



**PLANIBOND AE**  
**High-Strength, Nonsag, Epoxy Anchoring Gel**

**SECTION 03 64 23**  
**POLYURETHANE/EPOXY INJECTION GROUTING**

**1. GENERAL**

**1.1 SECTION INCLUDES**

- A. Surface preparation and field application for a high-strength, two-part, nonsag, 100%-solids, solvent-free, epoxy anchoring gel designed for a wide variety of bonding and repair applications.

**1.2 RELATED SECTIONS**

- A. Section 03 64 00 – Injection Grouting

**1.3 REFERENCES**

- A. ASTM International:
  - 1. ASTM C881, Types I, II, IV and V – Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.

**1.4 SUBMITTALS**

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color and patterns.

**1.5 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Minimum 5 years' experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 years' experience installing similar products.
- C. Source Limitations: For repair products, obtain each color, grade, finish, type and variety of product from single source and from single manufacturer with resources to provide products of consistent quality in appearance and physical properties.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by Architect.
  - 2. Do not proceed with remaining work until workmanship is approved by Architect.
  - 3. Refinish mock-up area as required to produce acceptable work.



## 1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

## 1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

## 1.9 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

# 2. PRODUCTS

## 2.1 MANUFACTURERS

- A. Product Performance:

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 at shrinkage – ASTM D2566	< 0.005 in./in. (0.127 mm/mm)
Gel time, 60-gram sample – ASTM C881 Class B	> 35 min.
Class C	> 35 min.
VOCs (Rule #1168 of California SCAQDM) 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%

Acceptable Manufacturer:

MAPEI North America  
1144 E. Newport Center Dr.; Deerfield Beach, FL 33442  
Toll-Free for CRS Technical Services: Tel. 888-365-0614  
Email: [CRS@mapei.com](mailto:CRS@mapei.com)  
Web: [www.mapei.com](http://www.mapei.com)

- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
- C. Substitutions: Not permitted.

## 2.2 EPOXY CRACK-INJECTION MATERIALS

- A. Epoxy Crack Adhesive: ASTM C881/C881M, bonding system. Free of VOCs.
  - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Planibond AE
  - 2. Type IV at structural locations and where indicated, Type I at other locations.
  - 3. Type I, Type II: Non-load-bearing applications.
  - 4. Type IV: Load-bearing applications.
  - 5. Bond Strength: Not less than 3,400 psi (23.4 MPa) within 14 days when tested according to ASTM D882, Class C.

## 2.3 MISCELLANEOUS MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I, II or III unless otherwise indicated.
- B. Water: Potable.

## 2.4 MIXES

- A. General: Mix products, in clean containers, according to manufacturer's written instructions.
  - 1. Do not add water, thinners or additives unless recommended by manufacturer.
  - 2. When practical, use manufacturer's premeasured packages to ensure that materials are mixed in proper proportions. When premeasured packages are not used, measure ingredients using graduated measuring containers; do not estimate quantities or use shovels or trowels as units of measure.
  - 3. Do not mix more materials than can be used within time limits recommended by manufacturer. Discard materials that have begun to set.



### 3. EXECUTION

#### 3.1 EXAMINATION

- A. Properly prepared concrete at least 3 to 7 days old, stable, sound and dry, as well as masonry and wood.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### 3.2 PREPARATION

Ensure that all appropriate tools and safety equipment are used. Refer to technical data sheets (TDSs) for surface preparation.

- A. For anchoring, drill hole(s) to the engineer-approved diameter and depth. Use a nylon-brush and oil-free compressed air to thoroughly clean the hole(s) of any dirt, dust and drilling residue from the base of the hole.
- B. For bonding to steel ensure that steel is clean and prepared to white metal finish. If bonding to concrete, the concrete should be at least 28 days old, properly prepared and mechanically clean, with all weak material removed as per ASTM D 4258.

#### 3.3 MIXING

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

- A. Pre-filled cartridges require application with a nozzle and gun to ensure adequate mixing of Part A and Part B.
- B. For the 2-U.S.-gal. (7.57-L) kit, empty both Part A and 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) for about 3 minutes with an epoxy paddle to a uniform light gray color.
- C. Divide the mixed material into small containers to extend the gel time, because the material left in mass will gel quickly due to its exothermic properties.

#### 3.3 INSTALLATION

Read all installation instructions thoroughly before installation.

- A. Since Planibond AE can be used in various types of applications, refer to the TDSs for instructions of the installation that is appropriate for your particular job conditions.

END OF SECTION