Planigrout 712

High-Performance, Nonshrink, Nonmetallic Grout

DESCRIPTION

Planigrout® 712 is a one-component, nonshrinking, nonmetallic, cement-based grout. *Planigrout 712* contains a corrosion inhibitor and silica fume, as well as a special blend of fine aggregate and plasticizers that provide exceptional placing and performance characteristics.

FEATURES AND BENEFITS

- Excellent compressive strength and positive expansion for structural grouting applications
- Can be used at a plastic, flowable or fluid consistency
- Provides superior resistance to water penetration, freeze/thaw cycles and de-icing salts
- One component system that requires only the addition of potable water
- Has extremely low chloride content and is free of metallic aggregates, aluminum powder and gypsum

INDUSTRY STANDARDS AND APPROVALS

- Conforms to ASTM C1107 and CRD C621 standards

WHERE TO USE

- For use as a nonshrink, premixed structural grout in applications requiring full load-bearing and stabilization. *Planigrout 712* is also suitable for precast, cast-in-place and prestressed concrete applications.
- For interior and exterior applications over clean, properly prepared concrete substrates
- For structural grouting and anchoring in residential, commercial, industrial, institutional, marine and infrastructure applications

SURFACE PREPARATION

- Concrete surface must be clean and free of loose particles, efflorescence, paint, tars, grease, asphaltic materials, bond breakers, curing compounds, wax and any foreign substance. Reference ACI 351.1R or 351.2R for surface preparation and grouting procedures.
- Thoroughly wet the concrete surface (prepare to a saturated surface-dry [SSD] condition). Remove all standing water from low areas on the foundation, as well as in bolt holes.
- Ensure that the concrete substrate and ambient room temperatures are between 41°F and 95°F (5°C and 35°C) before application. Maintain temperatures within this range for at least 72 hours after the placement of *Planigrout 712*. Water and material should be maintained at about 70°F (21°C).
- Mechanically prepare the concrete substrate to achieve a concrete surface profile (CSP) of #5 to #10 per ICRI 310.2R.
- Steel baseplate should be mechanically cleaned to a near-white finish similar to SSPC-SP2.

MIXING

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

1. Into a clean mixing pail, pour about 3/4 of the required amount of cool, clean, potable water (see the “Product Performance Properties” table below for mixing ratios). Use the minimum amount of water required to achieve the desired consistency.
2. Slowly add *Planigrout 712* to the water while mixing, using a low-speed mixer.
3. Add as much of the remaining 1/4 of water as needed to achieve the desired consistency. Mix for up to 3 minutes, scraping down any unmixed powder after 1 to 2 minutes. Remix to a smooth, homogenous consistency.
4. For instructions on mixing super sacks, contact your MAPEI technical representative.

PRODUCT APPLICATION

Read all application instructions thoroughly before installation. For grouting procedures, reference ACI 351.1R or 351.2R.

1. a. Plastic application: *Planigrout 712* may be rodded or chained into place.
   b. Flowable application: *Planigrout 712* may be used with a low-pressure grout pump, or poured, hand-rodded and chained into place.
   c. Fluid application: *Planigrout 712* meets ASTM C939 consistency requirements, which allows placement to tight clearances from 1/2" to 6" (12 mm to 15 cm).
2. Because *Planigrout 712* is designed for various consistencies and such characteristics as workability and mechanical strength, conduct a preliminary test or mockup to verify installation capabilities. Consult MAPEI’s Technical Services Department regarding specific project requirements.

3. *Planigrout 712* is recommended for jointing structural precast components and for filling rigid joints up to a thickness of 6" (15 cm).
4. To facilitate the filling of hard-to-reach areas, use a wood strip, steel rod or chain. Do not vibrate.
5. For anchor bolt/dowel grouting, the hole diameter should be 1" (2.5 cm) greater than the bar diameter. When anchoring, degrease any anchor bolts. Isolate *Planigrout 712* from direct contact with aluminum.

CURING

- Curing of the exposed area is recommended for 72 hours after placement using wet curing, damp burlap, polyethylene sheeting or a suitable water-based curing compound.
- Protect from excessive heat and wind.
- Reference ACI 308.1 (Standard Specification for Curing Concrete).

CLEANUP

- Wash hands and tools promptly with water before the material hardens. Cured material must be mechanically removed.

LIMITATIONS

- For depths greater than 6" (15 cm), contact MAPEI's Technical Service Department for recommendations.
- Do not use for extreme dynamic load applications, such as electric turbine generators and stamping presses, or in place of a structural epoxy grout for superior chemical resistance. Consult MAPEI's Technical Services Department for product recommendations.
- Do not add additives or cements to *Planigrout 712*.
- Ensure that *Planigrout 712* is protected from freezing after placement and until final set, and that it is maintained at the minimum temperature of 41°F (5°C) during and 3 days after placement.
- Ensure that *Planigrout 712* is used in confined areas and not for concrete restoration.
- Do not use damaged or previously opened bags.
- Do not hand-mix *Planigrout 712*.
- Do not overwater the material, or it will not perform as specified.
- Cracks can develop at the grout's shoulders. These do not affect the performance. Cracks can be treated to prevent penetration by water and other contaminants. Contact MAPEI's Technical Services Department for product recommendations.

Product Performance Properties

Laboratory Tests	Results		
	Plastic consistency	Flowable consistency	Fluid consistency
Mixing water ratio	16.48%	17.62%	21.15%
Mixing ratio (water per 50 lbs. [22.7 kg] of powder)	3.95 U.S. qts. (3.74 L)	4.23 U.S. qts. (4.0 L)	5.07 U.S. qts. (4.80 L)
Flow table typical value – ASTM C230	100% to 125%	125% to 145%	Efflux < 30 seconds (ASTM C939)
Compressive strength – ASTM C942*			
1 day	4,000 psi (27.6 MPa)	3,600 psi (24.8 MPa)	2,500 psi (17.2 MPa)
7 days	9,000 psi (62.1 MPa)	8,000 psi (55.2 MPa)	6,200 psi (42.8 MPa)
28 days	11,500 psi (79.3 MPa)	9,000 psi (62.1 MPa)	7,250 psi (50 MPa)
Flexural strength – ASTM C348 (CAN/CSA-A23.2-8C)			
28 days	> 1,400 psi (9.66 MPa)	> 1,200 psi (8.28 MPa)	> 1,000 psi (6.90 MPa)
Bond strength – ASTM C882			
28 days		> 2,200 psi (15.2 MPa)	> 2,100 psi (14.5 MPa)
Volumetric change	Conforms to ASTM C1107 and CRD-C621 standards		
Bleeding – ASTM C940	Unnoticeable		
VOC content	0 g per L		

** The data shown is typical for controlled laboratory conditions. Reasonable variation from these results can be expected due to interlaboratory precision and bias. When testing the field-mixed material, other factors such as variations in mixing, water content, temperature and curing conditions should be considered.*

Shelf Life and Product Characteristics
before mixing

Shelf life	1 year in original bag stored in a dry, heated, covered and well-ventilated place
Physical state	Powder
Color	Gray

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.

Application Properties

	Plastic consistency	Flowable consistency	Fluid consistency
Mixing ratio (water per 50 lbs. [22.7 kg] of powder)	3.95 U.S. qts. (3.74 L)	4.23 U.S. qts. (4.0 L)	5.07 U.S. qts. (4.80 L)
Working time	1 hour	1 hour	1 hour
Initial set – ASTM C191	< 5.5 hours	< 6 hours	< 7 hours
Final set – ASTM C191	< 7.5 hours	< 8 hours	< 9 hours

CSI Division Classification

Non-Metallic, Nonshrink Grouting	03 62 13

Packaging

Size
Bag: 50 lbs. (22.7 kg)
Super sack: 1,874 lbs. (850 kg), available in Canada
Super sack: 2,500 lbs. (1 134 kg), available in the USA
Super sack: 3,000 lbs. (1 361 kg), available in the USA

Approximate Coverage**

Yield
Per bag measuring 50 lbs. (22.7 kg): 0.43 cu. ft. (0.0122 m^3)
Per super sack measuring per 2,500 lbs. (1 134 kg): 21.5 cu. ft. (0.61 m^3)
Per super sack measuring per 3,000 lbs. (1 362 kg): 25.8 cu. ft. (0.73 m^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 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-durabilite@mapei.com.

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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For the most current product data and BEST-BACKED[SM] warranty information, visit www.mapei.com.

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