



Planigrout[®] 712

**High-Performance,
Nonshrink, DOT Grout**



DESCRIPTION

Planigrout 712 is a one-component, nonshrink, nonmetallic, cement-based DOT (Department of Transportation) grout that meets CRD C621 and ASTM C1107 standards. *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
- 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
- | | |
|--|--------------------|
| <u>LEED Points Contribution</u> | <u>LEED Points</u> |
| MR Credit 5, Regional Materials* | Up to 2 points |

** Using this product may help contribute to LEED certification of projects in the categories shown above. Points are awarded based on contributions of all project materials.*

WHERE TO USE

- For use as a nonshrink, premixed plastic-to-flowable-to-fluid structural grout in applications requiring full load-bearing and stabilization. Use as a structural grout for columns, machine bases, anchor bolts and base plates.
- *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. *Planigrout 712* achieves high compressive strengths (greater than 8,000 psi [55.2 MPa] in a flowable consistency in 28 days).

LIMITATIONS

- For depths greater than 2" (5 cm) and up to 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 for product recommendations.
- Do not add other additives or cements to *Planigrout 712*.
- Ensure that *Planigrout 712* is protected from freezing after placement and until final set, and that the minimum temperature is maintained at 41°F (5°C) during and 3 days after placement.



- Ensure that *Planigrout 712* is used in confined areas and not intended for concrete restoration.
- Do not use damaged or previously opened bags.

SUITABLE SUBSTRATES

- Properly prepared, structurally sound, fully cured masonry and concrete substrates (at least 28 days old)

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

- Ensure that all substrates are clean, structurally sound, stable and solid, with all loose materials or unsound concrete removed.
- Thoroughly clean the surface of substances that could affect the bond strength of *Planigrout 712*, including dirt, paint, tar, asphalt, wax, oil, grease, latex compounds, form release agents, laitance, loose toppings, foreign substances and any other residues.
- Reference ACI 351.1R or 351.2R (see "Related Documents" chart) 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).

MIXING

Note: Choose all appropriate safety equipment before use. Refer to the (Material) Safety Data Sheet for more information.

1. Into a clean mixing pail, pour about 3/4 of the required amount of cool, clean potable water (see "Technical Data" table for mixing ratios). The water demand will vary depending on temperature, humidity, mixing equipment and material. Use the minimum amount of water required to achieve the desired consistency.
2. Slowly add *Planigrout 712* to water while mixing, using a low-speed mixer. Do not hand-mix *Planigrout 712*. 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.
3. Place immediately after mixing.
4. Do not overwater material, or it will not perform as specified.

PRODUCT APPLICATION

Read all application instructions thoroughly before installation. Reference ACI 351.1R or 351.2R (see "Related Documents" chart) for grouting procedures.

1. Plastic application: *Planigrout 712* may be rodded or chained into place.
2. Flowable application: *Planigrout 712* may be used with a low-pressure grout pump, or poured, hand-rodded and chained into place.
3. Fluid application: *Planigrout 712* meets ASTM C939 consistency requirements, which allows placement to tight clearances from 1/2" to 2" (12 mm to 5 cm).
4. *Planigrout 712* is recommended for jointing structural precast components and for filling rigid joints up to a thickness of 2" (5 cm).
5. To facilitate the filling of hard-to-reach areas, use a wood strip, steel rod or chain. Do not vibrate.
6. 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.
7. 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.

CURING

- Curing 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.

Product Performance Properties

Laboratory Tests	Results		
Planigrout 712 before mixing			
Physical state	Powder		
Color	Gray		
Planigrout 712 mixed (based on desired product fluidity, mix with designated clean potable water)			
	Plastic	Flowable	Fluid
Mixing ratio (water per 50-lb. [22,7-kg] bag)	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)
Pot life	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
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	> 7,200 psi (49,7 MPa)	> 6,200 psi (42,8 MPa)	> 5,700 psi (39,3 MPa)
28 days	> 9,000 psi (62,1 MPa)	> 8,000 psi (55,2 MPa)	> 6,500 psi (44,8 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	Unnoticeable	Unnoticeable

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.

Shelf Life and Application Properties

Shelf life	1 year in original bag stored in a dry, heated, covered and well-ventilated place
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CSI Division Classification

Non-Metallic, Nonshrink Grouting	03 62 13
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Packaging

Product Code	Size
15850000	Bag: 50 lbs. (22,7 kg)

Approximate Coverage*

Size	Yield
Per 50-lb. (22,7-kg) mixed unit	0.43 cu. ft. (0,0122 m ³) bag at flowable consistency

* Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices

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RELATED DOCUMENTS

Grouting Between Foundations and Bases for Support of Equipment and Machinery	ACI 351.1R
Report on Foundations for Static Equipment	ACI 351.2R
Standard Specification for Curing Concrete	ACI 308.1

Refer to the (M)SDS for specific data related to VOCs, health and safety, and handling of product.

STATEMENT OF RESPONSIBILITY

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith.

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.

We proudly support the following industry organizations:



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For the most current **BEST-BACKED™** product data and warranty information, visit www.mapei.com.

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