

## ULTRA CRM™

Sheet Chemical Resistant, Vapor and Waterproofing Membrane

### MANUFACTURER

Polyguard Products, Inc.  
Ennis, TX 75119  
(214) 515-5000  
[www.polyguard.com](http://www.polyguard.com)

### PRODUCT DESCRIPTION

#### Basic Uses

Ultra CRM™ is designed and tested to withstand elevated concentrations of soil, fluid and vapor contaminants when installed on below grade concrete or CMU structures; such as concrete foundation walls, tunnels, parking garages and related applications where chemical resistant waterproofing is critical.

### FEATURES & BENEFITS

- Proprietary adhesive compound bonded to a **Chemical Resistant Membrane** insures uniform thickness and performance.
- Factory controlled side seams combined with CR Seam Tape ensures monolithic application with enhanced seam integrity.
- Provides a barrier that has been designed and tested to withstand elevated concentrations of contaminants typically found in construction sites which may be considered brownfield projects.
- Fully adheres which enhances the durability of the membrane and mitigates lateral water migration.

### COMPOSITION & MATERIALS

Ultra CRM™ is a strong, post-applied sheet membrane with a purpose-built, multi-component, proprietary chemical resistant backing laminated to a thick layer of proprietary waterproofing adhesive Compound. Total membrane thickness is factory controlled at 60 mils.

### TECHNICAL DATA

See physical properties table.

### INSTALLATION

#### Surface Preparation

- A smooth, monolithic, concrete surface is required. Provide an ICRI designated Concrete Surface Profile (CSP) 1 thru 3. Broom surfaces are not recommended.
- Concrete must be dry, frost free and cured a minimum of seven days prior to Ultra CRM system application.
- Surface must be free of voids, spalled areas, sharp projections, loose aggregate and form release agents.
- Do not use concrete curing compounds containing oil, wax or pigments.
- Form release agents must be the self-dissipating type which will not transfer to the membrane.

- Surface defects; such as cracks, holes, or cavities; should be filled and finished flush with LM-95 or Detail Sealant PW™ and if using a Portland cement grout or concrete, a patching material must meet the structural requirements of the host substrate.
- Clean all surfaces to remove debris, dust and loose stones before application begins. DO NOT apply system to frozen concrete.

NOTE: Accessories such as the 650 LT Liquid Adhesive, California Sealant, LM-95 and Detail Sealant PW™ will be used under the Ultra CRM™, with the exception of edges and penetrations. For more specific product requirement(s), refer to Ultra CRM details or contact Technical Services. All seam edges or penetrations that will expose the proprietary compound to the exterior and will come in contact with the contaminated material(s) must be sealed with CR™ Seam Tape or CR™ Liquid Membrane with CR™ Sealant for chemical resistance.

#### Penetration/Inside Corner/Fillet/Detail Liquid Membrane

- Apply fillets formed by LM-95 or Detail Sealant PW at the base of foundation walls, footings, and inside corners. Provide a minimum 90 mil, 3/4-inch face fillet.
- DO NOT use wood or fiber cant strips.
- Prime underneath CR Liquid Membrane when applied to concrete with CR Sealant.
- Cover all inside corners and the base of the foundation wall to footing joint using a 12-inch-wide strip of Detail Tape or Ultra CRM centered along the axis. Press or roll firmly to achieve a complete seal. LM-95 or Detail Sealant PW may be substituted for the initial 12-inch-wide strip of Detail Tape or Ultra CRM on inside corners by applying a minimum of 90 mils, 3/4" fillet (cant) 6" vertically and horizontally away from the fillet (cant).
- Prior to membrane application seal all drains, projections and pipe penetrations with CR Sealant and CR Liquid Membrane for a distance of 6-inches away from drain and 2-inches from the base of the pipe penetration or projection. After membrane application, prime with CR Sealant and seal all terminations with CR Liquid Membrane.
- CR Liquid Membrane is a two-component membrane and must be mixed per specific instructions prior to use. Pot life of this product is approximately 35 to 40 minutes after mixing at 70° F (22° C).

Mix Liquid Adhesive before use.

- 650 LT Liquid Adhesive or California Sealant provides a tacky adhesive surface. Liquid Adhesive must be tacky to touch, but not wet, prior to application of Ultra CRM™.

- 650 LT Liquid Adhesive or California Sealant should be applied over the entire surface at a rate of 250-300 square feet per gallon.
- Re-prime if membrane is not applied to the Liquid Adhesive within the same working day.
- Use brush or short nap lamb's wool roller for Liquid Adhesive application.
- Metal surfaces may require Liquid Adhesive to obtain bond of membrane to substrate.
- Tack or cure for these products is dependent on relative humidity, ambient temperature, and substrate surface temperature.

### Sheet Membrane

Install Ultra CRM™ in ambient and substrate surface temperatures of 40° F (5° C) and rising.

Apply Ultra CRM in any width up to 48-inches. Side laps must be a minimum of 2-1/2 inches. End laps shall be a minimum of 6-inches and have CR™ Seam Tape applied to all exposed edges.

When applying Ultra CRM on vertical walls, a determined effort must be made to assure complete adhesion of membrane to the primed surface. Use heavy hand pressure while smoothing out the membrane surface as it is applied. Entire surface must be rolled with a hand roller prior to being covered with a drainage composite and soil.

Apply Ultra CRM membrane in sections that can be managed easily to ensure complete adhesion to substrate; typically 8-feet or less. Apply the membrane starting from the lower foundation base and rising to the top with a 6-inch overlap, shingling down on each ply of membrane.

When terminated on the vertical surface, use a reglet, counter flashing or termination bar. Firmly press the terminated edge with a hand roller and protect with a troweled bead of CR™ Liquid Membrane to substrate prepared with CR™ Sealant. Termination bar must be covered and sealed with the CR Liquid Membrane to prepared substrate with CR Sealant.

Properly seal static cracks and cold joints that are 1/16 to 1/8-inch wide on horizontal or vertical surfaces with Polyguard LM-95 or Detail Sealant PW™, then apply a 12-inch-wide strip of Ultra CRM or Detail Tape. For cracks larger than 1/8-inch, contact Technical Services.

Ultra CRM™ does not function as an expansion joint material. All expansion joints must be addressed using expansion joint material(s) approved by the expansion joint manufacturer.

Apply CR™ Seam Tape to all seams, exposed edges, patches, and penetrations.

### Inspection & Repairs

Visually inspect membrane for tears, punctures, air blisters and "fishmouths," prior to water tests, placement of protection board and backfilling. Make repairs by

removing all damaged membrane so only well-bonded Ultra CRM remains. Re-prime any exposed concrete with 650 LT Liquid Adhesive or California Sealant, following installation guidelines. Apply a new sheet of membrane over the concrete, extending 6-inches onto previously applied Ultra CRM. Care should be taken to obtain good adhesion between membrane used for repairs and originally applied Ultra CRM™. When patching, care must be taken to avoid getting adhesive / sealant onto the existing Ultra CRM. Seal edges with CR™ Seam Tape.

Slit all "fishmouths," overlap the pieces, place patch over area and roll in place. All "fishmouths" must be flat or flush for CR Seam Tape to seal properly. Puncture air blisters larger than 2-inches, expel the air, prime and cover with patch. Extend the patch material a minimum of 6-inches in all directions beyond the repair area, then seal the patch edges with CR Seam Tape.

### Membrane Protection/Drainage Boards

Protection board is required over Ultra CRM™. Polypropylene is acceptable for vertical applications. Polyflow® 15 drainage boards can be used in place of protection board. Use 1/8-inch Chemical Resistant Protection Board to protect membrane on horizontal surfaces subject to normal construction traffic. Apply protection board systems so that it is not fastened through the membrane system causing damage to the membrane.

Membrane should be free from all obstructions that will prevent direct contact to membrane prior to protection board installation. When adhering protection board systems to Polyguard Ultra CRM, use a Polyguard approved adhesive system. Spot adhesion, rather than full adhesion, should be used so that in the event of backfill settlement exerting downward pressure, the protection system will detach from the membrane and slip downwards.

### Drainage Board

Use Polyflow® Protection/Drainage Board with built-in protection for vertical surfaces or Polyflow 18 for horizontal surfaces to expedite water dispersion. Consult Polyguard for specific recommendations.

### Backfill Requirements

No waiting is required before backfilling. Backfill material should be:

- free of large dirt clods, rock, tree roots and debris.
- of a type readily compactable upon deposit.
- compacted per project specifications in 12-inch lifts.
- low in water content.

Use mechanical compaction in horizontal layers to achieve desired backfill results. During mechanical compaction, prevent membrane damage by ensuring exhaust from equipment is directed away from structure.

### STORAGE AND HANDLING

#### Material Handling

Unload and store membrane and accessories carefully. Protect cartons and containers from weather, sparks, flames, excessive heat, cold and lack of ventilation. DO

NOT stack membrane and accessory materials higher than 5-feet vertically, nor double stack pallets. Store cartons on pallets and cover to prevent water damage. For best results, store membrane and accessories above 50° F (10° C) prior to application.

#### PRECAUTIONS

- The 650 LT Liquid Adhesive, California Sealant, and CR™ Sealant are industrial coatings and would be harmful or fatal if swallowed. It is marked as red label from the standpoint of flash point.
- Prohibit flames, sparks, welding and smoking during application; as around the well as installed membrane.
- Refer to product label for handling, using and storage precautions.
- Solvents could be irritating to the eyes; flush with water and contact physician.
- Avoid prolonged contact with skin and breathing of vapor or spray mist from liquid adhesive. In confined areas, use adequate forced ventilation, fresh air masks, explosion-proof equipment and clean clothing.
- Avoid solvent contact with light bulbs or other high temperature surfaces.

#### ULTRAVIOLET PROTECTION

Ultra CRM™ is adversely affected by ultraviolet light. Cover the chemical resistant waterproofing system as soon as possible; DO NOT leave exposed to sunlight for over 30 days.

#### SAFETY

SDS documents for all Polyguard products can be obtained at our website [www.polyguard.com](http://www.polyguard.com). Call Polyguard Products, Inc. at (214) 515-5000 with questions.

#### WARRANTY

We, the manufacturer, warrant 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.

#### TECHNICAL SERVICES

Technical assistance, information and Polyguard's products are available through a nationwide network of distributors and architectural representatives, or contact Polyguard Products, Inc.

P.O. Box 755, Ennis, TX 75120-0755

Sales: (615) 217-6061 • Tech Support: (214) 515-5000

Email: [archtech@polyguard.com](mailto:archtech@polyguard.com)

Website: [www.polyguard.com](http://www.polyguard.com)

PROPERTY	TEST METHOD	TYPICAL VALUE
FILM COLOR		Silver
MEMBRANE THICKNESS	ASTM D 1000	60 mils
TENSILE STRENGTH - MEMBRANE	ASTM D 412 Modified Die C	1673 psi
ELONGATION - ULTIMATE FAILURE OF RUBBERIZED ASPHALT	ASTM D 412	600%
TENSILE STRENGTH - FILM	ASTM D 882	7294 psi
PERMEANCE	ASTM E 96 Method B	0.022 Perms
CRACK CYCLING	ASTM C 836 Tested @ -15° F (-26°C)	No effect
PEEL ADHESION	ASTM D 903	21.3 lbs./in. width CF
LAP PEEL ADHESION	ASTM D 1876	12.5 lbs./in. width
LOW TEMPERATURE FLEXIBILITY (-15° F)	ASTM D 1970 Modified	Pass
PLIABILITY	ASTM D 146 180° bend over 1" mandrel at -25° F (-32° C)	No effect
PUNCTURE RESISTANCE - MEMBRANE	ASTM E 154	188.9 lbs.
RESISTANCE TO HYDROSTATIC HEAD	ASTM D 5385	231 ft.
EXPOSURE TO FUNGI IN SOIL	GSA-PBS 07115 (16 weeks)	No effect
RESISTANCE TO PERMEANCE BY METHANE GAS	ASTM D 1434 tested using 99.99% purity	< 5 x 10 <sup>-16</sup> mol/m <sup>2</sup> •s•Pa
WATER ABSORPTION	ASTM D 570	0.1%

<b>CHEMICAL VAPOR TRANSMISSION (AT 75° F, 90% RH)</b>		
<b>GAS AND VAPOR</b>		
METHANE	ASTM D 1434	0.0028 Perms
HYDROGEN SULFIDE	ASTM F 739	7.183 x 10 <sup>-7</sup> Perms
WATER VAPOR TRANSMISSION	ASTM E 96 Method B	0.054 Perms
<b>FUELS</b>		
GASOLINE	ASTM E 96 Method B	0.192 Perms
DIESEL	ASTM E 96 Method B	0.165 Perms
ETHANOL	ASTM E 96 Method B	0.351 Perms
ISOOCTANE	ASTM E 96 Method B	0.471 Perms
<b>CHLORINATED SOLVENTS</b>	Test Methods & Results Upon Request	
<b>ORGANIC SOLVENTS</b>	Test Methods & Results Upon Request	
<b>ASTM D 543 CHEMICAL RESISTANCE (7 DAYS TOTAL IMMERSION)</b>		
<b>CHEMICAL</b>	<b>PHYSICAL APPEARANCE</b>	<b>WEIGHT CHANGE</b>
WATER	No swelling or delamination	0.24%
<b>OILS &amp; FUELS</b>	<b>PHYSICAL APPEARANCE</b>	<b>WEIGHT CHANGE</b>
MOTOR OIL	No swelling or delamination	- 0.02%
DIESEL	No swelling or delamination	0.74%
ETHANOL	No swelling or delamination	0.14%
ISOOCTANE	No swelling or delamination	3.27%
GASOLINE	No swelling or delamination	4.49%
<b>ORGANIC SOLVENTS</b>	Test Methods & Results Upon Request	

<b>PACKAGING</b>	<b>PART NUMBER</b>	<b>UNIT SIZE</b>
<b>ULTRA CRM™</b>	650L48 CR	48" x 50' roll
<b>Required Accessories:</b>		
DETAIL TAPE	650L12	12" x 50' rolls (4/ctn)
CR™ SEAM TAPE	CR SEAM TAPE	4 • 10" x 200' rolls
CR™ LIQUID MEMBRANE (A & B yields 1.5 Gallons)	CR LIQUID MEMBRANE-1.5 GA	2-gallon pail
CR™ SEALANT (A & B yields 3 Gallons)	CR SEALANT-3 GA	5-gallon pail
650 LT LIQUID ADHESIVE	650-5 LIQ ADH 5 GA	5-gallon pail
650 LT LIQUID ADHESIVE	650-5 LIQ ADH 1 GA	4 • 1 gal pails/ctn
CALIFORNIA SEALANT	CALSEAL5	5-gallon pail
LM-95	LM952	2-gallon pail
DETAIL SEALANT PW™	DETAIL SEALANT PW – SAU 20 OZ	20 sausages/ctn
DETAIL SEALANT PW™	DETAIL SEALANT PW – 3 GAL	3-gallon pail
<b>Drainage Accessories:</b>		
POLYFLOW® 15	POLYFLOW15	4' x 50' roll
POLYFLOW® 18	POLYFLOW18	4' x 50' roll

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