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Metallic  
Non-Shrink Grouting

## Technical Data Guide

### RELATED DOCUMENTS

MasterFlow 885 Installation Guide

# MasterFlow® 885

High-precision, non-shrink metallic aggregate grout with extended working time

FORMERLY EMBECO® 885

#### PACKAGING

55 lb (25 kg) polyethylene-lined bags  
3,300 lb (1,500 kg) bulk bags

#### YIELD

One 55 lb (25 kg) bag of MasterFlow 885 grout mixed with approximately 10 lbs (4.5 kg) or 1.2 gallons (4.5 L) of water yields approximately 0.43 ft<sup>3</sup> (0.012 m<sup>3</sup>) of grout.

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

#### STORAGE

Store in unopened containers in cool, clean, dry conditions

#### SHELF LIFE

55 LB BAG: 1 year when properly stored  
3,300 LB BULK BAG: 3 months when properly stored

#### VOC CONTENT

0 g/L less water and exempt solvents

#### DESCRIPTION

MasterFlow 885 is a cement-based metallic aggregate grout with extended working time. It is ideally suited for grouting machines or plates requiring optimum toughness and precision load-bearing support, including machine bases subject to thermal movement.

#### PRODUCT HIGHLIGHTS

- High strength and impact resistance
- High fluidity for ease of placement; self-consolidating
- Extended 30 minute working time ensures proper placement under a variety of conditions
- Pumpable
- High tolerance for wetting and drying cycles
- Non-shrink
- Hardens free of bleeding, segregation, or settlement shrinkage to provide maximum effective bearing area for optimum load transfer
- High tolerance to thermal movement, effects of heating and cooling making MasterFlow 885 ideal for harsh manufacturing environments
- High quality well-graded blend of metallic and quartz aggregate provides high strength, impact resistance; handles dynamic and repetitive loads
- Sulfate resistant for use in marine, wastewater, and sulfate-containing soil environments
- MasterFlow 885 grout meets the requirements of ASTM C 1107 and the U.S. Army Corp of Engineers CRD C 621, Grades B and C.
- Freeze/thaw resistant making it suitable for exterior applications

#### APPLICATIONS

- Compressors, turbines and generators
- Pump bases and drive motors
- Pulverizers
- Tank bases
- Conveyors
- Roller mills and crushers
- Stamping and grinding equipment
- Grouting anchor bolts, rebar and dowel rods

#### SUBSTRATES

- Concrete

**Technical Data**

**Composition**

MasterFlow 885 is a hydraulic cement-based metallic-aggregate grout.

**Compliances**

- CRD C 621, Grades B and C
- ASTM C 1107

**Test Data**

PROPERTY	RESULTS			TEST METHOD
<b>Compressive strengths, psi (MPa)</b>				ASTM C 942, according to ASTM C 1107
	<b>Plastic<sup>1</sup></b>	<b>Consistency Flowable<sup>2</sup></b>	<b>Fluid<sup>3</sup></b>	
1 day	5,000 (34)	5,000 (34)	4,000 (28)	
3 days	7,000 (48)	6,000 (41)	5,000 (34)	
7 days	9,000 (62)	8,000 (55)	7,000 (48)	
28 days	11,000 (76)	10,000 (69)	9,000 (62)	
<b>Volume change</b>	<b>% Change</b>	<b>% Requirement of ASTM C 1107</b>		ASTM C 1090
1 day	> 0	0.0 – 0.30		
3 days	0.05	0.0 – 0.30		
14 days	0.07	0.0 – 0.30		
28 days	0.08	0.0 – 0.30		
<b>Setting time, hr:min</b>	<b>Plastic<sup>1</sup></b>	<b>Consistency Flowable<sup>2</sup></b>	<b>Fluid<sup>3</sup></b>	ASTM C 191
Initial set	3:30	5:00	5:30	
Final set	4:30	6:00	8:00	
<b>Flexural strength,* psi (MPa)</b>				ASTM C 78
3 days	880 (6.1)			
7 days	1,050 (7.2)			
28 days	1,150 (7.9)			
<b>Modulus of elasticity,* psi (MPa)</b>				ASTM C 469, modified
3 days	3.16 x 10 <sup>6</sup> (2.18 x 10 <sup>4</sup> )			
7 days	3.50 x 10 <sup>6</sup> (2.41 x 10 <sup>4</sup> )			
28 days	3.69 x 10 <sup>6</sup> (2.54 x 10 <sup>4</sup> )			
<b>Coefficient of thermal expansion,* in/in/° F (cm/cm/° C)</b>	6.5 x 10 <sup>-6</sup> (11.7 x 10 <sup>-6</sup> )			ASTM C 531
<b>Punching shear strength,* psi (MPa), 3 by 3 by 11" (76 by 76 by 279 mm) beam</b>				BASF Method
3 days	1,600 (11.0)			
7 days	1,800 (12.4)			
28 days	2,600 (17.9)			
<b>Splitting tensile and tensile strength,* psi (MPa)</b>	<b>Splitting Tensile</b>		<b>Tensile</b>	ASTM C 496 (splitting tensile) ASTM C 190 (tensile)
3 days	350 (2.4)		300 (2.1)	
7 days	490 (3.4)		400 (2.8)	
28 days	520 (3.6)		500 (3.4)	

<sup>1</sup>100–125% flow on flow table per ASTM C 230

<sup>2</sup>125–145% flow on flow table per ASTM C 230

<sup>3</sup>25 to 30 seconds through flow cone per ASTM C 939

\*Test conducted at a fluid consistency

This data was developed under controlled laboratory conditions. Expect reasonable variations

### Test Data (continued)

PROPERTY		RESULTS		TEST METHOD
<b>Ultimate tensile strength and bond stress</b>				ASTM E 488 Tests*
<b>Diameter (in)</b>	<b>Depth (in)</b>	<b>Tensile strength (lbs)</b>	<b>Bond stress (psi)</b>	
5/8	4	29,200	3,718	
3/4	5	33,200	2,815	
1	7	58,500	2,660	

\* Average of 5 tests in  $\geq 4,000$  psi (27.6 MPa) concrete, using 125 ksi threaded rod in 2" diameter, damp, core-drilled holes.

#### Notes

1. Grout was mixed to a fluid consistency.
2. Recommended design stress: 1,750 psi.
3. For more detailed information regarding anchor bolt applications, contact Technical Service.
4. Tensile tests with headed fasteners were governed by concrete failure.

#### Jobsite Testing

If strength tests must be made at the jobsite, use 2" (51 mm) metal cube molds as specified by ASTM C 942 and the ASTM C 1107 modification of ASTM C 109. DO NOT use cylinder molds. Control testing on the basis of the desired placing consistency rather than strictly on the water content.

## HOW TO APPLY

### DO NOT INSTALL THIS PRODUCT WITHOUT READING AND REFERENCING THE COMPANION MASTERFLOW 885 INSTALLATION GUIDE.

#### SURFACE PREPARATION

- 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. For freshly placed concrete, consider using Liquid Surface Etchant to achieve the required surface profile.
- 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)  $\frac{3}{8}$ " (10 mm). Verify the absence of bruising following ICRI Guideline 210.3.

#### FORMING

- Forms should be liquid tight and nonabsorbent. Seal forms with putty, sealant, caulk or polyurethane foam.
- Expansion joints may be necessary for both indoor and outdoor installation. Consult your local BASF field representative for suggestions and recommendations.

## MIXING

- Place estimated water into the mixer (use potable water only), then slowly add the dry grout while mixing. For a fluid consistency, start with 9 lbs (4 kg) or 1.1 gallons (4.2 L) per 55 lb bag.
- Water demand depends on mixing efficiency and material and ambient temperature conditions. Adjust the water to achieve the desired flow. Recommended flow is 25–30 seconds using the ASTM C 939 Flow-Cone Method.
- Mix grout between 3 and 5 minutes after all material and water is in the mixer until a homogenous consistency is achieved. Use mechanical mixer only.

## APPLICATION

- Contact your local representative for a pre-job conference to plan the installation.
- Always place grout from only one side of the equipment to prevent air or water entrapment beneath the equipment. Place Masterflow 885 in a continuous pour.
- Minimum placement thickness is 1" (25 mm). Consult your BASF representative before placing lifts more than 6" (152 mm) in depth.
- The water requirement may vary with mixing efficiency, temperature and other variables
- Should not be used as a floor topping.
- Large, exposed areas of grout should be avoided.
- Structural integrity of the grout is not affected by superficial, hairline cracks occasionally observed in shoulders, near base plate edges and around anchor bolts.
- The ambient and initial material temperature of the grout should be in the range of 45 to 90° F (7 to 32° C) for both mixing and placing. Ideally, use the amount of mixing water that is necessary to achieve a 25–30 second flow specified by ASTM C 939 (CRD C 611). For placement outside of 45 to 90° F (7 to 32° C), contact your local BASF representative.
- Surfaces may discolor in certain environments; it is not an indication of product performance.

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#### 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](http://www.master-builders-solutions.basf.us), e-mailing your request to [basfbcst@basf.com](mailto:basfbcst@basf.com) or calling 1(800)433-9517. Use only as directed.

**For medical emergencies only,  
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