

PRODUCT DATA SHEET

SikaGrout®-885 MF

(formerly MFlow 885)

LOW-DUST, HIGH-PRECISION, NON-SHRINK METALLIC AGGREGATE GROUT WITH EXTENDED WORKING TIME

PRODUCT DESCRIPTION

SikaGrout®-885 MF 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 loadbearing support, including machine bases subject to thermal movement.

USES

- 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

CHARACTERISTICS / ADVANTAGES

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
- Low-dusting for added worker comfort and safety
- 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, and effects of heating and cooling making SikaGrout®-885 MF 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
- SikaGrout®-885 MF 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

APPROVALS / STANDARDS

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

PRODUCT INFORMATION

Chemical Base	SikaGrout®-885 MF is a hydraulic cement-based metallic-aggregate grout.
Packaging	55 lb (25 kg) polyethylene-lined bags 3,300 lb (1,500 kg) bulk bags
Shelf Life	55 LB BAG: 1 year when properly stored 3,300 LB BULK BAG: 3 months properly stored
Storage Conditions	Store in unopened containers in cool, clean, dry conditions

TECHNICAL INFORMATION

Compressive Strength	Time	Plastic ¹	Consistency Flowable ²	Fluid ³	(ASTM C 942, according to ASTM C 1107)
	1 day	5,000psi (34MPa)	5,000psi (34MPa)	4,000psi (28MPa)	
	3 days	7,000psi (48MPa)	6,000psi (41MPa)	5,000psi (34MPa)	
	7 days	9,000psi (62MPa)	8,000psi (55MPa)	7,000psi (48MPa)	
	28 days	11,000psi (76MPa)	10,000psi (69MPa)	9,000psi (62MPa)	
	¹ 100–125% flow on flow table per ASTM C 230 ² 125–145% flow on flow table per ASTM C 230 ³ 25 to 30 seconds through flow cone per ASTM C 939				
Modulus of Elasticity in Compression	Time	Modulus of Elasticity			(ASTM C 469, modified)
	3 days	3.16 x 10 ⁶ psi (2.18 x 10 ⁴)MPa)			
	7 days	3.50 x 10 ⁶ psi (2.41 x 10 ⁴ MPa)			
	28 days	3.69 x 10 ⁶ psi (2.54 x 10 ⁴ MPa)			
Flexural Strength	Time	Flexural Strength			(ASTM C 78)
	3 days	880psi (6.1MPa)			
	7 days	1,050psi (7.2MPa)			
	28 days	1,150psi (7.9MPa)			
Tensile Strength	Time	Tensile			(ASTM C 190)
	3 days	300psi (2.1MPa)			
	7 days	400psi (2.8MPa)			
	28 days	500psi (3.4MPa)			
Splitting tensile strength	Time	Splitting Tensile			(ASTM C 496)
	3 days	350psi (2.4MPa)			
	7 days	490psi (3.4MPa)			
	28 days	520psi (3.6MPa)			
Elongation at Break	Ultimate Tensile Strength and Bond Stress				(ASTM E 488 Tests*)
	Diameter	Depth	Tensile strength	Bond stress	
	5/8 in	4 in	29,200 lbs	3,718 lbs	
	3/4 in	5 in	33,200 lbs	2,815 lbs	
	1 in	7 in	58,500 lbs	2,660 lbs	

* 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.

Shear Strength

Punching Shear Strength* on a 3 by 3 by 11" (76 by 76 by 279 mm) beam

Time	Punching Shear Strength	(Sika Method)
3 days	1,600 psi (11.0MPa)	
7 days	1,800 psi (12.4MPa)	
28 days	2,600 psi (17.9MPa)	

*Test conducted at a fluid consistency

Shrinkage

Volume Change

Time	% Change	% Requirement of ASTM C 1107	(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	

Coefficient of Thermal Expansion

6.5×10^{-6} in/in/° F (11.7×10^{-6} cm/cm/° C)

(ASTM C 531)

Design Considerations

Dust Reduction

SikaGrout®-885 MF vs Control
65%

(DIN55992-2)

APPLICATION INFORMATION

Coverage	One 55 lb (25 kg) bag of SikaGrout®-885 MF grout mixed with approximately 10 lbs (4.5 kg) or 1.2 gallons (4.5 L) of water yields approximately 0.43 ft³ (0.012 m³) of grout. Note: The water requirement may vary due to mixing efficiency, temperature, and other variables.																		
Product Temperature	- The ambient and initial temperature of the grout should be in the range of 45 to 90° F (7 to 32° C) for both mixing and placing. For precision grouting, store and mix grout to produce the desired mixed grout temperature. If bagged material is hot, use cold water, and if bagged material is cold, use warm water to achieve a mixed-product temperature as close to 70° F (21° C) as possible. - If temperature extremes are anticipated or special placement procedures are planned, contact your local Sika representative for assistance. - When grouting at minimum temperatures, see that the foundation, plate, and grout temperatures do not fall below 40° F (7° C) until after the final set. Protect the grout from freezing (32° F or 0° C) until it has attained a compressive strength of 3,000 psi (21 MPa) in accordance with ASTM C 109. Recommended Temperature Guidelines for Precision Grouting <table><tr><th></th><th>Minimum °F (°C)</th><th>Preferred °F (°C)</th><th>Maximum °F (°C)</th></tr><tr><td>Foundation and plates</td><td>45(7)</td><td>50–80 (10–27)</td><td>90 (32)</td></tr><tr><td>Mixing water</td><td>45(7)</td><td>50–80 (10–27)</td><td>90 (32)</td></tr><tr><td>Grout at mixed and placed temp</td><td>45(7)</td><td>50–90 (10–32)</td><td>90 (32)</td></tr></table>				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)
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Set Time	Plastic ¹	3.5 hours	(ASTM C 191)																
	Consistency Flowable ²	5 hours																	
	Fluid ³	5.5 hours																	
Final set time	Plastic ¹	4.5 hours	(ASTM C 191)																
	Consistency Flowable ²	6 hours																	
	Fluid ³	8 hours																	

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

- Steel surfaces must be free of dirt, oil, grease, or other contaminants.
- The surface to be grouted must be clean, SSD, strong, and roughened to a CSP of 5–10 following ICRI Guideline 310.2 to permit proper bond.
- 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.
- Concrete surfaces should be saturated(ponded) with clean water for 24 hours just before grouting.
- All freestanding water must be removed from the foundation and bolt holes immediately before grouting.
- Anchor bolt holes must be grouted and sufficiently set before the major portion of the grout is placed.
- Shade the foundation from sunlight 24 hours before and 24 hours after grouting.

SURFACE PREPARATION

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 headbox to enhance the grout placement.
3. Side and end forms should be a minimum of 1" (25 mm) distance horizontally from the equipment to be grouted to permit the 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. A minimum of 1" (51 mm) clearance is required where the grout will be placed.
6. Eliminate large, non-supported 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. Consult your local Sika field representative for suggestions and recommendations.

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, and 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. Place estimated water (use potable water only) into the mixer, then slowly add the grout. For a fluid consistency, start with 9 lbs (4 kg) (1.1 gal [4.2 L]) per 55 lb bag.
2. The water demand will depend on mixing efficiency, 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. Use the minimum amount of water required to achieve the necessary placement consistency.
3. Moderately sized batches of grout are best mixed in one or more clean mortar mixers. For large batches, use ready-mix trucks and 3,300 lb (1,500 kg) bags for maximum efficiency and economy.
4. Mix grout for a minimum of 5 minutes after all material and water is in the mixer. Use a mechanical mixer only.
5. Do not mix more grout than can be placed in approximately 30 minutes.
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 and remixing after it stiffens.
8. Do not add plasticizers, accelerators, retarders, or

other additives.

APPLICATION

Placement

1. Always place grout from only one side of the equipment to prevent air or water entrapment beneath the equipment. Place SikaGrout®-885 MF in a continuous pour. Discard grout that becomes unworkable. Make sure that the material fills the entire space being grouted and that it remains in contact with the plate throughout the grouting process.
2. Immediately after placement, trim the surfaces with a trowel and cover the exposed grout with clean wet rags (not burlap). Keep rags moist until the grout surface is ready for finishing or until the final set.
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. After removing the damp rags, immediately coat them with a recommended curing compound compliant with ASTM C 309 or preferably ASTM C 1315.
4. Do not vibrate grout. Use steel straps inserted under the plate to help move the grout.
5. The minimum placement thickness is 1" (25 mm). Consult your Sika representative before placing lifts more than 6" (152 mm) in depth.

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 SikaGrout®-885 MF in a continuous pour.
- The minimum placement thickness is 1" (25 mm). Consult your Sika 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.
- The 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 Sika representative.
- Surfaces may discolor in certain environments; it is not an indication of product performance.

CURING TREATMENT

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

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potential moisture loss.

MIXING

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.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs.

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