



PLANIBOND HIGH-MOD GEL
High-Modulus, Nonsag, Structural Epoxy Adhesive

SECTION 03 64 23
POLYURETHANE / EPOXY INJECTION GROUTING

Part 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 of 5 years' experience in manufacturing similar products.
- B. Installer Qualifications: Minimum of 2 years' experience in 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 at least 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.

Part 2 PRODUCTS

2.1 MANUFACTURERS

A. Product Performance:

Consistency - ASTM C881 – Grade 3
Class A, B and C

Nonsag (0.0 in.)

Gel time, 60-gram sample – ASTM C881

Class A

> 200 min.

Class B

> 150 min.

Class C

> 30 min.

Compressive yield strength – ASTM D695 – at 7 days

Class A

10,054 psi (69.3 MPa)

Class B

10,861 psi (74.9 MPa)

Class C

11,320 psi (78.1 MPa)

Hardened to hardened concrete bond strength – ASTM C882 – moist-cured for 2 days

Class A

1,688 psi (11.6 MPa)

Class B

2,162 psi (14.9 MPa)

Class C

2,826 psi (19.5 MPa)

Hardened to hardened concrete bond strength – ASTM C882 – moist-cured for 14 days

Class A

2,832 psi (19.5 MPa)

Class B

2,727 psi (18.8 MPa)

Class C

3,072 psi (21.2 MPa)

Plastic to hardened concrete bond strength – ASTM C882 – moist-cured for 14 days

Class A, B and C

2,653 psi (18.3 MPa)



% Elongation at break – ASTM D638 – at 7 days
Class A, B and C 0.20 %

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
Web: 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 Hi-Mod Gel.
 - 2. Type I, Type II: Non-load-bearing applications.
 - 3. Type IV: Load-bearing applications.
 - 4. 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.

Part 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. Clean steel mechanically to remove any corrosion or coating (to a near white metal finish) before application of Planibond Hi-Mod Gel.
- B. Mechanically clean and prepare concrete substrates by engineer-approved mechanical methods to obtain an ICRI concrete surface profile (CSP) of ≥ 3 .
- C. Concrete substrate and ambient room temperatures must be between 50°F and 95°F (10°C and 35°C) before application. Temperatures must be maintained within this range for at least 72 hours after the installation of Planibond Hi-Mod Gel.
- D. Substrates must be dry or damp. Do not apply Planibond Hi-Mod Gel on standing water.

3.3 MIXING

- A. Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details. 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, premix the Part A epoxy resin and Part B curing agent independently before mixing together.
- C. When mixing Planibond Hi-Mod Gel, 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).
- D. 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.

3.4 INSTALLATION

Read all installation instructions thoroughly before installation.

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

END OF SECTION