



PRODUCT DATA SHEET

King[®] MS-Cable

Shrinkage compensated grout material for anchoring applications

PRODUCT DESCRIPTION

King[®] MS-Cable is a neat, high performance, shrinkage-compensated, anchoring grout. It is an unsanded, Portland cement-based, expanding, shrinkage-compensated, anchoring grout containing silica fume and other carefully selected components. King[®] MS-Cable resists water washout, making it ideal for anchoring cables, tendons or bolts in rock or soil media.

WHERE TO USE

- For most grouted anchor requirements including, cable bolting, earth tie-backs for excavation or soil stabilization, grouting anchors in tunnel support systems, re-bar grouting and grouting soil or rock tendons for anchoring piles or foundation structures
- Infill of pipe piles
- Structural grout medium for injection-bored micropiles
- Grouting conventionnally bored micropiles

- Post-grouting of micropile installations
- Construction of grout columns around shafts of standard Helical Pier Foundation System Piles
- Grouting tight clearances, where sanded grouts would not flow or fill voids

CHARACTERISTICS / ADVANTAGES

- Superior early strength gain, allowing early tensioning of anchors
- Excellent cohesive properties
- Resistant to water wash-out and dilution by water in wet ground conditions
- Excellent pumpability
- Thixotropic properties reduce material loss in fractured ground
- Reduced bleeding
- Improved resistance to sulphate attack
- Very low permeability

PRODUCT INFORMATION

Packaging	<ul style="list-style-type: none">▪ 20 kg (44 lb) bag▪ 25 kg (55 lb) bag <small>*Custom packaging is available to suit specific project requirements</small>
Shelf Life	12 months in original, unopened packaging
Storage Conditions	Store dry, ensuring that product is not exposed to rain, condensation or high humidity
Density	1950 kg/m ³ (121 lb/ft ³) (ASTM C109)

TECHNICAL INFORMATION

Compressive Strength

	Curing temperature		(ASTM C109*)
	5 °C (41 °F)	21 °C (70 °F)	
1 day	4.5 MPa (650 psi)	28 MPa (4060 psi)	
3 days	30 MPa (4350 psi)	40 MPa (5800 psi)	
7 days	40 MPa (5800 psi)	45 MPa (6500 psi)	
28 days	55 MPa (8000 psi)	60 MPa (8700 psi)	

King® MS-Cable tested with SikaCem® accelerator

Dosage: 1 bottle (150 mL)

	Curing temperature		(ASTM C109*)
	0 °C (32 °F)	5 °C (41 °F)	
1 day	-	8 MPa (1150 psi)	
2 days	-	30 MPa (4350 psi)	
3 days	-	40 MPa (5800 psi)	
28 days	-	60 MPa (8700 psi)	

	10 °C (50 °F)	21 °C (70 °F)	(ASTM C109*)
	1 day	15 MPa (2175 psi)	
2 days	35 MPa (5075 psi)	38 MPa (5500 psi)	
3 days	42 MPa (6000 psi)	45 MPa (6525 psi)	
28 days	60 MPa (8700 psi)	60 MPa (8700 psi)	

Dosage: 2 bottles (300 mL)

	0 °C (32 °F)	5 °C (41 °F)	(ASTM C109*)
	1 day	-	
2 days	20 MPa (2900 psi)	30 MPa (4350 psi)	
3 days	25 MPa (3625 psi)	40 MPa (5800 psi)	
28 days	40 MPa (5800 psi)	60 MPa (8700 psi)	

**All moulds and mixing tools were pre-conditioned to the curing temperature, and the grout temperature was maintained at 21 °C (70 °F). Prepared test specimens were cast and then cured at the indicated test temperatures until the time of testing. Liquid/solids ratio (water + bottle Sikacem® Accelerator/King® MS-Cable) = 0.33; [8.3 L (2.2 US gal.) of liquid per 25 kg (55 lb) bag of King® MS-Cable].*

Expansion	3–6 % (volume unconfined)	(ASTM C940)
Bleeding	Bleeding Segregation	Nil Nil (ASTM C940)

APPLICATION INFORMATION

Mixing Ratio

For a 20 kg (44 lb) bag, the recommended volume of water is 5.0 L (1.3 US gal.) to 6.7 L (1.77 US gal.). Note that for a 20 kg (44 lb) bag, a lower water:material ratio (5.0 L [1.3 US gal.]) should be used to achieve pumpable consistencies while a higher water:material ratio (6.7 L [1.77 US gal.]) should be used for flowable consistencies.

For a 25 kg (55 lb) bag, the recommended volume of water is 6.25 L (1.65 US gal.) to 8.3 L (2.2 US gal.). Note that for a 25 kg (55 lb) bag, a lower water:material ratio (6.25 L [1.65 US gal.]) should be used to achieve pumpable consistencies while a higher water:material ratio (8.3 L [2.2 US gal.]) should be used for flowable consistencies.

Yield

- Approx. 0.0133 m³ (0.47 ft³) of fresh grout / 20 kg (44 lb) bag
 - Approx. 0.0167 m³ (0.59 ft³) of fresh grout / 25 kg (55 lb) bag
- *Yield in service may slightly vary according to projects conditions*

Flowability

FLOW
20–30 seconds

(ASTM C939)

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

LIMITATIONS

- Not recommended for areas subjected to extremely high vibrations.
- Adhere strictly to recommended water additions.
- Exceeding the recommended water:material ratio will result in reduced compressive strengths and inferior physical properties.
- Do not use mortar-style mixer to mix material.
- Do not use for base plates grouting.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

MIXING

Mix to the consistency required for placement. Note that King® MS-Cable's thixotropic properties makes the grout appear thick and cohesive when it is in fact very pumpable. Introduce potable water into a high shear mixer and then add powder while operating at medium speed. Increase mixer speed and continue mixing at high speed for three (3) to five (5) minutes. Decrease mixer speed to low and continue mixing while placing the grout. The time between mixing and pumping of the batch should not exceed 15 minutes.

CLEAN UP

Clean all tools and equipment after use with water. Once hardened, the product can only be removed mechanically.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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Product Data Sheet

King® MS-Cable
April 2026, Version 03.01
020201010050000035