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Non-Shrink
Grouting

MasterFlow[®] 713

High-precision non-shrink mineral-aggregate grout

FORMERLY MASTERFLOW 713 PLUS

PACKAGING

55 lb (25 kg) polyethylene-lined bags

YIELD

One 55 lb (25 kg) bag of MasterFlow 713 mixed with 11.25 lbs (5.1 kg) or 1.35 gallons (5.1 L) of water produces approximately 0.52 ft³ (0.015 m³) of grout. Water usage will vary with consistency requirements, increasing or decreasing the yield.

STORAGE

12 months when properly stored

SHELF LIFE

Store in unopened containers in a cool, clean, dry area

VOC CONTENT

0 g/L less water and exempt solvents

DESCRIPTION

MasterFlow 713 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.

PRODUCT HIGHLIGHTS

- Single component, ready to mix and use
- Hardens free of bleeding and settlement providing maximum effective bearing area for optimum load transfer
- Highly fluid allowing pumpability into intricate or inaccessible areas
- Fluid, flowable, plastic, or damp-pack consistencies to help adjust to jobsite conditions
- Non-shrinking leaving no gaps around equipment and forms
- Meets the requirements of ASTM C1107 and US Army Corps of Engineers CRD C621 (ASTM C1107-93a, Grades B and C), at a fluid consistency over a 5 – 10 minute working time.
- Freeze/thaw resistant making it suitable for exterior applications
- Has the appearance of concrete or mortar
- Allows early form stripping or shoulder trimming

APPLICATIONS

- Precision-equipment, baseplate, soleplate, and column grouting
- Pump and tank bases
- Conveyors
- Fan housings and drive motors
- Grouting precast wall panels, beams and columns, concrete systems, structural building members and curtain walls
- Grouting anchor bolts, rebar and dowel rods

Technical Data

Composition

MasterFlow 713 is a hydraulic cement-based grout with specially graded mineral aggregates.

Test Data

PROPERTY	RESULTS			TEST METHOD
Compressive strengths, psi (MPa)				ASTM C 942, according to ASTM C 1107
	Consistency			
	Plastic¹	Flowable²	Fluid³	
1 day	3,400 (23)	3,200 (22)	1,000 (7)	
3 day	5,500 (38)	4,800 (33)	3,000 (20.7)	
7 day	7,000 (48)	6,500 (45)	5,000 (34.5)	
28 day	8,500 (59)	7,500 (52)	7,000 (48)	

¹100% flow on flow table, ASTM C 230, 5 drops in 3 seconds.

²135% flow on flow table, ASTM C 230, 5 drops in 3 seconds.

³25–30 seconds through flow cone per ASTM C 939

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.

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, SSD, strong, and roughened to a CSP of 5–9 following ICRI Guideline 310.2 to permit proper bond.
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 210.3.
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 or polyurethane foam. Use sufficient bracing to prevent the grout from leaking or moving.
2. Moderately sized equipment should utilize a head box to enhance the grout placement.
3. Side and end forms should be a minimum 1" (25 mm) distant horizontally from the equipment to be grouted to permit expulsion of air and any remaining saturation water as the grout is placed.
4. Leave a minimum of 2" between the bearing plate and the form to allow for ease of placement.
5. Eliminate large, non-supported grout areas wherever possible.
6. Extend forms a minimum of 1" (25 mm) higher than the bottom of the equipment being grouted.
7. Expansion joints may be necessary. Consult your local BASF field representative for suggestions and recommendations.

TEMPERATURE

1. For non-shrink grouting, store and mix grout to produce the desired mixed-grout temperature based upon ambient temperatures and jobsite conditions.
2. If temperature extremes are anticipated or if special placement procedures are planned, contact your local BASF 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.

Recommended Temperature Guidelines for Nonshrink Grouting

	MINIMUM ° F (° C)	PREFERRED ° F (° C)	MAXIMUM ° F (° C)
Foundation and plates	45 (7)	50–80 (10–27)	90 (32)
Mixing water	45 (7)	50–80 (10–27)	90 (32)
Grout at mixed and placed temp.	45 (7)	50–90 (10–32)	90 (32)

MIXING

By using the minimum amount of water to provide the desired workability, maximum strength will be achieved. Whenever possible, mix the grout with a mortar mixer or an electric drill with a paddle such as ICRI 320.5 type A, D, E, F, G or H. Put the measured amount of potable water into the mixer, add grout, then mix till a uniform consistency is attained. Do not use water in an amount or a temperature that will cause bleeding or segregation.

NOTE: The water requirement may vary due to mixing efficiency, temperature, and other variables.

1. Add the minimum potable or ASTM C1602-compliant water to the mixer, then slowly add the MasterFlow 713, while mixing.
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 BASF 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 placements greater than 6" (152 mm) in depth, product should be extended with aggregate. Aggregate extension is dependent upon the grout type, placement, application requirements, and is typically required for placement depths beyond the limitation of the neat material. The aggregate should be washed, graded, saturated, surface-dry (SSD), high-density, free from deleterious materials, and comply with the requirements of ASTM C 33. Consult BASF Technical Service for additional guidance.

PLACEMENT

1. Place MasterFlow 713 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 BASF representative before placing lifts more than 6" (152 mm) in depth.

CURING

Cure all exposed grout with an approved membrane curing compound compliant with ASTM C 309 or preferably ASTM C 1315. Apply curing compound immediately after the wet rags are removed to minimize potential moisture loss.

WASTE DISPOSAL METHOD

This product when discarded or disposed of, is not listed as a hazardous waste in federal regulations. Dispose of in a landfill in accordance with local regulations. For additional information on personal protective equipment, first aid, and emergency procedures, refer to the product Safety Data Sheet (SDS) on the job site or contact the company at the address or phone numbers given below.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.basf.us, e-mailing your request to basfbscst@basf.com or calling 1(800)433-9517. Use only as directed.

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

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