

## SUPER-TOP

Super-Top is a high performance, one component, rapid setting, polymer modified, synthetic fibre reinforced, repair mortar for overhead, vertical and horizontal concrete repair applications. It is a shrinkage-compensated formulation containing micro-synthetic fibers. It is ideal for any structural or cosmetic concrete repair.

### FEATURES & BENEFITS

- Light weight for high build in vertical or overhead applications.
- Shrinkage-compensated to provide structural repair of holes or cracks.
- Contains micro-synthetic fibers to reduce the possibility of plastic shrinkage cracks.
- Excellent bond to parent concrete without requiring a bonding agent.
- Excellent resistance to freeze/thaw cycling.
- Rapid-setting for minimal turnaround time.
- Moist cure for only 24 hours.
- Membrane application possible in only 48 hours after placement.\*
- All KING products are manufactured using ISO 9001:2008 Certified Processes.

\* Moist cure for 24 hours, then allow the product to dry for 24 hours Follow the recommendations of the membrane manufacturer. Always test the moisture content before applying a membrane.

### USES

- Partial depth rehabilitation of concrete beams, columns, and/or soffits in bridges, parking garages, balconies or other concrete structures.
- For horizontal repair applications exceeding 25 mm (1 inch) use LM-S6 Concrete, and for horizontal repair applications exceeding 50 mm (2 inches) use LM-S10 Concrete.
- For vertical/overhead repair applications exceeding 50 mm (2 inches) use MS-S10 Self-Consolidating Concrete or RS-S10 Self-Consolidating Concrete.
- Contact KING Technical Support Staff for recommendations or information on uses or conditions not listed.

### PROCEDURES

#### Surface Preparation:

All surfaces to be in contact with Super-Top must be free from dust, oil, grease or any other foreign substances that may interfere with the bond of the material. Remove all delaminated or unsound concrete, providing a roughened surface. The perimeter of the repair area should be saw-cut a minimum of 6 mm (1/4 inch). Clean the area to be repaired with potable water, leaving the concrete saturated but free of standing water (SSD).

#### Mixing:

Place 75% of required potable water into mixer and slowly introduce entire bag of Super-Top. Add balance of required water slowly while mixer is running, not exceeding maximum recommended volume of water. **Recommended volume of water is 3.5 to 3.75 L (0.9 to 1.0 US gallon) per 25 kg (55 lb.) bag.** Continue mixing for a minimum of 3 minutes until material has obtained a consistent homogeneous mix.

Super-Top sets rapidly. Mix only an amount that can be placed and leveled within 15-20 minutes. If necessary, reduce the batch size while maintaining the same water:materials ratio. Do not add additional water or re-temper after initial mixing procedure. For vertical/overhead applications, adjust consistency by using less water to make a stiffer mix.

#### Placing:

Mix and substrate temperatures should be maintained between 5 °C and 30 °C (40 °F and 86 °F). Place Super-Top in lifts of not more than 50 mm (2 inches). Consolidate by forcing against the edge of the repair area and continue placing material towards the centre. The top surface of each lift must have a 3 mm – 6 mm (1/8 inch – 1/4 inch) raked profile. Keep surface of each lift damp with fog spray, sprinkler hose or brush. Apply next layer within 15-20 minutes. When design depth is obtained, finish final placement to match surrounding surface texture.

#### Curing:

Curing is essential to optimize the physical properties of Super-Top and minimize plastic shrinkage. Super-Top should be cured immediately after material has reached initial set in accordance with ACI 308 "Guide to Curing Concrete". Continuously moist cure for a period of 24 hours. Alternatively, apply a water-based curing compound that complies with ASTM C 309. Curing is particularly critical in rapid moisture loss conditions such as high temperatures, high winds and low humidity.

### TECHNICAL DATA

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

#### WORKING TIME\*

20 minutes

#### SET TIME\*

ASTM C 191	(METHOD A)
Initial	25 minutes
Final	45 minutes

#### COMPRESSIVE STRENGTH

##### ASTM C 109

1 Day	20 MPa (2900 psi)
3 Day	25 MPa (3625 psi)
7 Day	30 MPa (4350 psi)
28 Day	40 MPa (5800 psi)

#### FLEXURAL STRENGTH

##### ASTM C 348

7 Day	5.0 MPa (725 psi)
28 Day	5.7 MPa (825 psi)

#### MODULUS OF ELASTICITY

##### ASTM C 469

28 Day	12.5 GPa
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## SUPER-TOP

<b>POISSON'S RATIO</b>	
ASTM C 469 28 Day	0.23
<b>UNIAXIAL DRYING SHRINKAGE</b>	
ASTM C 157 28 Day	<b>50% HUMIDITY CURE</b> < -0.150%
ASTM C 157 28 Day	<b>100% HUMIDITY CURE</b> < +0.150%
<b>FREEZE-THAW RESISTANCE</b>	
ASTM C 666	103.2% (Excellent durability factor)
<b>SALT-SCALING RESISTANCE</b>	
ASTM C 672 50 Cycles	0.25 kg/m <sup>2</sup> (0.05 lb./ft <sup>2</sup> )

\* The following data was obtained under laboratory conditions with material and ambient temperatures of 21°C (70°F).

### YIELD

25 kg (55 lb.) bag contains approximately 0.014 m<sup>3</sup> (0.5 ft<sup>3</sup>).

### PACKAGING

Super-Top is normally packaged in 25 kg (55lb.) 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 bags have a shelf life of 6 months.

### SAFETY PROCEDURES

Super-Top contains hydraulic cements. 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.

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.0001\_11/10/2014]

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