

Planigrout 310 [NA]

High-Performance, Highly Flowable, Three-Component Epoxy Grout



NORTH AMERICA [NA]

DESCRIPTION

Planigrout® 310 [NA] is a high-performance epoxy grout that can be placed in precision applications that require high-flow capabilities as well as high compressive and dynamic strengths.

FEATURES AND BENEFITS

- Excellent flowability even while loaded with a full aggregate blend for narrow passages and large bases
- Low exothermic curing property allows for pours up to 6" (15 cm)
- High chemical resistance that is ideal for industrial installations
- High performance with adjustable flow rate
- Low in dust and can be cleaned with water

WHERE TO USE

- Precision grouting of large machine baseplates exposed to dynamic loads, such as centrifugal pumps, conveyors, generators, soleplates, anchor bolts, crane rails, etc.
- Ideal for high-stress applications found in harsh industrial environments such as the oil industry, pulp and paper, wharfs, railyards and other industrial manufacturing settings
- Use for new-equipment installations.

- Use for fast-turnaround re-grouting applications.
- Use in areas subject to chemical attack that will not allow use of traditional cement-based grouts.

SURFACE PREPARATION

- Concrete surfaces must be clean and free of loose particles, efflorescence, paints, tars, grease, asphaltic materials, bond breakers, curing compounds, wax, and any foreign substance or any conditions that may affect product performance or proper bonding.
- Mechanically profile and prepare concrete surfaces by engineer-approved methods in accordance with the most current ICRI 310.2R Guidelines to obtain an International Concrete Repair Institute (ICRI) concrete surface profile (CSP) of #5 to #10.
- Do not use hammers, needle points or concrete breakers rated as more than 25 lbs. (11.3 kg) to prepare concrete. If utilizing hydro-demolition, wait at least 48 hours or until the concrete is visibly dry to proceed with grouting application.
- On new concrete: Ensure that the concrete is cured and dry. The concrete should be at least 14 days old. Refer to ACI 351.5-15, Specification for Installation of Epoxy Grout between Foundations and Equipment Bases.
- On existing concrete: Ensure that all contaminated or oil-saturated concrete is removed and that the placement area is free from soft, unsound concrete. Repair all cracks with an appropriate crack injection epoxy and allow curing prior to grouting.
- For anchor holes: Clean anchor holes with oil-free compressed air to ensure that all dust, dirt and debris have been removed. Anchor holes should be dry before grouting takes place.
- Metal surfaces that will come in contact with the grout should be abrasive-blast to a near-white finish metal and wiped clean with a non-residue solvent such as acetone.
- Use paste wax, caulk or other means to protect any surfaces not intended to bond with grout.
- To limit cracking on the shoulders, anchors and expansion joints can be added. Contact MAPEI Technical Services for more information.

Note: Refer to API Recommended Practice 686, Section 3.6 for more information regarding surface preparation requirements.

PREPARATION OF FORMS

- Build forms from materials that will have adequate strength and durability to handle the weight of the epoxy grout. It is typical to utilize 3/4" (19 mm) well-braced plywood.
- Formwork should be installed at a distance of 2" to 6" (5 to 15 cm) from the baseplate. The width should be limited to prevent excessive cracking.
- Before installing formwork, it should be coated with multiple coats of an industrial-grade paste wax to facilitate removal after the grout cures.
- Install formwork within contract specifications and anchor it securely to the foundation with drilled anchors.
- Seal the formwork with caulk or putty so that the epoxy grout is not able to escape from the formed area.
- Utilize strips that produce a 45-degree angle at all vertical corners within the form and on horizontal edges to eliminate sharp edges.
- Design the forms to create an adequate hydraulic head to facilitate grout placement and flow in one direction.

Refer to API Recommended Practice 686, Section 3.7, and/or ACI 351.5-15, Specification for Installation of Epoxy Grout between Foundations and Equipment Bases.

MIXING

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

1. Condition all materials to between 75°F and 90°F (24°C and 32°C) for at least 24 hours before mixing.
2. Mix only complete units of parts A and B. Do not thin the mixture with solvents or add more aggregate than allowed for the pre-measured kit of *Planigrout 310* [NA].
3. Add Part B to the Part A pail and mix the material with a low-speed drill (at 300 rpm) and paddle mixer for 3 minutes or until blended uniformly. Do not introduce air into the epoxy while mixing. While mixing, remove all material from the sides of the mixing vessel to ensure that the epoxy is fully blended.
4. After blending parts A and B, transfer the mixed material to a mortar mixer and add Part C one bag at a time, waiting until the aggregate from each consecutive bag is wetted out before adding the next bag. Once all four bags of aggregate have been added and are wetted out, discharge the material and proceed with grout placement.

Note: For the first batch of material, remove half of a bag of Part C to compensate for the loss of resin on the mixing equipment.

PRODUCT APPLICATION

Read all installation instructions thoroughly before application. Refer to MAPEI's *Planigrout 350* [NA] and *Planigrout 310* [NA] installation guides.

1. Place *Planigrout 310* [NA] into the forms from one location or entry port to ensure a consistent flow direction.
2. Use a head box to create head pressure and assist in product placement. Move the head box if needed for larger baseplates in order to ensure complete encapsulation.
3. Ensure that *Planigrout 310* [NA] is placed consistently. If a headbox is used, do not allow the volume of grout to completely empty within it. Place expansion joints as required, typically every 3 to 7 feet (0.91 to 2.13 m) or as directed by the equipment manufacturer.
4. Examine the forms for leaks. Plug all leaks with putty or a fast-setting cement if there is leakage during placement.
5. When forms are filled to the desired depth, the exposed surface may be lightly misted (avoid puddling) with undiluted *Mapecrete® Film* or a suitable solvent such as xylol or toluene, and then finished with a trowel or brush.

CLEANUP

Planigrout 310 [NA] is a low exothermic grout. Its extended set time provides ample time to clean equipment with a soap-and-water solution. Cured material can only be removed mechanically.

CURING

Do not wet-cure. Air-cure the grout shoulders until the final set. Protect the grout from rain for the first 24 hours.

LIMITATIONS

- For grouting in cold and hot temperatures, contact MAPEI Technical Services for support. Grouting in hot temperatures can cause excessive thermal cracking and delamination. Cold temperatures will lower the grout fluidity.
- No additional ingredients are required. Do not thin *Planigrout 310* [NA] with solvents or water. Only mix with the aggregates provided in the kit.
- The minimum depth of application for *Planigrout 310* [NA] is 1/2" (12 mm).
- The maximum depth of application for *Planigrout 310* [NA] is 6" (15 cm) per lift.
- Always follow the provided temperature guidelines for mixing and installing product.
- Do not use less than 4 bags of aggregate in an attempt to create a more flowable mixture. Mix complete kits.
- Create a test mixture before job installation to validate that appropriate flow has been achieved.
- Cracking of the shoulders can appear after the grout set due to thermal contraction. Shoulders cracking will not affect the performance of the grout beneath the baseplate.
- Any gaps beneath the baseplate and cracks can be filled with a two-component epoxy resin such as *Epojet*™ [NA] or *Epojet LV* [NA].

Product Performance Properties

when mixed with 4 bags of Part C (10:1 by volume)

Laboratory Tests		Results		
Compressive strength – ASTM C579				
7-day cure at 75°F (24°C)		> 14,500 psi (100 MPa)		
Post-cured at 140°F (60°C)		> 16,000 psi (110 MPa)		
Tensile strength – ASTM C307		> 2,100 psi (14.5 MPa)		
Flexural strength – ASTM C580		5,000 psi (34.5 MPa)		
Modulus of elasticity – ASTM C580		2,000,000 psi (13 793 MPa)		
Bond strength – ASTM C882		3,000 psi (20.7 MPa)		
Linear shrinkage on cure – ASTM C531		0.072%		
Coefficient of thermal expansion – ASTM C531		3.2 x 10 ⁻⁵ in/in/° F		
Shore “D” hardness – ASTM D2240		90		
Density – ASTM C905		2.16 g/cm ³		
Effective bearing area – ASTM C1339		> 85%		
Flow box – ASTM C1339			1" (2.5 cm)	2" (5 cm)
		End	75 seconds	31 seconds
		Fill	145 seconds	44 seconds
VOC content (SCAQMD Rule 1168)		< 250 g per L		
Typical VOC content per SCAQMD Rule 1168 testing methods		4 g per L		

Shelf Life and Product Characteristics

Shelf life	2 years in original, unopened container at 73°F (23°C). Store at 40°F to 95°F (4°C to 35°C).

Application Properties

Color of mixture	Gray
Consistency	Highly flowable
Application temperature range	50°F to 95°F (10°C to 35°C)
Pour depth	1/2" to 6" (12 mm to 15 cm)
Pot life	About 2 to 3 hours
Initial set	3 hours
Final set	8 hours

CSI Division Classification

Epoxy Grouting	03 63 00

Packaging

Size
Kit: 1.62 cu. ft. (0.046 m ³) and 218.6 lbs. (99.2 kg):
Part A: Pail measuring 3.5 U.S. gals. (13.2 L) with 2.08 U.S. gals. (7.87 L) of resin
Part B: Pail measuring 2 U.S. gals. (7.57 L) with 1.35 U.S. gals. (5.11 L) of hardener
Part C: 4 bags of aggregate, at 47 lbs. (21.3 kg) each

Approximate Coverage*

Number of aggregate bags (Part C)	Yield
4	1.62 cu. ft. (0.046 m ³)

* For estimating purposes only

ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (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).

WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

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 nor 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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Edition Date: April 13, 2026 MK 3000389 (26-1607)

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