

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. MS Cable resists water wash-out, making it ideal for anchoring cables, tendons or bolts in rock or soil media.

## FEATURES & BENEFITS

- 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
- All KING products are manufactured using ISO 9001:2015 Certified Processes

## USES

- 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 conventionally bored micropiles
- Post-grouting of micropile installations
- Construction of grout columns around shafts of standard Helical Pier Foundation System Piles

## PROCEDURES

**Mixing:** Mix MS Cable to the consistency required for placement.

**For a 20 KG (44 lb) bag, the recommended volume of water is 5.0 L (1.3 US gallons) to 6.7 L (1.77 US gallons).** For a 20 KG (44 lb) bag, a lower water:material ratio (5.0 L, 1.3 US gallons) should be used for pumpable consistencies while a higher water:material ratio (6.7 L, 1.77 US gallons) 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 gallons) to 8.3 L (2.2 US gallons).** For a 25 KG (55 lb) bag, a lower water:material ratio 6.25 L (1.65 US gallons) should be used for pumpable consistencies while a higher water:material ratio 8.3 L (2.2 US gallons) should be used for flowable consistencies.

MS Cable's thixotropic properties make the grout appear thick and cohesive when it is in fact very pumpable. Introduce potable water into a high shear mixer and then add MS Cable while operating at medium speed. Increase mixer speed and continue mixing at high speed for 3 to 5 minutes. Mortar style mixers are not recommended for this purpose. 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.

## TECHNICAL DATA

The following data is representative of typical values achievable under laboratory conditions. Results in the field may vary.

### MASS DENSITY

**ASTM C 109** 1950 kg/m<sup>3</sup> (121 lb/ft<sup>3</sup>)

### FLOW

**ASTM C 939** 20-30 seconds

### COMPRESSIVE STRENGTH

#### ASTM C 109

**GROUT TEMPERATURE OF 21 °C (70 °F)**

#### CURING TEMPERATURE

	5 °C (40 °F)	21 °C (70 °F)
<b>1 Day</b>	4.5 MPa (650 psi)	28 MPa (4060 psi)
<b>3 Day</b>	30 MPa (4350 psi)	40 MPa (5800 psi)
<b>7 Day</b>	40 MPa (5800 psi)	45 MPa (6525 psi)
<b>28 Day</b>	55 MPa (8000 psi)	60 MPa (8700 psi)

### COMPRESSIVE STRENGTH

**(MS CABLE TESTED WITH SIKACEM® ACCELERATOR)\***

#### ASTM C 109

**GROUT TEMPERATURE OF 21 °C (70 °F)**

**DOSAGE** 1 bottle (150 mL)

#### CURING TEMPERATURE

	0 °C (32 °F)	5 °C (32 °F)
<b>1 Day</b>	-	8 MPa (1150 psi)
<b>2 Day</b>	-	30 MPa (4350 psi)
<b>3 Day</b>	-	40 MPa (5800 psi)
<b>28 Day</b>	-	60 MPa (8700 psi)

**10 °C (50 °F)**

	10 °C (50 °F)	21 °C (70 °F)
<b>1 Day</b>	15 MPa (2175 psi)	30 MPa (4350 psi)
<b>2 Day</b>	35 MPa (5075 psi)	38 MPa (5500 psi)
<b>3 Day</b>	42 MPa (6000 psi)	45 MPa (6525 psi)
<b>28 Day</b>	60 MPa (8700 psi)	60 MPa (8700 psi)

**DOSAGE** 2 bottles (300 mL)

#### CURING TEMPERATURE

	0 °C (32 °F)	5 °C (40 °F)
<b>1 Day</b>	-	15 MPa (2175 psi)
<b>2 Day</b>	20 MPa (2900 psi)	30 MPa (4350 psi)
<b>3 Day</b>	25 MPa (3625 psi)	40 MPa (5800 psi)
<b>28 Day</b>	40 MPa (5800 psi)	60 MPa (8700 psi)

### EXPANSION

**ASTM C 940** 3-6% (Volume unconfined)

### BLEEDING

**ASTM C 940** Nil

### SEGREGATION

Nil

\*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/MS Cable)=0.33; [8.3 L (2.2 US gallons) of liquid per 25 kg (55 lb) bag of MS Cable].

## OPTIMUM PERFORMANCE

Not recommended for areas subjected to extremely high vibrations. Adhere to recommended water additions. Exceeding the recommended water:material ratio will result in reduced compressive strengths and inferior physical properties.

## YIELD

- 20 KG (44 lb) bag yields approximately 0.0133 m<sup>3</sup> (0.47 ft<sup>3</sup>) of fresh grout
- 25 KG (55 lb) bag yields approximately 0.0167 m<sup>3</sup> (0.59 ft<sup>3</sup>) of fresh grout

## PACKAGING

MS Cable is packaged in 20 KG (44 lb) and 25 KG (55 lb) triple-lined bags and polywrapped on wooden pallets. All KING products can be custom packaged to suit specific job requirements.

## STORAGE AND SHELF LIFE

Material should be stored in a dry, covered area, protected from the elements. Unopened pails have a shelf life of 12 months.

## SAFETY PROCEDURES

MS Cable contains Portland cement. Normal safety-wear such as rubber gloves, dust mask and safety glasses used to handle conventional cement based products should be worn. Safety Data Sheets are available upon request.

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**Warranty:** This product is designed to meet the performance specifications outlined in this product data sheet. If the product is used in conditions for which it was not intended, or applied in a manner contrary to the written recommendations contained in the product data sheet, the product may not reach such performance specifications. The foregoing is in lieu of any other warranties, representations or conditions, expressed or implied, including, but not limited to, implied warranties or conditions of merchantable quality or fitness for particular purposes, and those arising by statute or otherwise in law or from a course of dealing or usage of trade. [REV.0010\_2459121.5]