

# MASTERFLOW® 713 PLUS (Formerly MASTERFLOW® 713)

High-precision nonshrink mineral-aggregate grout

PRODUCT DATA

3 03600

Grouts

## Description

Masterflow® 713 Plus is a cement-based grout with specially graded mineral aggregates. It can be used at any consistency from fluid to damp pack for applications that require precision support and early form stripping or shoulder trimming. Where early form removal is not required but extended working time is needed, use Masterflow® 928. Masterflow® 713 Plus meets all of the requirements of CRD-C 621, Grades B and C, Corps of Engineers Specification for Nonshrink Grout and ASTM C 1107, Grades B and C.

## Yield

One 55 lb (25 kg) bag of Masterflow® 713 Plus mixed with 11.25 lbs (5.1 kg) or 1.35 gallons (5.1 L) of water produces approximately 0.52 ft<sup>3</sup> (0.015 m<sup>3</sup>) of grout.

Water usage will vary with consistency requirements, increasing or decreasing the yield.

## Packaging

55 lb (25 kg) multi-wall paper bags

## Shelf Life

1 year when properly stored

## Storage

Store in unopened bags in clean, dry conditions.

## Features

- One component
- Hardens free of bleeding and settlement
- Highly fluid
- Fluid, flowable, plastic, or damp-pack consistencies
- Nonshrinking

## Benefits

- Ready to mix and use
- Provides maximum effective bearing area for optimum load transfer
- Can be pumped into intricate or inaccessible areas
- Adjustable to jobsite conditions
- Leaves no gaps around equipment and forms

## Where to Use

### APPLICATION

- Where grout needs to have the appearance of concrete or mortar
- Precision-equipment, baseplate, soleplate, and column grouting
- Grouting precast wall panels, beams and columns, concrete systems, structural building members, and curtain walls
- Grouting anchor bolts and dowel rods
- Where early stripping or shoulder trimming is required

### LOCATION

- Interior or exterior

## How to Apply

### Surface Preparation

1. Steel surfaces must be free of dirt, oil, grease, or other contaminants.
2. The surface to be grouted must be clean, saturated surface-dry (SSD), strong, and roughened to a CSP of 5 – 9 following ICRI Guideline 03732 to permit proper bond. For freshly placed concrete, consider using Liquid Surface Etchant (see product data sheet No. 1020198) to achieve the required surface profile.

3. When dynamic, shear or tensile forces are anticipated, concrete surfaces should be chipped with a "chisel-point" hammer, to a roughness of (plus or minus) 3/8" (10 mm). Verify the absence of bruising following ICRI Guideline 03732.
4. Concrete surfaces should be saturated (ponded) with clean water for 24 hours just before grouting.
5. All freestanding water must be removed from the foundation and bolt holes immediately before grouting.
6. Anchor-bolt holes must be grouted and sufficiently set before the major portion of the grout is placed.
7. Shade the foundation from sunlight 24 hours before and 24 hours after grouting.

### Forming

1. Forms should be liquid tight and nonabsorbent. Seal forms with putty, sealant, caulk, polyurethane foam.
2. Moderately sized equipment should utilize a head form sloped at 45 degrees to enhance the grout placement. A moveable head box may provide additional head at minimum cost.
3. Side and end forms should be a minimum 1" (25 mm) distant horizontally from the object grouted to permit expulsion of air and any remaining saturation water as the grout is placed.



## Technical Data

### Composition

Masterflow® 713 Plus is a hydraulic cement-based grout with specially graded mineral aggregates.

### Compliances

- CRD C 621, Grades B and C
- ASTM C 1107, Grades B and C
- City of Los Angeles Research Report Number RR 23137

### Test Data

PROPERTY	RESULTS	TEST METHODS
<b>Compressive strengths, psi (MPa)</b>		ASTM C 942, according to ASTM C 1107
	<b>Plastic<sup>1</sup></b>	<b>Consistency</b>
		<b>Flowable<sup>2</sup></b>
		<b>Fluid<sup>3</sup></b>
1 day	3,400 (23)	3,200 (22)
3 day	5,500 (38)	4,800 (33)
7 day	7,000 (48)	6,500 (45)
28 day	8,500 (59)	7,500 (52)

<sup>1</sup>100% flow on flow table, ASTM C 230, 5 drops in 3 seconds.

<sup>2</sup>135% flow on flow table, ASTM C 230, 5 drops in 3 seconds.

<sup>3</sup>25 – 30 second flow by Corps of Engineers Flow Cone Method, CRD-C 611.

The data shown are based on controlled laboratory tests. Expect reasonable variations from the results given. Control field and laboratory tests on the basis of the desired placing consistency rather than strictly on the water content.

If the work requires that strength tests be made at the jobsite or in the laboratory, do not use cylinder molds. Use 2" (51 mm) metal cube molds as specified by ASTM C 942 or ASTM C 1107.

4. Leave a minimum of 2" (51 mm) between the bearing plate and the form to allow for ease of placement.
5. Use sufficient bracing to prevent the grout from leaking or the forms from moving.
6. Eliminate large, nonsupported grout areas wherever possible.
7. Extend forms a minimum of 1" (25 mm) higher than the bottom of the equipment being grouted.
8. Expansion joints may be necessary for both indoor and outdoor installation. Consult your local Degussa field representative for suggestions and recommendations.

### Temperature

1. For nonshrink grouting, store and mix grout to produce the desired mixed-grout temperature based upon ambient temperatures and jobsite conditions.

#### Recommended Temperature Guidelines for Nonshrink Grouting

	MINIMUM ° F (° C)	MAXIMUM ° F (° C)
Foundation and plates	50 (10)	80 (26)
Mixing water	50 (10)	80 (26)
Grout at mixed and placed temperature	50 (10)	80 (26)

2. If temperature extremes are anticipated or if special placement procedures are planned, contact your local Degussa representative for assistance.
3. When grouting at minimum temperatures, see that foundation, plate, and grout temperatures do not fall below 50° F (10° C) until after final set. Protect the grout from freezing (32° F or 0° C) until it has attained a compressive strength of 3,000 psi (20.7 MPa) in accordance with ASTM C 109.

### Mixing

1. Place estimated water into the mixer (use potable water only), then slowly add the dry grout.
2. The water demand will depend on mixing efficiency and material and the ambient temperature. Use the minimum amount of water required to achieve the necessary placement consistency. Recommended flow is 25 – 30 seconds or greater using the ASTM C 939 Flow-Cone Method. Before placing grout at ambient temperatures below 50° F (10° C) and above 80° F (26° C), consult your Degussa representative.
3. Moderate size batches of grout are best mixed in one or more clean mortar mixers.
4. Mix grout a minimum of 3 minutes after all material and water are in the mixer.
5. Do not mix more grout than can be placed in approximately 10 minutes or less, depending on ambient temperatures.

6. Transport by wheelbarrow or buckets or pump to the equipment being grouted. Minimize the transporting distance.
7. Do not retemper grout by adding water.
8. For aggregate extension guidelines, refer to Appendix MB-10: Guide to Cementitious Grouting.

### Application

1. Place Masterflow® 713 Plus in a continuous pour. Discard grout that becomes unworkable. Make sure that the grout fills the entire space being grouted and remains in contact with the plate throughout the entire grouting process.
2. Immediately after placement, trim the surfaces with a trowel and cover the exposed grout with clean wet rags. Keep the rags wet for 5 – 6 hours.
3. The grout should offer stiff resistance to penetration with a pointed mason's trowel before the grout forms are removed or excessive grout is cut back.
4. To further minimize the potential moisture loss within the grout, cure all exposed grout with an approved membrane curing compound (compliant with ASTM C 309 or preferably ASTM C 1315) immediately after the wet rags are removed.
5. DO NOT VIBRATE GROUT. Steel straps inserted under the plate may be used to help move the grout.
6. Consult your Degussa representative before placing lifts more than 6" (152 mm) in depth.

## For Best Performance

- Hold a pre-job conference with your local representative to plan the installation. Hold conferences as early as possible—before the installation of equipment, sole plates, or rail mounts. Conferences are important for applying the recommendations in this product data sheet to a given project, and they help ensure a placement of highest quality and lowest cost.
- Masterflow® 713 Plus is not intended for use as a floor topping or in large areas with exposed shoulders around baseplates. Where grout is exposed for shoulders, occasional hairline cracks may occur. Cracks may also occur near sharp corners of the baseplate and at anchor bolts. These superficial cracks are usually caused by temperature and moisture changes that affect the grout at exposed shoulders at a faster rate than the grout beneath the baseplate. They do not affect the structural, nonshrink, or vertical support provided by the grout if the foundation-preparation, placing, and curing procedures are properly carried out.
- The temperature of the mixed grout should be in the range of 50 to 80° F (10 to 27° C). Do not use water in an amount or at a temperature that will produce a flow of less than 25 seconds (ASTM C 939) or cause the mixed grout to bleed or segregate. For placement outside of 50 to 85° F (10 to 30° C), contact your local Degussa representative.
- For pours greater than 6" (15 cm) deep, consult your Degussa representative for additional installation procedures.
- Use Masterflow® 816, Masterflow® 1205, or Masterflow® 1341 post-tensioning cable grouts when the grout will be in contact with steel stressed over 80,000 psi (552 MPa).
- Do not vibrate grout. Steel straps inserted under the plate may be used to help move the grout.
- Do not add plasticizers, accelerators, retarders, or other additives unless advised in writing by Degussa Technical Service.
- The water requirement may vary with mixing efficiency, temperature, and other variables.
- For even greater impact resistance (desirable for grout subjected to severe, dynamic operating forces and repetitive loading) use metallic-reinforced Embeco® 885 or Embeco® 636 Plus. Applications requiring such resistance include crane rail plates, heavy presses, and steel or aluminum rolling mills.

- The minimum placement depth is 1".
- Do not use in marine environments.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by Degussa personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

## Health and Safety

MASTERFLOW® 713 PLUS

### Caution

### Risks

Eye irritant. Skin irritant. Lung irritant. May cause delayed lung injury.

### Precautions

KEEP OUT OF THE REACH OF CHILDREN. Avoid contact with eyes. Wear suitable protective eyewear. Avoid prolonged or repeated contact with skin. Wear suitable gloves. Wear suitable protective clothing. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. Wash soiled clothing before reuse.

### First Aid

Wash exposed skin with soap and water. Flush eyes with large quantities of water. If breathing is difficult, move person to fresh air.

### Waste Disposal Method

This product when discarded or disposed of, is not listed as a hazardous waste in federal regulations. Dispose in a landfill in accordance with local regulations.

For additional information on personal protective equipment, first aid, and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the job site or contact the company at the address or phone numbers given below.

### Proposition 65

This product contains materials listed by the state of California as known to cause cancer, birth defects, or reproductive harm.

### VOC Content

0 lbs/gal or 0 g/L.

**For medical emergencies only,  
call ChemTrec (1-800-424-9300).**

---

**Degussa Building Systems**

889 Valley Park Drive  
Shakopee, MN, 55379

[www.degussabuildingsystems.com](http://www.degussabuildingsystems.com)

**Customer Service** 800-433-9517  
**Technical Service** 800-243-6739

**LIMITED WARRANTY NOTICE** Every reasonable effort is made to apply Degussa exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, Degussa MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and Degussa shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the Degussa Technical Manager.

This information and all further technical advice are based on Degussa's present knowledge and experience. However, Degussa assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights. In particular, Degussa disclaims all WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY. DEGUSSA SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. Degussa reserves the right to make any changes according to technological progress or further developments. It is the customer's responsibility and obligation to carefully inspect and test any incoming goods. Performance of the product(s) described herein should be verified by testing and carried out only by qualified experts. It is the sole responsibility of the customer to carry out and arrange for any such testing. Reference to trade names used by other companies is neither a recommendation, nor an endorsement of any product and does not imply that similar products could not be used.

**For professional use only. Not for sale to or use by the general public.**

Form No. 1019301 9/03 (Replaces 1/02)  
Printed on recycled paper including 10% post-consumer fiber.

© 2003 Degussa  
Printed in U.S.A.