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Planigrout[®] 350[®]

High-Performance, Deep-Pour, Three-Component Epoxy Grout

DESCRIPTION

Planigrout 350 is a high-performance epoxy grout that can be placed in deep-pour applications and where high compressive and dynamic strengths are required.

FEATURES AND BENEFITS

- Excellent flowability even while loaded with a full aggregate blend
- Low exothermic curing property allows for large-volume deep pours up to 18" (45.7 cm)
- High chemical resistance – ideal for industrial installations
- High performance with adjustable flow rate
- Low creep at high temperatures

WHERE TO USE

- Grouting of large machine base plates, 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 regrouting applications.
- Use in areas subject to chemical attack that will not allow use of traditional cement-based grouts.

SURFACE PREPARATION

- Concrete surface 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 #9.
- Do not use bush heads, needle points or concrete breakers more than 25 lbs. (11.3 kg) to prepare concrete. If utilizing hydrodemolition, 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. 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 procedures.
- 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.

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.
- 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 350*.
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.
5. Flow of material can be adjusted by utilizing less than four bags of aggregate. However, do not utilize less than 2.5 bags of the supplied aggregate.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Place *Planigrout 350* 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 headbox if needed for larger baseplates in order to ensure complete encapsulation.

3. Ensure that *Planigrout 350* is placed consistently. If 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, and 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 350* is a low exothermic grout. Its extended set time provides ample time to clean equipment with a soap-and-water solution. Once material begins to harden, xylol or a similar solvent will be required for cleaning. Cured material can only be removed mechanically.

LIMITATIONS

- Condition all materials to a temperature between 75°F and 90°F (24°C and 32°C) for at least 24 hours before mixing and placement.
- No additional ingredients are required. Do not thin *Planigrout 350* with solvents.
- The maximum depth of application for *Planigrout 350* is 18" (45.7 cm) per lift.
- Always follow the provided temperature guidelines when mixing and applying product.
- Do not use less than 2.5 bags of aggregate in an attempt to create a more flowable mixture.
- Create a test mixture before job installation to validate that appropriate flow has been achieved.

Product Performance Properties when mixed with 4 bags

Laboratory Tests	Results
Compressive strength – ASTM C579	
7-day cure at 75°F (24°C)	> 14,000 psi (> 96.6 MPa)
Post-cured at 140°F (60°C)	> 15,000 psi (> 103 MPa)
Tensile strength – ASTM C307	> 2,000 psi (13.8 MPa)
Flexural strength – ASTM C580	> 4,000 psi (27.6 MPa)
Modulus of elasticity – ASTM C580	2.49 x 10 ⁶
Bond strength – ASTM C882	> 2,500 psi (17.2 MPa), concrete fail
Linear shrinkage on cure – ASTM C531	-0.032%
Coefficient of thermal expansion – ASTM C531	2.3 x 10 ⁵
Shore “D” hardness – ASTM D2240	90
Density – ASTM C905	2.30 g per cm ³
Pour depth at 75°F (24°C)	2" to 18" (5 to 45.7 cm)
VOCs (Rule #1168 of California's SCAQMD)	0 g per L

Shelf Life and Product Characteristics

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

Laboratory Tests	Results
Color of mixture	Dark gray/black
Consistency	Flowable
Application temperature range	50°F to 95°F (10°C to 35°C)
Pot life	About 3 to 4 hours
Initial set	4 hours
Final set	9 hours

CSI Division Classification

Epoxy Grouting	03 63 00
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Packaging

Size
Kit: 2 cu. ft. (0.057 m ³) and 288 lbs. (131 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 64.3 lbs. (29.2 kg) each

Approximate Coverage*

Number of aggregate bags (Part C)	Yield
4	2 cu. ft. (0.057 m ³)
3	1.56 cu. ft. (0.044 m ³)
2.5	1.34 cu. ft. (0.038 m ³)

* For estimating purposes only

Planigrout 350



Refer to the SDS for specific data related to health and safety as well as product handling.

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