should be over the life of the structure.

D. Detail Sealant:

1. Polyguard® Detail Sealant PW™: A single-component, STPE, 100% solid moisture-cured, elastomeric sealant. It is an environmentally friendly, non-isocyanate product that replaces silicone and urethane sealants. It is also a low VOC / HAPS-free, cold-applied, self-adhesive, elastomeric sealant.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Examine surfaces to receive sheet waterproofing membrane. Notify General Contractor if surfaces are not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.

### 3.02 SURFACE PREPARATION

- A. Protect adjacent surfaces not designated to receive waterproofing.
- B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions.
- C. Do not apply waterproofing to surfaces unacceptable to manufacturer.
- D. Concrete surfaces must be clean, smooth, and free of standing water.
- E. Prepare surfaces using the methods recommended by the manufacturer for achieving the best results for the substate under the project conditions.

### 3.03 MEMBRANE APPLICATION

#### A. INSTALLATION: FLASHING, MOISTURE AND TERMITE BARRIER

1. Install TRM Flashing and/or TRM UV2-40 in accordance with manufacturer's instructions.
2. Stir liquid adhesive before use. If using 650 LT Liquid Adhesive or California Sealant, apply at a rate of 250-300 square feet per gallon. If using 650 WB Liquid Adhesive, apply at a rate of 350-400 square feet per gallon. Coverage rate could vary drastically depending on the porosity of the exterior sheathing. Apply liquid adhesive to all surfaces which will receive TRM Flashing or TRM UV2-40.
3. Cut pieces of flashing to length as needed and apply to substrate once liquid adhesive has become tacky.
4. Place flashings with horizontal portion, tied into sill barrier and extending no closer than 1/2-inch from outside edge of horizontal surface.
5. Overlap adjacent sheets 2-inches minimum. Lap end joints 2-inches minimum.
6. Weather-lap flashings on vertical surfaces.
7. Roll flashings firmly into place using hand roller.
8. Apply Detail Sealant PW to horizontal terminating edges on walls, pipes, and other protrusions.

## B. INSTALLATION: SEAM AND WINDOW BARRIER

1. Install TRM Sill in accordance with manufacturer's instructions.
2. Stir Liquid Adhesive before use. If using 650 LT Liquid Adhesive or California Sealant, apply at a rate of 250-300 square feet per gallon. If using 650 WB Liquid Adhesive, apply at a rate of 350-400 square feet per gallon. Coverage rate could vary drastically depending on the porosity of the exterior sheathing.
3. Cut pieces of seam and window barrier to length as needed and apply to substrate 30 to 60 minutes after liquid adhesive has been applied.
  - a. Sheathing Joints:
    - i. Start application at bottom of wall and work up; weather lap joints.
    - ii. Center seam and window barrier over joints.
  - b. Windows:
    - i. Ensure that sheathing seams intersecting bottom of window are sealed before window is flashed.
    - ii. Do not tape seams above window until window flashing is completed.
    - iii. Install horizontal strip on sill.
    - iv. Set window frame.
    - v. Adhere vertical strips to jamb flanges and sheathing.
    - vi. Adhere horizontal strip to straight head flange and sheathing.
  - c. Lap end joints 2-inches minimum.
  - d. Roll barrier firmly into place using hand roller.

## C. INSTALLATION: SILL MOISTURE AND TERMITE BARRIER

1. Install TRM Sill in accordance with manufacturer's instructions.
  - a. Prime the concrete using primer recommended by Manufacturer.
  - b. Cut a length of barrier from the roll. For exterior perimeter framing, the width of the roll should be wide enough to extend 2-inch onto the exterior horizontal concrete. The length of the TRM Sill should be 1/2-inch longer than the sill which will go over it.
  - c. Once primer is dry place the length of barrier on the concrete, beginning about 1/2-inch before the beginning of the sill.
  - d. Peel away one end of the release sheet about 1/2 to 1-inch, exposing the face of the adhesive on one side.
  - e. Adhere the adhesive to the concrete at one end of where the sill will be positioned, remembering to leave about 1/4-inch of the adhesive past the end of the sill, and remembering to keep the barrier exactly in line with the location of the sill. There should be 1-inch of barrier exposed horizontally on exterior side and flush on the interior side of sill plate. On perimeter sill, the barrier must extend 1-inch horizontally on the interior side, and 2-inches onto the horizontal concrete underneath where the base flashing will be installed.
  - f. Without peeling away any more release sheet away, place the barrier along the full length of the sill location, leaving 1-inch exposed on either side. If the barrier is out of line with the sill, you can cut the tape and restart to make the barrier in line. (Note: Exact positioning is especially important since it is extremely difficult to remove the barrier once it has been adhered to the substrate.)
  - g. When the barrier is positioned properly, slowly peel away the remainder of the release liner, pressing the barrier down against the concrete as you go.
  - h. Installation of TRM Flashing or TRM UV2-40 is strongly recommended. This flashing will ensure a complete seal between the barrier and the sill and protect the vulnerable sheathing seams at slab level.

## 3.04 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

**\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection or construction. Delete if not required.**
- B. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.

## 3.05 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturers recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION