

Planiseal CR1

Single-Component, 100%-Solids, Cold-Fluid-Applied,
Structural Waterproofing Membrane



MIAMI-DADE COUNTY
APPROVED

DESCRIPTION

Planiseal® CR1 is a fast-curing, 100%-solids, cold-fluid-applied, single-component, moisture-curing, structural waterproofing membrane that will not shrink and is VOC-compliant in virtually all municipalities. Very low in odor, it is well suited for use in and around occupied spaces. Thanks to advanced proprietary technology, this single-grade membrane can be used in horizontal as well as vertical applications, maximizing versatility. *Planiseal CR1* can be applied by roller, brush, trowel or squeegee.

FEATURES AND BENEFITS

- Single-grade membrane for vertical and horizontal applications
- Suitable for green concrete
- Seamless and monolithic
- Does not require a primer
- Applies easily with no mixing or special equipment required
- Free of solvents
- Very low odor
- Free of tar and asphalt
- Compatible with common construction materials such as concrete, concrete masonry units (CMUs), stone, metal, plastic (PVC and ABS), wood (pressure-treated and fire-treated), rigid insulation and insulating concrete forms (ICF)

INDUSTRY STANDARDS AND APPROVALS

- Meets or exceeds ASTM C836, Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
- Miami-Dade County Product Control Approved

WHERE TO USE

- Vertical and horizontal waterproofing on structural foundation walls and decks
- Vertical and horizontal waterproofing on tunnels, plaza decks, balconies, split slabs, courtyards, planters, parking decks and bridges
- Interior applications such as bathrooms, kitchens, mechanical rooms and laboratories
- Suitable for use in confined spaces and occupied buildings
- Used as primary waterproofing under tile and stone applications

SUITABLE SUBSTRATES AND SURFACE PREPARATION

- Before installing *Planiseal CR1*, the substrate must be properly prepared.
- Preparation: Do not apply *Planiseal CR1* to frozen or wet substrates. The membrane should be protected from direct sunlight as soon as possible after installation. *Planiseal CR1* can be applied to concrete, metal, plastic, wood, insulated wall systems and masonry surfaces. All substrates must be clean, dry and free of voids, protrusions, spalled areas, loose aggregate and surface irregularities. Remove contaminants such as grease, oil and wax from exposed surfaces. Also remove dust, dirt, loose stone and debris.
- Chemical additives: Concrete should be cured by the water-curing method. Any curing compounds must be of the pure sodium silicate type or clear resin-based materials without waxes, oils or pigments, and must be approved by a MAPEI representative. Form-release agents must not transfer to the concrete. Do not use petroleum oils, diesel fuel, paraffin wax or silicon-based products. Remove forms as soon as possible from below horizontal slabs to prevent moisture entrapment. Excess moisture could result in blistering of the membrane. Curing compounds and form-release agents that adversely affect the adhesion of *Planiseal CR1* must be removed from the substrate before application.
- Temperature: Apply *Planiseal CR1* only in dry weather or when precipitation is not imminent, and when the ambient and substrate temperatures are above 40°F (4°C).
- Concrete substrates: Structural concrete must be cured at least 3 days. Damp substrates are acceptable but should have no visible standing water. Repair any surfaces that are not structurally sound or have voids, protrusions, rough spalled areas, loose aggregate or exposed course aggregate. Any voids exceeding 1/4" (6 mm) in width should be filled with *Planitop® X* or *Planitop XS* or another latex Portland cement, concrete or epoxy concrete, and should be troweled smooth to match the existing surface. Protrusions and other rough areas should be broken off or ground down and patched with *Planitop X* or *Planitop XS* or another latex Portland cement. For instructions regarding cracks, see the "Detailing" information in the Product Application section below.
- Masonry substrates: Install *Planiseal CR1* over smooth concrete masonry units (CMUs) with mortar joints struck flush with the face of the concrete blocks. If concrete blocks are rough or the mortar joints are tooled, the surface should be parged to provide a smooth surface. Allow the parge coat to dry 24 hours before applying *Planiseal CR1*.
- Priming: Priming is not required for adhesion. However, if pinhole and blister problems are likely to occur due to air and/or moisture vapors being trapped or emitted from the concrete, a 4- to 7-mil application of *Planiseal CR1* is recommended to remove trapped air/vapor. This thin-mil application of *Planiseal CR1* will promote adhesion to the substrate and establish a cohesive bond with the subsequent coat of *Planiseal CR1*.

PRODUCT APPLICATION

Detailing

Wall/footing transitions:

1. Install *Idrostop™ 25* or *Idrostop B25* in all concrete cold-pour joints.
2. Create a cant at all vertical-to-horizontal transitions by applying a cant bead of *Mapeflex® P1 FT*, *Mapeflex P2 NS* or *Planiseal CR2 V* measuring 3/4" (19 mm) and allow it to skin over.
3. Apply a *Planiseal CRI* coat of 60 wet mils extending at least 4" (10 cm) onto the wall and footing.

Deck/curb or parapet flashing:

1. Install *Idrostop 25* or *Idrostop B25* in all concrete cold-pour joints.
2. Create a cant at all vertical-to-horizontal transitions by applying a cant bead of *Mapeflex P1 FT*, *Mapeflex P2 NS* or *Planiseal CR2 V* measuring 3/4" (19 mm) and allow it to skin over.
3. Apply a *Planiseal CRI* coat of 60 wet mils extending at least 4" (10 cm) onto the deck/curb or parapet flashing.

Wall inside corners:

1. Create a cant at all wall inside corners by applying a cant bead of *Mapeflex P1 FT*, *Mapeflex P2 NS* or *Planiseal CR2 V* measuring 3/4" (19 mm) and allow it to skin over.
2. Apply a *Planiseal CRI* coat of 60 wet mils at each inside corner extending at least 4" (10 cm) onto each wall.

Wall outside corners:

1. Apply a *Planiseal CRI* coat of 60 wet mils at each outside corner extending at least 4" (10 cm) onto each wall.

Concrete joints and cracks greater than 1/16" (1.5 mm) wide:

1. Install *Idrostop 25* or *Idrostop B25* in all concrete cold-pour joints and around all penetrations in concrete walls and slabs.
2. Saw-cut all cracks greater than 1/16" (1.5 mm) wide, making them 1/4" (6 mm) wide and 1/4" (6 mm) deep. After removing dust from the saw cuts, fill them with *Mapeflex P1 FT*, *Mapeflex P2 NS* or *Planiseal CR2 V* and allow it to skin over.
3. Apply a *Planiseal CRI* coat of 60 wet mils extending at least 4" (10 cm) onto each side of joint or crack.

Cracks less than 1/16" (1.5 mm) wide:

1. Apply a *Planiseal CRI* coat of 60 wet mils extending at least 4" (10 cm) onto each side of all cracks less than 1/16" (1.5 mm) wide.
2. Allow it to skin over.

Penetrations:

1. Install *Idrostop 25* or *Idrostop B25* around all penetrations in concrete walls and slabs.
2. Mechanically abrade and clean metal and PVC penetrations.
3. Create a cant around penetration where it meets the substrate by applying a cant bead of *Mapeflex P1 FT*, *Mapeflex P2 NS* or *Planiseal CR2 V* measuring 3/4" (19 mm) and allow it to skin over.
4. Apply a *Planiseal CRI* coat of 60 wet mils extending at least 4" (10 cm) onto the wall and penetration.

Terminations:

1. *Planiseal CR1* is self-terminating.
2. Terminate the membrane 4" to 6" (10 to 15 cm) below grade for foundation applications. Terminate the membrane 1" to 2" (2.5 to 5 cm) from exterior face of substrate for above-grade applications.
3. *Planiseal 88* can be used starting from the *Planiseal CR1* termination and extending up to above grade to complete the waterproofing of the wall.

SYSTEM INSTALLATIONS

Planiseal CR1 can be applied in two types of systems. Reinforced systems are used for critical waterproofing for split slabs, plaza decks, courtyards and green roofs as well as for below-grade waterproofing. Single-coat systems are used for general waterproofing such as foundation walls and planters. For either type of system, *Planiseal CR1* can be applied with a short-nap roller (3/8" or 10 mm), brush, trowel or squeegee.

Reinforced systems:

1. Apply the first coat of *Planiseal CR1* at least 60 mils thick.
2. Immediately after the first coat is applied, install the *MAPEI LMR Fabric* into the first coat while it is wet.
3. Apply the second coat of *Planiseal CR1* on the same day, at least 60 mils thick. The *MAPEI LMR Fabric* must be covered on the same day with the second coat of *Planiseal CR1*.
4. Allow the system to cure for 24 hours. Then install the protection course to avoid damage from other trades, construction materials, backfill or overburden. Use an appropriate *Mapedrain*[™] drainage composite. The *Mapedrain* drainage composite should be adhered to the membrane using a *Mapebond*[™] contact adhesive or an approved adhesive. For applications where positive drainage is not desired, use *Mapecover*[™] 810 protection board. Note that *Mapecover 810* does not provide positive drainage to the system and that various warranties require specific protection products or materials. Contact a MAPEI representative regarding questions and/or recommendations.
5. Place backfill or overburden as soon as possible. Use care during the backfill operation to avoid damage to the waterproofing system. Follow generally accepted industry practices for backfilling and compaction. Backfill should be added and compacted in lifts from 6" to 24" (15 to 61 cm) and compacted to 85% modified proctor.

Single-coat systems:

1. Apply a coat of *Planiseal CR1* at least 60 mils thick.
2. Allow the system to cure for 24 hours. Then install the protection course to avoid damage from other trades, construction materials, backfill or overburden. Use an appropriate *Mapedrain* drainage composite. The *Mapedrain* drainage composite should be adhered to the membrane using a *Mapebond* contact adhesive or an approved adhesive. For applications where positive drainage is not desired, the use of *Mapecover 810* protection board is recommended. Note that *Mapecover 810* does not provide positive drainage to the system and that various warranties require specific protection products or materials. Contact a MAPEI representative regarding questions and/or recommendations.
3. Place backfill or overburden as soon as possible. Use care during the backfill operation to avoid damage to the waterproofing system. Follow generally accepted industry practices for backfilling and compaction. Backfill should be added and compacted in lifts from 6" to 24" (15 to 61 cm) and compacted to 85% modified proctor.

Detail requirements:

- For standard installation details, follow the *Planiseal CR1* detail drawings. For non-standard installation instructions, contact a MAPEI representative.

LIMITATIONS

- Do not apply where the membrane will be subject to continuous exposure to sunlight. *Planiseal CR1* should be covered as soon as possible after application.
- Not recommended for pond and tank liner applications except for between-slab applications
- Not compatible with asphalt-based products. Contact a MAPEI representative for detailed instructions if *Planiseal CR1* is to come into contact with an asphalt-based product.
- Ambient and surface temperatures must be above 40°F (4°C) during application.
- Do not install over substrates containing asbestos.
- Not to be used as a wearing surface
- If a metal pan is used for concrete form, the metal pan must be vented.
- Not approved for use with potable water
- To be used for positive-side applications only

Product Performance Properties

Laboratory Tests	Results
Solids content – ASTM D2697	100%
High solids content – ASTM C836	Pass
VOCs (Rule #1113 of California's SCAQMD)	44 g per L*
Resistance to water – ASTM D2939	No blistering or reemulsification
Tensile strength – ASTM D2370	200 psi (1.38 MPa)
Elongation – ASTM D2370	350%
Water vapor permeance – ASTM E96 Water Method	0.76 perms
Water vapor permeance – ASTM E96 Inverted Water Method	0.95 perms
Extensibility after heat aging – ASTM C1522	Pass – No cracking at 0.25" (0.635 cm)
Weight loss – ASTM C836	Pass
Adhesion-in-peel – AC29 and ASTM C836	Pass
Hardness – ASTM D2240, Type OO	87
Resistance to decay – AC29	Pass

*Although Planiseal CR1 is 100% solids, this number refers to the VOCs generated during chemical linkage.

Shelf Life and Product Characteristics

Shelf life	1 year when protected from ultraviolet light and stored in a dry place at between 40°F (4°C) and 95°F (35°C)
Color	Green
Minimum application temperature	40°F (4°C)
Approximate curing time, at 70°F (21°C) and 50% relative humidity	2 hours for skinning over; 24 hours for initial set; 72 hours for full cure
Rain-resistant, at 70°F (21°C) and 50% relative humidity	After 2 hours
Required curing time for concrete substrates	3 days

CSI Division Classification

Cold Fluid-Applied Waterproofing	07 14 16
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Packaging and Coverage**

Size	<p>Pail: 5 U.S. gals. (18.9 L)</p> <p>At 60 mils = 26.7 sq. ft. per U.S. gal. (0.65 m² per L)</p> <p>At 90 mils = 17.8 sq. ft. per U.S. gal. (0.44 m² per L)</p> <p>At 120 mils = 13.3 sq. ft. per U.S. gal. (0.33 m² per L)</p> <p>At 215 mils = 7.5 sq. ft. per U.S. gal. (0.18 m² per L)</p>
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** Coverage rates are theoretical and can vary significantly based on substrate profile and detailing requirements.

ADDITIONAL INFORMATION

Refer to the SDS for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

CONTACT INFORMATION

MAPEI Headquarters of North America

1144 East Newport Center Drive
Deerfield Beach, Florida 33442
1-888-US-MAPEI (1-888-876-2734) / (954) 246-8888

Technical Services

U.S. and Puerto Rico:
Flooring: 1-800-992-6273
Concrete and heavy construction: 1-888-365-0614
Canada:
1-800-361-9309

Customer Service

1-800-42-MAPEI (1-800-426-2734)

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For the most current product data and BEST-BACKEDSM warranty information,
visit www.mapei.com.

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