



Planibond 3C[®]

Three-Component, Cementitious Corrosion Inhibitor and Bonding Agent



DESCRIPTION

Planibond 3C is a three-component, cementitious, moisture-tolerant, water-based, epoxy-modified corrosion inhibitor and bonding agent.

FEATURES AND BENEFITS

- High in density and alkalinity, *Planibond 3C* offers outstanding corrosion protection by providing resistance from the penetration of chlorides, carbon dioxide and pollutants.
- Highly versatile regarding application methods: Use a brush, short-nap roller, push broom or hopper spray equipment.
- Provides excellent bond strength when used to place new concrete adjacent to existing concrete
- Once cured, *Planibond 3C* is unaffected by moisture, remains breathable and does not act as a vapor barrier.
- Long open time – up to 24 hours
- Nonflammable and solvent-free

INDUSTRY STANDARDS AND APPROVALS

LEED v4 Points Contribution

LEED Points

Health Product Declaration (HPD)* Up to 2 points

* Using this product may help contribute to LEED certification of projects in the category shown above. Points are awarded based on contributions of all project materials.

WHERE TO USE

- Interior/exterior applications
- As an anticorrosion coating for reinforcing steel
- As a bonding agent for concrete repair mortars or fresh concrete to existing concrete substrates and steel reinforcement

LIMITATIONS

- Do not use *Planibond 3C* with rapid-setting repair mortars.
- Only use between 45°F and 95°F (7°C and 35°C). As temperatures increase, the working time and the open time for placement of *Planibond 3C* decrease. For hot-weather applications, protect *Planibond 3C* from direct sunlight. For temperatures above 85°F (29°C), follow American Concrete Institute (ACI) hot-weather application guidelines.
- Do not add water or solvents. To ensure product performance, mix full units only.
- Maximum open times between *Planibond 3C* and repair material:

<u>Temperature</u>	<u>Open Time</u>
45°F (7°C)	24 hours
50°F (10°C)	16 hours
68°F (20°C)	12 hours
95°F (35°C)	6 hours

- For the best performance, place repair mortar or fresh concrete onto *Planibond 3C* while it is still wet.
- Avoid contact between *Planibond 3C* and aluminum.



- *Planibond 3C* consists of two liquids (a water-based epoxy and hardener) and a powder. Store materials in their original packaging in a dry, covered and heated space. Do not allow liquid components to freeze. If materials are frozen, they should be discarded properly in accordance with local regulations.

SUITABLE SUBSTRATES

- Clean reinforcing steel with a near-white metal finish
- Properly prepared, structurally sound, fully cured concrete (at least 28 days old)

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

- Ensure that all concrete and masonry surfaces are structurally sound, stable and solid.
- Thoroughly clean the concrete or masonry surface to remove substances that could affect the bond strength of *Planibond 3C*, including but not limited to dirt, paint, tar, asphalt, wax, oil, grease, latex compounds, sealers, curing compounds, form release agents, laitance, loose and deleterious materials, foreign substance and adhesive residue.
- Mechanically profile and prepare concrete surfaces by engineer-approved methods to obtain an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) standards #7 to #9 for acceptable profile height. Remove all dust, debris and other contaminants before application.
- Clean exposed steel by removing all loose scaling and surface rust to a near-white metal finish. Clean metal by abrasive blasting or other engineer-approved mechanical methods, and then coat with *Planibond 3C*. For section loss of 15% to 25%, add additional reinforcing steel as directed by an engineer.
- Ensure that concrete or masonry substrate and ambient room temperatures are between 45°F and 95°F (7°C and 35°C) before application. Temperatures must be maintained within this range until the repair material has developed sufficient strength.
- Reference ICRI Technical Guideline #310.1R-2008, "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion," for more information.

MIXING

Choose all appropriate safety equipment before use. Refer to the Safety Data Sheet for details.

1. Shake the contents of Part A and Part B (liquids) vigorously. Pour both components into a clean mixing container.

2. Mix the two liquids together with a drill (at 400 to 800 rpm) and a Jiffy-type paddle for 1 minute. Slowly add Part C (powder), mix for another 2 minutes and blend to a uniform, lump-free consistency.
3. The mixed material will be a slurry-consistency coating that can be brushed, push-broomed or sprayed on, having a pot life of 90 minutes at 73°F (23°C) and 50% relative humidity.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

Application as a corrosion protection treatment on reinforcing steel

1. Apply the mixed *Planibond 3C* with a brush or sprayer using a two-coat method to ensure complete surface coverage on the reinforcing steel. Apply the first coat at 10 mils. The second coat (at 10 mils) can be applied from 90 to 120 minutes (at 73°F [23°C] and 50% relative humidity) after the first coat. Do not exceed 24 hours between coats.
2. When *Planibond 3C* is used as a corrosion protection treatment on reinforcing steel, repair material can be placed in as little as 2 to 3 hours after the second application of *Planibond 3C*.

Application as a bonding agent

Read all installation instructions thoroughly before installation.

1. Ensure that the prepared concrete or masonry substrate is saturated surface-dry (SSD) and free of standing water before application.
2. Apply the bond coat using a brush, push broom, short- nap roller or spray equipment. Work *Planibond 3C* thoroughly into the substrate to fill the pore structure. Apply at 20 mils' thickness onto the prepared substrate.
3. Apply the repair mortar or concrete to the bond coat while it is still wet and tacky and within the open time stated in the Temperature / Open Time table in the Limitations section.

CLEANUP

Clean tools and protective gear with warm to hot water and a citrus-based cleaner. Cured material can only be mechanically removed.

PROTECTION

For hot-weather applications, protect *Planibond 3C* from direct sunlight. For temperatures above 85°F (29°C), follow ACI hot-weather application guidelines to ensure a successful installation.

Product Performance Properties

Laboratory Tests	Results
Slant/shear bond strength (ASTM C882)	
14 days (moist cure / wet on wet / 16-hour open time)	1,812 psi (12,5 MPa)
14 days (moist cure / 24-hour open time)	1,580 psi (10,9 MPa)
Slant/shear bond strength (ASTM C882)	
2 days (moist cure), Type 2	1,044 psi (7,2 MPa)
14 days (moist cure), Type 2	1,812 psi (12,5 MPa)
Pull-out strength (rupture of concrete) (CAN/CSA-A23.2-6B)	
3 days	450 psi (3,10 MPa)
7 days	464 psi (3,2 MPa)
14 days	495 psi (3,41 MPa)
28 days	550 psi (3,79 MPa)
Resistance to de-icing salts	Good
Permeability to chlorides	Good
VOCs (Rule #1113 of California's SCAQMD)	2 g per L

Shelf Life and Product Characteristics

Shelf life	Parts A, B and C: 2 years when stored in original, unopened packaging at 73°F (23°C) in a dry and covered area
Physical state	Liquid (Parts A and B) and powder (Part C)
Color (mixed)	Gray

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins. If the product freezes, discard it accordingly.

Application Properties

Mixing ratio	Mix the entire unit (all of parts A, B and C)
Application temperature range	45°F to 95°F (7°C to 35°C)
Pot life at 73°F (23°C) and 50% relative humidity	90 minutes
Open time, depending on temperature	6 to 24 hours

CSI Division Classification

Maintenance of Concrete	03 01 00
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Packaging

Size
For a yield of 1.74 U.S. gals. (6,59 L) Small kit (3 parts) – 25 lbs. (11,3 kg): Part A = 1.67 lbs. (0,76 kg) Part B = 3.33 lbs. (1,51 kg) Part C = 20 lbs. (9,07 kg)
For a yield of 4 U.S. gals. (15,1 L) Large kit (2 parts) – 10.8 lbs. (4,90 kg): Part A = 3.7 lbs. (1,68 kg) Part B = 7.1 lbs. (3,22 kg) Part C = 44 lbs. (20,0 kg), sold separately

Planibond 3C



Approximate Coverage*

Size	Coverage
As a bonding agent on smooth surfaces	80 sq. ft. per U.S. gal. (1,96 m ² per L) at 20 mils' thickness
For treating reinforcing steel (2-coat method)	21.9 lin. ft. (6,68 m) for 3/8" (10 mm) diameter rebar per 2.2 lbs. (1,0 kg)

* Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices.

RELATED DOCUMENTS

"Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion"	ICRI Technical Guide #310.1R-2008
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Refer to the SDS for specific data related to health and safety as well as product handling.

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 or 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.**

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