# Planiseal CR2 V

**Vertical-Grade, Two-Component, 100%-Solids, Cold-Fluid-Applied Structural Waterproofing Membrane**


## DESCRIPTION

*Planiseal® CR2 V* is a fast-curing, 100%-solids, cold-fluid-applied, two-component, elastomeric polyurethane structural waterproofing membrane that will not shrink and is VOC-compliant in virtually all municipalities. It is designed for use in several detailing applications for the MAPEI waterproofing systems *Planiseal Membrane SA* and *Planiseal CR1*. Very low in odor, *Planiseal CR2 V* is well suited for use in and around occupied spaces. This vertical-grade membrane can be used in vertical applications as well as horizontal applications, maximizing versatility. *Planiseal CR2 V* can be applied by roller, brush or trowel.

## FEATURES AND BENEFITS

- Two-component
- Chemical cure
- Cold-applied
- Fully adhered, seamless and monolithic
- Does not require a primer
- Free of solvents, tar and asphalt
- Very low odor
- Compatible with rubberized asphalt
- Used as a detailing material for *Planiseal Membrane SA* and *Planiseal CR1*
- Compatible with common construction materials such as concrete, concrete masonry units (CMU), stone, metal, wood (pressure-treated and fire-treated), rigid insulation and insulating concrete forms (ICF)

## WHERE TO USE

- Vertical and horizontal waterproofing on structural foundation walls and above-grade horizontal decks
- Used for detailing *Planiseal Membrane SA* for the following uses: Fillet material at inside corners, reinforcement material at inside/outside corners, flashing material around drains, penetrations, drains, curbs, parapets, sealing terminations, repair material for concrete voids and honeycombs
- Used for detailing *Planiseal CR1* for the following uses: Fillet material at inside corners, reinforcement material at inside/outside corners, flashing material around drains, penetrations, drains, curbs and parapets, sealing terminations, repair material for concrete voids and honeycombs
- Used as a first coat for a high-performance dual-membrane system when used in combination with *Planiseal Membrane SA* to provide a system that possesses the very best performance features of fluid-applied and sheet-applied waterproofing membranes

## LIMITATIONS

- Do not apply where the membrane will be subject to continuous exposure to sunlight. *Planiseal CR2 V* should be covered as soon as possible.
- *Planiseal CR2 V* should only be installed over properly prepared substrates.
- Do not apply *Planiseal CR2 V* to wet, damp, frozen, frost or contaminated surfaces.
- Do not apply on green concrete; allow concrete to cure for a minimum of 7 days.
- Not recommended for pond and tank liner applications except for between slab applications
- Do not mix partial units.
- Ambient and surface temperatures must be above 40°F (4°C) and below 95°F (35°C).
- Do not install over substrates containing asbestos.

## SUITABLE SUBSTRATES AND SURFACE PREPARATION

- Before installing *Planiseal CR2 V*, the substrate must be properly prepared.
- Preparation: Do not apply *Planiseal CR2 V* to frozen or wet substrates. The membrane should be protected from direct sunlight as soon as possible after installation. *Planiseal CR2 V* can be applied to concrete, CMU, metal, 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. 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. 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 the *Planiseal CR2 V* must be removed from the substrate before application.
- Temperature: Apply *Planiseal CR2 V* only in dry weather or when precipitation is not imminent, and when the ambient and substrate temperatures are above 40°F (4°C) and below 95°F (35°C).
- Concrete substrates: Structural concrete must be cured at least 7 days. Repair surfaces that are not structurally sound or have voids, protrusions, rough spalled areas, loose or exposed coarse aggregate. Any voids exceeding 1/4" (6 mm) in width should be filled with *Planitop® X* or *Planitop XS* or other 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 as detailed above. For information regarding cracks, see the “Detailing” information in the Product Application section below.

- Masonry substrates: Install *Planiseal CR2 V* over smooth CMU 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 48 hours before applying *Planiseal CR2 V*.
- 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 CR2 V* is recommended to remove trapped air/vapor. This thin-mil application of *Planiseal CR2 V* will promote adhesion and establish an intimate bond to the substrate.

## MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

1. Pre-stir Part A mechanically using a drill and a mixing paddle with a diameter of 2" (5 cm).
2. Pour Part B into Part A and mix for no more than 1 minute using a drill at 150 rpm and a mixing paddle with a diameter of 2" (5 cm) without trapping air.

## PRODUCT APPLICATION

**Detailing**

Inside corner detailing:

1. Create a cant at all wall inside corners or vertical-to-horizontal transitions by applying a cant bead of *Planiseal CR2 V* measuring 3/4" (19 mm).
2. Extend 60 mils of *Planiseal CR2 V* from corners on each surface for at least 4" (10 cm).

Outside corner detailing:

1. Apply a 60-wet-mil coat of *Planiseal CR2 V* at outside corners, extending it for at least 4" (10 cm) onto each wall.

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

1. Saw-cut all cracks greater than 1/16" (1.5 mm), making them 1/4" (6 mm) wide and 1/4" (6 mm) deep. Remove dust from saw cuts and fill with *Planiseal CR2 V* sealant.
2. Apply a 60-wet-mil coat of *Planiseal CR2 V*, extending it for at least 4" (10 cm) onto each side of the joint or crack.

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

1. Apply a 60-wet-mil coat of *Planiseal CR2 V*, extending it for at least 4" (10 cm) onto each side of all cracks less than 1/16" (1.5 mm) wide.

Penetrations:

1. Mechanically abrade and clean metal and PVC penetrations.
2. Create a cant around penetration where it meets the substrate by applying a cant bead of *Planiseal CR2 V* measuring 3/4" (19 mm) and allow it to skin over.
3. Apply a 60-wet-mil coat of *Planiseal CR2 V*, extending it for at least 4" (10 cm) onto the substrate and penetration.

Terminations:

1. *Planiseal CR2 V* is self-terminating.
2. Terminate the membrane 4" to 6" (10 to 15 cm) below grade level for foundation applications. Terminate the membrane 1" to 2" (2.5 to 5 cm) from the exterior face of the substrate for above-grade applications.
3. *Planiseal 88* can be used from the *Planiseal CR2 V* termination extended up to above grade to complete the waterproofing of the wall.

## SYSTEM INSTALLATIONS

*Planiseal CR2 V* can be applied as a stand-alone waterproofing membrane for general waterproofing such as foundation walls and planters or a detailing accessory for *Planiseal Membrane SA* or *Planiseal CR1*. *Planiseal CR2 V* can be applied with a medium-nap roller, brush or trowel.

Single-coat systems:

1. Apply a coat of *Planiseal CR2 V* at least 60 mils thick.
2. Allow the system to cure for 24 hours. Then install the protection course or drainage composite 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 *Mapebond*™ *720* contact 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 your MAPEI representative for 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.

Dual-membrane system with *Planiseal CR2 V* and *Planiseal Membrane SA*:

1. Apply *Planiseal CR2 V* to all detail areas: inside corners, outside corners, penetrations, concrete joints and cracks greater than 1/16" (1.5 mm).
2. Apply a coat of *Planiseal CR2 V* at a minimum of 60 mils thick over the entire substrate to be waterproofed.
3. After *Planiseal CR2 V* has cured for 5 hours, install *Planiseal Membrane SA* without *Mapebond 720* contact adhesive directly on top of the *Planiseal CR2 V*. If *Planiseal Membrane SA* cannot be installed the same day or if the *Planiseal CR2 V* has been contaminated, clean the surface and apply *Mapebond 720* contact adhesive before installing *Planiseal Membrane SA*. See *Planiseal Membrane SA* installation instructions.
4. Allow the system to cure for 24 hours. Then install the protection course or drainage composite 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 *Mapebond 720* contact adhesive. Note that various warranties require specific protection products or materials. Contact your MAPEI representative for 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.

Detail for *Planiseal CR1*:

1. Apply *Planiseal CR2 V* to all detail areas: inside corners, penetrations, concrete joints and cracks greater than 1/16" (1.5 mm).
2. After *Planiseal CR2 V* has cured for 5 hours, install *Planiseal CR1* system following its installation instructions.
3. Allow the system to cure for 24 hours and 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 *Mapebond 720* contact adhesive. Note that various warranties require specific protection products or materials. Contact your MAPEI representative for questions and/or recommendations.
4. 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 installation instructions, contact a MAPEI representative.

## Product Performance Properties

| Laboratory Tests | Results |
|---|---|
| Solids content | 100% |
| Tensile strength – ASTM D412 | 618 psi (4.26 MPa) |
| Elongation – ASTM D412 | 168% |
| Water absorption – ASTM D570 | 0.67% |
| Weight loss – ASTM E154 | 0.3% |
| Water vapor permeance – ASTM E154 | 0.51 perms |
| Crack bridging – ASTM C1305 | Pass: No cracking |
| Hardness, Shore OO – ASTM D2240 | 92 |
| Hardness, Shore A – ASTM D2240 | 65 |
| Minimum application temperature | 40°F (4°C) |
| Approximate curing time, at 75°F (24°C) and 50% relative humidity | 3 hours for skinning over; 5 hours for initial set; 18 hours for full cure |
| Required curing time for concrete substrates | 7 days |

## Shelf Life and Storage

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|---|---|
| Shelf life | 1 year when protected from UV light and stored in a dry place at between 40°F and 95°F (4°C and 35°C) |
| Color | Blue |

### CSI Division Classification

| | |
|---|---|
| Cold Fluid-Applied Waterproofing | 07 14 16 |

### Packaging

| Size | Coverage* |
|---|---|
| **Kit: 2 U.S. gals. (7.57 L)**<br>**Part A: 3.15 U.S. gals. (11.9 L)**<br>**Part B: 0.85 U.S. gal. (3.2 L)** | At 60 mils = 25 sq. ft. per U.S. gal. (0.61 $m^2$ per L)<br>At 90 mils = 17 sq. ft. per U.S. gal. (0.417 $m^2$ per L) |

** 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).

## CONTACT INFORMATION

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