

REDGARD®

WATERPROOFING AND CRACK PREVENTION MEMBRANE

1. Product Name

RedGard® Waterproofing and Crack Prevention Membrane

2. Manufacturer

Custom Building Products
13001 Seal Beach Blvd.
Seal Beach, CA 90740-2757
800-272-8786
562-598-8808
Fax: 800-200-7765
Email: contactus@cbpmail.net
www.custombuildingproducts.com

3. Product Description

RedGard Waterproofing and Crack Prevention Membrane is a ready-to-use elastomeric membrane for both commercial and residential tile and stone application. Suited for interior and exterior substrates, RedGard creates a continuous waterproofing barrier with outstanding adhesion and reduces crack transmission in tile and stone floors. It bonds directly to metal drains; PVC, stainless steel and ABS drain assemblies and can be used as a slab-on-grade moisture vapor barrier under all types of floor coverings.

Substrates suited for RedGard include:

- Concrete, cement mortar beds, masonry
- EasyBoard®, WonderBoard®, cement backerboards
- Exterior grade plywood – For crack isolation of interior dry areas only
- Exterior decks – Contact Technical Services for information related to exterior applications and the use of pressure treated wood decks
- Lightweight concrete
- Gypsum based cement toppings

COMPOSITION & MATERIALS

RedGard is a liquid-applied elastomeric waterproofing material that cures to form a monolithic membrane.

PACKAGING

RedGard is offered in 2 sizes:

- 1 gal (3.78 L) pail
- 3.5 gal (13.2 L) pail

BENEFITS

- Easy to use and can be applied by roller, trowel or airless sprayer
- Rated for extra heavy duty service
- Reduces curing time with quick dry formula
- Isolates cracks to 1/8" (3 mm)
- Meets Uniform Plumbing Code specifications for use as a shower pan liner

- Obtained the Notice of Acceptance (NOA) for Miami Dade County
- Resists mold and mildew through MoldGard® Technology

LIMITATIONS

- Do not apply to surfaces that may drop below 40° F (4° C) within 72 hours of application.
- Do not apply over wet surfaces or surfaces subject to hydrostatic pressure.
- Do not use to bridge or cover over existing expansion, control, construction, cold or saw cut joints; use Crack Buster™ Pro membrane for control, cold or saw cut joints.
- Do not use as an adhesive.
- Do not use as a wear surface; the membrane must be covered with tile, cement skim coat, cement self-leveling or other permanent flooring.

4. Technical Data

APPLICABLE STANDARDS

American National Standards Institute (ANSI) — ANSI A108.01 & A118 American National Standards for the Installation of Ceramic Tile

ASTM International (ASTM)

- ASTM C191 Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- ASTM C627 Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester
- ASTM D638 Standard Test Method for Tensile Properties of Plastics

Tile Council of North America (TCNA) — TCA Handbook for Ceramic Tile Installation, TCNA Method EJ171, F125 & F125A

APPROVALS

RedGard has tested and complies with Uniform Plumbing Code and International Plumbing Code standards for use as a shower pan liner per IAPMO Research and Testing, Inc., File No. 4244.

RedGard has tested and complies with International Building Code (IBC), International Residential Code (IRC) and International Plumbing Code (IPC) standards for water resistance per ICC Evaluation Service, ESR-1413.

RedGard complies with the Product Control Division of the Miami Dade County Building Code Compliance Office for waterproofing standards and has earned a Notice of Acceptance (NOA), File No. 07-1010.16.

RedGard conforms to "safing material" requirements established by the Wisconsin Administrative Code, Chapter Comm 84.30-6f.

TECHNICAL PROPERTIES

Property	Results
Pot life	Indefinite
ASTM C191	
Initial set @ 70° F (21° C)	1 – 1.5 hours
Drying time before tile installation	1 – 1.5 hours
ANSI 118.10	
Fungus and microorganism resistance	Pass – No growth
Seam strength	16 lb/2" (7.3 kg/5cm) width
Breaking strength	484 psi (34 kg/cm ²)
Dimensional stability	0.05%
Waterproofness	Pass
Shear strength – 12 day dry cure	267 psi (18.8 kg/cm ²)
Shear strength – 100 day water immersion	89 psi (6.3 kg/cm ²)
ASTM C627	
Robinson floor test	14 cycles; extra heavy
ASTM D638	
% Elongation – 21 day dry cure	562%
% Elongation – 7 day dry cure/21 day wet cure	657%
IAPMO/Uniform Plumbing Code	
Waterproofness	Pass
Hydrostatic pressure and alkali resistance	Pass
FHA 4900-1-615-5, Sections C - D	Compliant
Permeance rating	0.06
Water vapor transmission	0.02 grains/hr ft ²
Drying time is dependent upon ambient conditions; longer times may occur in cooler and damp conditions.	

ENVIRONMENTAL CONSIDERATIONS

Custom Building Products is committed to environmental responsibility in both products produced and in manufacturing practices.

Use of RedGard may contribute to LEED® certification.

5. Installation

PREPARATORY WORK

Surface Preparation:

Exterior and wet areas must have proper sloping to drains. All surfaces must be structurally sound, clean, dry and free from contaminants that would prevent a good bond. Newly prepared concrete must be cured for 28 days and then troweled smooth and textured to a fine broom finish. Existing surfaces must be scarified and leveled, and all defects must be repaired. Cracks exceeding 1/8" (3 mm) should be treated in accordance with TCNA F125 or TCNA F125A.

METHODS

RedGard as Crack Prevention Membrane:

Force RedGard into cracks with the flat side of the trowel, roller or brush. Using a 3/16" x 1/4" (5 x 6 mm) V-notch trowel or 3/8" (9.5 mm) rough textured roller.

Use the flat side of the trowel and flatten the ridges to form a continuous, even coat of material. The membrane should extend a minimum of the diagonal measurement of the tile beyond both sides of the crack. Gaps between plywood sheets and where floors meet walls must also be pre-filled. For continuous crack isolation, cover the entire substrate with RedGard applied to a minimum 30 mils wet film thickness.

RedGard as General Waterproof Membrane (ANSI 118.10):

Cracks to 1/8" (3 mm) should be pre-filled before beginning the waterproofing application. Lightly dampen all porous surfaces. Use a 3/4" (19 mm) rough textured synthetic roller or a 3/16" x 1/4" (5 x 6 mm) V-notch trowel and heavily pre-coat the corners and the intersections where the floors and walls meet, extending 6" (15 cm) on either side.

RedGard applied in the above manner meets requirements of ANSI A118.10 without fabric reinforcement. For extra protection, embed a 6" (15 cm) wide fiberglass mesh into the membrane for changes of plane and for gaps 1/8" (3 mm) or greater. If using a trowel, spread the material with the trowel held at a 45 degree angle, and then flattens the ridges. If using a roller, apply a continuous, even film with overlapping strokes.

An airless sprayer may be used for the waterproofing application. The sprayer must produce between 1900 – 2300 psi, with a flow rate of 1.0 – 1.5 gpm and must have a tip orifice size of 0.025 – 0.029. Apply a continuous film with overlapping spray. The membrane appearance is pink when wet and dries to a dark red color. It typically takes 1 – 1.5 hours to turn completely red.

After the first coat turns red, inspect the film for integrity and fill any voids or pinholes with additional material. Apply a second coat at right angles to the first coat.

Periodically check the film thickness with a wet film gauge. Combined dried coatings must be at least 30 – 35 mils thick. When wet, the combined coatings must be at least 60 - 70 mils and must not exceed 125 mils wet film thickness.

RedGard as Primary Pan Liner:

(Uniform Plumbing Code, IAPMO File No. 4244) Apply material by roller, trowel or spray at 90 - 93 mils wet with a dried film thickness of 47 mils. Do not exceed 125 mils wet film at any time.

RedGuard for Interior Change of Plane & Commercial Installations:

Many commercial waterproofing installations require reinforcing of interior change of plane. Contact Technical Support for recommendations before beginning commercial installation including, but not limited to, the following:

- Above-grade pools, fountains and other poured-in-place or free-standing structures that will permanently hold water
- Commercial floors subject to continuous water exposure (i.e., commercial kitchens, wash downs, periodic flooding, etc.)
- Above-grade slabs that are pre-stressed or post-tensioned
- Perimeters where the floor abuts a curtain or shear wall
- Around the perimeter of all through floor penetrations (i.e., drain pipes, electrical conduit, etc.)

RedGuard at Drains:

Drains should have a clamping ring with open weep holes for thin-set application. Apply the membrane to the bottom flange. The drain should be fully supported, without movement, and should be even with the plane of the substrate. Apply the RedGuard membrane as described previously. Embed a 12" x 12" (30 x 30 cm) fiberglass mesh into the membrane, making sure it does not obstruct the drainage weep holes. Then apply an additional coat of the membrane and smooth. After curing, clamp the upper flange onto the membrane and tighten. Use a silicone caulk around the flange where the membrane and the upper flange make contact. A toilet flange can be handled in much the same manner.

RedGuard with Lightweight Concrete, Gypsum Based Underlayments & use as a Vapor Barrier over Concrete:

Lightweight or gypsum based materials must obtain a minimum of 2000 psi (13.8 MPa) compressive strength at the recommended cure time. The underlayment must be sufficiently dry and properly cured to the manufacturer's specifications for permanent, non-moisture permeable coverings. Surfaces to be covered must be clean, structurally sound and subject to deflection not to exceed the current ANSI standards. Expansion joints must be installed in accordance with local building codes and ANSI/TCNA guidelines.

Prime all surfaces to receive RedGuard with properly applied manufacturer's sealer or with a primer coat of RedGuard, consisting of 1 part RedGuard, diluted with 4 parts clean, cool water. In a clean pail, mix at low speed to obtain a lump-free solution. The primer can be brushed, rolled or sprayed to achieve an even coat. Apply the primer coat to the floor at a rate of 300 ft²/gal (7.5 m²/L) of reduced material. When dry, apply at least one full coat of RedGuard to the primed area. When used as a vapor barrier, apply one full coat (20 to 25 mils wet) where vapor transmission is up to 8 pounds per 1000 square feet per day and two full coats (20 to 25 mils wet each coat) where vapor transmission is up to 12 pounds per 1000 square feet per day. Refer to ASTM F1869 for more information on Vapor Transmission Testing.

RedGuard at Expansion Joints:

Do not bridge joints designed to experience movement. Carry these types of joints through the tile work. Clean the joint and install an open or closed cell backer rod to the proper depth, as outlined in the Tile Council Handbook, EJ171. Next compress sealant into the joint, coating the sides and leaving the sealant flush with the surface. When the sealant is dry, place bond breaker tape over the joint.

Apply a minimum 3/64" (1.2 mm) of RedGuard over the joint and the substrate, following the instructions provided previously. Install the tile work onto the membrane, but do not bridge the joint. After the tile work is properly set, follow the architect's and manufacturer's instructions to fill the joint with a specified color sealant.

Protection

If tile or stone will not be set immediately after curing, protect the RedGuard or Custom 9240 application from rain, direct sunlight and inclement weather for 72 hours after application. If delays longer than 72 hours are expected, cover the area with felt paper. Care should be taken to prevent the application from becoming soiled or punctured during and after application.

Tile and Stone Installation

Install tile or stone with a Custom Building Products polymer-modified mortar that meets ANSI A118.4 or A118.11 standards.

Curing

RedGuard is dry when it turns solid red, with no visible pink color. Typically, drying time is 1 – 1.5 hours; depending on ambient conditions, drying time can be as much as 12 hours. After the second coat is applied and both coats are fully cured, the application area can be flood tested.

Cleaning

Clean tools and hands with water before the material dries. Clean all spray equipment immediately after use.

Coverage

RedGuard as Crack Prevention Membrane:

- 1 gal (3.78 L) pail — 110 ft² (10.2 m²) at 30 mil thickness when wet
- 3.5 gal (13.2 L) pail — 385 ft² (35.8 m²) at 30 mil thickness when wet

RedGuard as Waterproof Membrane (ANSI A118.10):

- 1 gal (3.78 L) pail — 35 ft² – 40 ft² (3.3 – 3.7 m²) at 50 – 55 mil thickness when wet; 25 30 mil thickness when dry
- 3.5 gal (13.2 L) pail — 123 ft² – 140 ft² (11.4 – 13 m²) at 30 mil thickness when wet; 47 mil thickness when dry

RedGuard as IAPMO Pan Liner:

- 1 gal (3.78 L) pail — 20 ft² – 22 ft² (1.9 – 2 m²) at 93 mils when wet; 47 mils when dry
- 3.5 gal (13.2 L) pail — 70 ft² – 77² (6.5 – 7.2 m²) at 93 mils when wet and 47 mils when dry

PRECAUTIONS

Wear rubber gloves and eye protection while using this product. Avoid eye contact or prolonged contact with skin and wash thoroughly after handling. If eye contact occurs, flush with water for 15 minutes and consult a physician. Wash thoroughly after handling. Do not take internally. Keep out of the reach of children.

BUILDING CODES

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

6. Availability & Cost

RedGard is available through distributors throughout the United States. Visit the www.custombuildingproducts.com website for information about product cost and availability.

7. Warranty

RedGard Waterproofing and Crack Prevention Membrane is eligible for a Lifetime Installation System Warranty when used in a complete installation system. Custom Building Products warrants to the original consumer purchaser that its product shall be free from defects in material and workmanship under normal and proper usage for a period of one year following the date of original purchase. Sole liability under this warranty shall be limited to the replacement of the product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. This warranty will not extend to any product modified in any way or not used in accordance with the manufacturer's printed instructions. Custom Building Products makes no other warranties, either express or implied. This warranty gives you specific legal rights, and you may have other rights that vary from state to state.

For details and complete warranty information, visit the Custom Building Products website: www.custombuildingproducts.com

8. Maintenance

Properly installed product requires no special maintenance. Do not use as a wear surface.

9. Technical Services

For technical assistance, contact Custom Building Products or visit the website: www.custombuildingproducts.com.

10. Filing Systems

Additional product information is available from the manufacturer upon request.

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