

SECTION 031521

TERMITE AND PEST BARRIERS FOR SLAB PENETRATIONS AND BLOCKOUTS

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by one of the following methods:

Microsoft Word 2016, 2013, and 2010: Display the FILE tab on the ribbon, click OPTIONS, then select DISPLAY. Select or deselect HIDDEN TEXT.

Corel WordPerfect: From the pull-down menus select VIEW, then select or deselect the HIDDEN TEXT option.

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Termite and pest control applied to slab blockout pest barriers.
 - 2. Termite control applied to slab penetrations.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. ASTM International (ASTM) www.astm.org:
 - 1. C29/C29M - Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate.
 - 2. C33/C33M - Standard Specification for Concrete Aggregates.
 - 3. C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 4. D146/D146M - Standard Test Methods for Sampling and Testing Bitumen-Saturated Felts and Woven Fabrics for Roofing and Waterproofing.
 - 5. D412 - Standard Specification for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers - Tension.
 - 6. D451 - 17 Standard Test Method for Sieve Analysis of Granular Mineral Surfacing For Asphalt Roofing Products -
 - 7. D570 - Standard Test Method for Water Absorption of Plastics.
 - 8. D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
 - 9. D1000 - Standard Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications.
 - 10. E11 - Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves.
 - 11. E96/E96M - Standard Test Method for Water Vapor Transmission of Materials.
 - 12. E154 - Standard Test Method for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
 - 13. F2130 - Standard Test Method for Measuring Repellency, Retention, and Penetration of Liquid Pesticide Formulation Through Protective Clothing Materials.
- B. ICC International Code Council
 - 1. ICC AC 380 - Acceptance Criteria for Termite Physical Barriers

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Product Data: Manufacturer's product description and application instructions
- B. Proof of long term termite resistance. Submit a copy of ICC ESR Evaluation Report showing compliance with ICC AC 380 – International Code Council - Acceptance Criteria for Termite Physical Barriers.

C. 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% (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 area(s) 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.

1.2 QUALITY ASSURANCE

- A. Installer Qualifications:
 1. Pest control operator licensed in jurisdiction where products are being installed.
 2. Trained by manufacturer in proper installation of products.
- B. Comply with requirements listed on EPA label, guide specification, and product data sheet.

1.3 DELIVERY, STORAGE AND HANDLING

- A. Protect products from weather, sparks, flames, excessive heat, cold, and lack of ventilation.

- B. Store products on pallets, covered to prevent water damage.
- C. Store flashing barrier between 50 and 75 degrees F prior to use.

1.4 PROJECT CONDITIONS

- A. Do not install flashing barrier unless ambient and surface temperatures are above 30 degrees F and rising.
- B. Do not leave flashing barrier exposed to ultraviolet light for longer than 30 days.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Contract Documents are based on products by Polyguard Products Inc., P.O. Box 755, Ennis, Texas 75120-0755, 214-515-5000, www.polyguardbarriers.com.
- B. Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 MATERIALS

- A. Particle Barrier:
 - 1. Product: TERM® Particle Barrier.
 - 2. Description: Selected quartz particles sorted and sized to block prevalent termite species in Project area.
 - 3. Physical properties:
 - a. Particle size: Minimum 85% of sieve size 8–14 tested to ASTM D451-17
 - b. Fineness module: 3.83, tested to ASTM C136/C136M, Table 1.
 - c. Weighted particle size: 1.72, tested with AIMS Software 2D.
 - d. Hardness: Minimum 6 on Moh's hardness scale.
 - e. Mean gradient angularity: 2000 to 3000, tested to ASTM C29/C29M and ASTM C33/C33M.
- B. Flashing Barrier:
 - 1. Product: TERM® Flashing Moisture | Termite Barrier.
 - 2. Description: 4 mil high density polyethylene film bonded to 36 mils of barrier sealant.
 - 3. Physical properties:
 - a. Long term resistance to termite penetration: Furnish ICC ESR Evaluation showing compliance to ICC AC380 Acceptance Criteria for Termite Physical Barriers http://www.icc-es.org/Reports/pdf_files/load_file.cfm?file_type=pdf&file_name=ESR-3632.pdf
 - b. Elongation of sealant: Minimum 1000 percent, tested to ASTM D412.
 - c. Tensile strength, film backing: 6500 PSI, tested to ASTM D882.
 - d. Tensile strength, barrier composite: 325 PSI, tested to ASTM D412 using modified Die C.
 - e. Peel adhesion: 10.0 pounds per inch width, tested to ASTM D1000.
 - f. Overlap bond: 8.0 pounds per inch width, tested to ASTM D1000.
 - g. Water vapor permeance: Maximum 0.035 grains per square foot per hour, tested to ASTM E96/E96M, Method B.
 - h. Water absorption: Maximum 0.1 percent, tested to ASTM D570.
 - i. Low temperature flexibility: No cracking or delamination, tested to ASTM D146/D146M, 180 degrees over 1 inch mandrel at minus 25 degrees F.
 - j. Puncture resistance: 50 pounds, tested to ASTM E154.
 - k. Pesticide repellency; chlorodane, fipronil, and permethrin: 0 percent penetration, tested to ASTM F2130.

2.3 ACCESSORIES

- A. Mesh Barrier:

1. Product: TERM® Micromesh 02 Barrier; Type 316 marine grade stainless steel mesh.
 2. Aperture size: Maximum 0.018 inch, tested to ASTM E11.
- B. Liquid Adhesives: Polyguard 650 LT or Polyguard 343 Spray Adhesive.
- C. Sealant Barrier: TERM® Sealant Barrier.

PART 3 EXECUTION

3.1 INSTALLATION - BATH TRAP BARRIER TREATMENT

- A. Install in accordance with manufacturer's instructions.
- B. Install after completion of rough plumbing.
- C. Remove all wood form material from walls of bath trap.
- D. If bath trap opening is less than 4 inches deep, remove sufficient earth to obtain 4 inch clearance.
- E. Prepare vertical wall surface of bath trap; remove mud, dirt, and residual concrete. Clean wall surfaces.
- F. Clean and wire brush piping.
- G. Fill bath trap with particle barrier to level of top of slab, minimum 4 inch thickness.
- H. Cut mesh barrier so that it extends completely over bath trap opening and 2 inches onto horizontal concrete surface on each side of mesh.
- I. Stir liquid adhesive; apply with roller or brush to extend 4 inches from each edge of bath trap cavity. Allow to cure until tacky.
- J. Cut "X" shaped opening in wire mesh where pipe will penetrate, placed so that wire mesh maintains 2 inch overlap around concrete perimeter.
- K. Install wire mesh over pipe, extending onto perimeter of bath trap.
- L. Cut four strips of flashing barrier, 2 inches longer than side of wire mesh that strip is to seal.
- M. Seal wire mesh to slab with flashing barrier by peeling away release liner. Install flashing 2 inches onto wire mesh and 2 inches out onto concrete perimeter outside of mesh.
 1. Extend flashing 1 inch past each end of wire mesh being sealed.
 2. Roll flashing using hand roller to ensure adhesion between concrete and flashing, and between flashing and wire mesh.
 3. Install without gaps anywhere around perimeter.
- N. Apply sealant barrier with by gun or trowel; seal gaps where pipe comes through wire mesh with minimum 1 inch width face of sealant barrier.

3.2 INSTALLATION - SLAB PENETRATION SEALANT BARRIER TREATMENT

- A. Install in accordance with manufacturer's instructions.
- B. Ensure that concrete is clean, smooth, dry, and free of excess concrete.
- C. If sill plate has been installed, cut out sill plate to form rectangular opening with minimum 1 inch clearance between penetrations and front, back, and sides of sill plate opening.
- D. Sand or wire brush pipe penetration, then wipe clean.
- E. Prime pipe penetration and 2 inch radius on concrete with liquid adhesive or spray adhesive.

- F. Apply sealant barrier completely around penetrations with 1/2 inch thickness at interfaces of pipe and horizontal concrete. Ensure that there are no gaps, openings, or crevices anywhere around penetration.

END OF SECTION