Planibond AE

High-Strength, Nonsag, Epoxy Anchoring Gel

FOR PROFESSIONAL USE ONLY

DESCRIPTION

Planibond® AE is a high-strength, moisture-tolerant, zero-VOC, two-part, nonsag, epoxy anchoring gel designed for a wide variety of bonding and repair applications.

FEATURES AND BENEFITS

- Comes in dual-cartridge unit as well as in bulk for easy use
- 100%-solids, solvent-free product with zero VOC content
- Nonsag, high-modulus and high-strength
- Moisture-tolerant
- Suitable for use in severe freeze/thaw climates
- May be extended with graded sands

INDUSTRY STANDARDS AND APPROVALS

- ASTM C881: Types I, II, IV and V; Grade 3; Classes B and C
- AASHTO M235
- USDA: Meets specifications for food-processing areas

WHERE TO USE

- Use as a cap seal for pressure-injection epoxy grouting.
- Use to seal cracks and set anchor bolts.
- Use for doweling applications of rebar and tie bars in concrete repairs.
- Use as an adhesive to bond *Mapeband*™ *TPE*.

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

SURFACE PREPARATION

- For anchoring, drill each hole to the appropriate diameter and depth – typically a diameter 1/8" to 1/4" (3 to 6 mm) larger than the rod or bolt, and in depth 9 to 15 times the diameter of the rod or bolt. Use a nylon brush and oil-free compressed air to thoroughly clean each hole of any dirt, dust and drilling residue from the base of the hole.
- For bonding to steel, ensure that steel is cleaned and prepared to a white metal finish. For bonding to concrete, the concrete should be at least 28 days old, properly prepared and mechanically cleaned, with all weak material removed per ASTM D4258.

MIXING

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

- When mixing the 2-gallon (7.57-L) kit of *Planibond AE*, empty Part A and Part B into a third container, carefully scraping the sides of the original containers to ensure that all material is mixed together in a 1-to-1 ratio. Mix the material at a medium speed (400 to 600 rpm) with an epoxy paddle, scraping the sides and bottom of the mixing container to ensure that all material is mixed to a uniform, light gray color (after about 3 minutes). Divide the mixed material into small containers to extend the gel time, because material left in mass will gel quickly due to its exothermic properties.
- *Planibond AE* pre-filled cartridges require a static mixer and a dual-cartridge dispensing gun to ensure adequate mixing of Part A and Part B.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

For anchoring

Application of bulk units by pump

Use an appropriate positive-displacement, plural-component pump. Fill a hole half full. Rotate the dowel, pin or bolt as it is inserted to the designated depth in the hole. Epoxy should fill the hole flush to the edge with no voids.

Application using a dual-cartridge unit

1. Unscrew the cap of the dual-cartridge unit. Attach the static-mixer nozzle.
2. Insert the dual-cartridge unit into a dual-cartridge dispensing gun.
3. Extrude epoxy until a uniform, streak-free color is achieved.
4. Dispense epoxy with uniform pressure. If the pressure is altered or the dispensing is paused, always ensure that epoxy color remains consistent and streak-free before continuing application.
5. After a uniform color is achieved, the static mixer should be placed at the bottom of each hole. Start extruding epoxy while pulling the static mixer out, filling the hole half full. Rotate the dowel, pin or bolt as it is inserted to the designated depth in the hole. Epoxy should fill the hole flush to the edge with no voids.

For setting injection ports and sealing caps/cracks

1. Apply a small amount of properly mixed epoxy to the back of a port and carefully center the port over the crack, taking caution to not seal the injection port.
2. After setting the port, apply additional *Planibond AE* to the shoulders of the port and extend epoxy to 1/2" (12 mm) on both sides of the crack, covering the crack between ports with epoxy applied to about 1/4" (6 mm) thick.

For use as a patching mortar or grout

For repairing voids greater than 1/4" (6 mm), *Planibond AE* may be blended with clean, dried, graded silica sand to the desired gel-sand ratio, up to a maximum 1-to-1 ratio by volume.

CLEANUP

- Clean equipment before *Planibond AE* cures to a hardened state using an appropriate solvent. Cured material can only be removed mechanically.

LIMITATIONS

- Remove water from wet or damp holes or joints with oil-free compressed air.
- Use on substrate with temperatures between 40°F and 105°F (4°C and 41°C). Precondition *Planibond AE* to 73°F (23°C) before use. In cool weather (below 73°F or 23°C), precondition *Planibond AE* to 85°F (29°C) for easier application.
- Do not thin with solvents.
- Do not allow mixed epoxy to remain in a static mixer for more than 5 minutes, or epoxy may gel and blockage may occur.
- Do not place epoxy once it starts curing or gets hot or sticky, and do not disturb it while it cures.

Product Performance Properties

as tested under ASTM C881-13

Laboratory Tests	Results
Heat deflection at 7 days (ASTM D648) when cured at 73°F (23°C)	127°F (53°C)
Absorption at 24 hours (ASTM D570) when cured at 73°F (23°C)	0.10%
Linear coefficient of shrinkage (ASTM D2566)	< 0.005 in./in. (0.127 mm/mm)
Gel time, 60-gram sample – ASTM C881	
Class B	> 35 minutes
Class C	> 35 minutes
VOCs – Rule #1168 of California's SCAQMD	
Class B	0 g per L
Class C	0 g per L
Consistency or viscosity	
Class B	Nonsag
Class C	Nonsag
Bond strength, 2-day cure – ASTM C882	
Class B	1,200 psi (8.28 MPa)
Class C	1,300 psi (8.97 MPa)
Bond strength, 14-day cure – ASTM C882	
Class B	3,200 psi (22.1 MPa)
Class C	3,400 psi (23.4 MPa)
Compressive strength – ASTM D695	
Class B	10,900 psi (75.2 MPa)
Class C	11,900 psi (82.1 MPa)
Compressive modulus – ASTM D695	
Class B	840,000 psi (5 793 MPa)
Class C	880,000 psi (6 069 MPa)
Elongation at break – ASTM D638	
Class B	1.3%
Class C	1.3%

Pull-Out Strengths for Threaded Rods

Rod Size	Hole Diameter	Hole Depth	Pull-Out Strength
3/8" (1 cm)	7/16" (1.1 cm)	3-3/8" (8.6 cm)	8,840 lbf (4 010 kgf)
3/8" (1 cm)	7/16" (1.1 cm)	5-5/8" (14.3 cm)	10,100 lbf (4 581 kgf)
1/2" (1.3 cm)	9/16" (1.4 cm)	4-1/2" (11.4 cm)	12,450 lbf (5 647 kgf)
1/2" (1.3 cm)	9/16" (1.4 cm)	7-1/2" (19 cm)	18,170 lbf (8 241 kgf)
5/8" (1.6 cm)	3/4" (1.9 cm)	5-5/8" (14.3 cm)	26,970 lbf (12 233 kgf)
5/8" (1.6 cm)	3/4" (1.9 cm)	9-3/8" (23.8 cm)	30,200 lbf (13 698 kgf)
3/4" (1.9 cm)	7/8" (2.2 cm)	6-3/4" (17.1 cm)	33,610 lbf (15 245 kgf)
3/4" (1.9 cm)	7/8" (2.2 cm)	11-1/4" (28.6 cm)	39,020 lbf (17 699 kgf)

Shelf Life and Application Properties

Shelf life	2 years in original, unopened container at 73°F (23°C). Store at 50°F to 90°F (10°C to 32°C).

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.

Packaging

Size/Color
Dual-cartridge unit: 20.3 U.S. oz. (600 mL)
Kit: 2 U.S. gals. (7.57 L) Part A epoxy resin, 1 U.S. gal. (3.79 L): Dark gray Part B curing agent, 1 U.S. gal. (3.79 L): White

CSI Division Classifications

Maintenance of Concrete	03 01 00
Epoxy Grouting	03 63 00

Approximate Coverage*

Size	Yield
20.3 U.S. oz. (600 mL)	37 cu. in. (606 cm^3)
2 U.S. gals. (7.57 L)	462 cu. in. (7 571 cm^3)

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

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).

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