

MS WATER CUT-OFF GROUT

Neat, high performance, cementitious penetrating water cut-off grout.

MS Water Cut-Off Grout is an unsanded, extremely fine, cementitious penetrating grout. It is ideal for stabilizing soil or rock prior to excavation, and controlling water ingress in mines, tunnels, shafts or other underground openings.

FEATURES & BENEFITS

- Extremely fine particle (Blaine fineness of 2050 cm²/g (1000 ft²/lb.)) size and a uniform size distribution allows grout to penetrate into soils and rock not penetrable by normal cementitious grouts.
- Uniform particle distribution results in a homogeneous grout that exhibits negligible separation even at high water contents.
- Evenly distributed particle size reduces bridging and plugging within the grouted mass yielding a higher quality grout and greater void reduction at lower pumping pressures.
- Requires only the addition of potable water. It does not require the addition of caustic or difficult to handle admixtures.
- Can be mixed to a wide range of consistencies and pumped using standard cementitious grouting equipment.
- Exhibits excellent resistance to water washout when used at lower water/material ratios.
- Excellent cohesive properties.
- Reduced bleeding.
- Very low permeability.
- All King products are manufactured using ISO 9001:2000 Certified Processes.

USES

- Pre-grouting ahead of adit or shaft development to stabilize rock or soil mass prior to excavation.
- Pumping into rock fissures, cracks, faults and water bearing soils to control water ingress in mines, tunnels, shafts, adits, sewers and various open excavations.
- Useful in any application where flowing water must be controlled.
- Densify soil or rock masses to reduce air permeability.
- Hazardous waste containment in landfill, mine tailings, and other similar applications.
- Consolidation grouting.
- Curtain grouting.

PROCEDURES

Mixing:

A high-shear or colloidal mixer equipped with a calibrated measuring device for determining the quantity of water shall be used. Mortar style mixers are not recommended for this purpose. Introduce potable water (see below) into mixer and then add MS Water Cut-Off Grout while operating at medium speed. **The maximum recommended volume of water for a pumpable consistency is 7.5 litres (1.98 US gallons) per 15 kg. (33 lb.) bag.** Mix at high speed for a minimum of one minute. The time between mixing and pumping of the batch should not exceed one hour.

Pumping:

MS Water Cut-Off Grout can be pumped at water/material ratios as low as 0.45 with standard piston, diaphragm, plunger or progressive cavity type cementitious grout pumps. A hose diameter of 25 mm (1 inch) or more is recommended although for short pumping distances and higher water/material ratios, 19 mm (¾ inch) hose has been successfully used.

TECHNICAL DATA

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

	WATER / MATERIALS RATIO (W/M)		
	0.5	1.0	2.0
VOLUME OF WATER PER 15 KG (33 LB.)			
	7.5 litres (1.98 US gallons)	15 litres (3.96 US gallons)	30 litres (7.93 US gallons)
WET DENSITY			
ASTM C 138	1700 kg/m ³ 106 lb./ft ³	1500 kg/m ³ 94 lb./ft ³	1275 kg/m ³ 80 lb./ft ³
FLOW			
ASTM C 109	137 %	11-13 sec.	9 sec.
ASTM C 942	(Flow Table)	(Flow Cone)	(Flow Cone)
COMPRESSIVE STRENGTH			
ASTM C 109			
7 Day	25 MPa (3625 psi)	4 MPa (580 psi)	
28 Day	35 MPa (5070 psi)	12 MPa (1740 psi)	
SETTING TIME			
ASTM C 266 (MODIFIED)			
Initial	4 hours	18 hours	20 hours
Final	8 hours	26 hours	30 hours
BLEEDING			
ASTM C 940-81	Nil	Nil	Slight

OPTIMUM PERFORMANCE

Recommended water/material ratio will vary depending on application. Contact KING Technical Support Staff for further assistance.

YIELD

15 kg (33 lb.)	W/M = 0.5	W/M = 1.0	W/M = 2.0
	0.013 m ³ (0.46 ft ³)	0.020 m ³ (0.70 ft ³)	0.035 m ³ (1.24 ft ³)

MS WATER CUT-OFF GROUT**PACKAGING**

MS Water Cut-Off Grout is packaged in 15 kg (33 lb.) triple lined bags and poly wrapped on wooden pallets.

STORAGE AND SHELF LIFE

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

SAFETY PROCEDURES

MS Water Cut-Off Grout 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. Material Safety Data Sheets are available upon request.

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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.

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KING PACKAGED MATERIALS COMPANY

Burlington Office
3385 Harvester Rd.
Burlington, ON
L7N 3N2
Phone: (905) 639-2993
Fax: (905) 333-3730

Blainville Office
650 Boul. Labelle
Blainville, QC
J7C 2J2
Phone: (450) 430-4104
Fax: (450) 430-6855

Brantford Office
541 Oak Park Rd.
Brantford, ON
N3T 5L8
Phone: (519) 756-6177
Fax: (519) 756-7490

Sudbury Office
644 Simmons Rd.
Dowling, ON
P0M 1R0
Phone: (705) 855-1155
Fax: (705) 855-1122