

## DURO-CRETE CT

High performance, pre-packaged, concrete repair mortar for cold temperature applications. Duro-Crete CT is a rapid setting, cementitious repair mortar containing hydraulic cements, well graded, natural, fine aggregate and other carefully selected components for temperatures above 0°C (32°F).

### FEATURES & BENEFITS

- Rapid setting even in cold temperatures.
- Improved early age strength development required for cold temperature applications.
- Excellent resistance to freeze-thaw cycling.
- All KING products are manufactured using ISO 9001:2008 Certified Processes.

### USES

Partial depth rehabilitation of concrete beams, columns, and/or soffits in bridges, parking garages, balconies or other concrete structures.

### PROCEDURES

#### Surface Preparation:

All surfaces to be in contact with Duro-Crete CT 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 sawcut a minimum of 6 mm (¼ inch). To avoid freezing of the interface between the concrete repair and the parent concrete, do not pre-wet the receiving surface. Pneumatically remove any free standing water or other fine particles that may interfere with the bond between the Duro-Crete CT and the substrate. Place Duro-Crete CT at a minimum thickness of 6 mm (¼ inch) and a maximum thickness of 38 mm (1½ inches).

#### Mixing:

Place 75% of required potable water into mixer and slowly introduce entire bag of Duro-Crete CT. Add balance of required water slowly while mixer is running, not exceeding maximum recommended volume of water. **Maximum recommended volume of water is 3.0 litres (0.80 US gallon) per 25 kg (55 lb.) bag.** Continue mixing until material has obtained a consistent homogeneous mix to a maximum of 1 minute.

Material has a very short working time. Do not mix more material than can be placed within 5 minutes.

#### Placing:

Mix and substrate temperatures should be maintained above 0°C (32°F). Do not place Duro-Crete CT when ambient temperature is below or is expected to fall below 0°C (32°F) within 5 hours following the application of Duro-Crete CT.

#### Placing (for slab repairs):

Place material uniformly and consolidate by forcing against the edge of the repair area and continue placing material towards the centre.

### Curing:

A resin based liquid membrane curing compound approved for use in cold weather conditions that complies with ASTM C 309 should be applied immediately after repair mortar reaches final set.

### TECHNICAL DATA

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

#### FLOW TABLE

ASTM C 1437 > 100%

#### WORKING TIME\*

5 minutes

#### SET TIME

ASTM C 191  
METHOD A

Initial 5 minutes

Final 7 minutes

#### WET DENSITY

ASTM C 138 2175 kg/m<sup>3</sup> (136 lb./ft<sup>3</sup>)

#### COMPRESSIVE STRENGTH

ASTM C 109

4 Hours 15 MPa (2175 psi)

8 Hours 15 MPa (2175 psi)

1 Day 20 MPa (2900 psi)

3 Day 25 MPa (3625 psi)

7 Day 25 MPa (3625 psi)

28 Day 30 MPa (4350 psi)

#### FLEXURAL STRENGTH

ASTM C 348

28 Day 6 MPa (875 psi)

#### MODULUS OF ELASTICITY

ASTM C 469

22.9 GPa (3.3 x 10<sup>6</sup> psi)

#### SPLITTING TENSILE STRENGTH

ASTN C 496

3 MPa (425 psi)

#### ABSORPTION

ASTM C 642

11.3%

#### FREEZE-THAW RESISTANCE

ASTM C 666

100%

(Excellent durability factor)

## DURO-CRETE CT

### OPTIMUM PERFORMANCE

• For repair applications exceeding 38 mm (1½ inches) use FA-S6 Concrete, FA-S10 Concrete, MS-S6 Concrete, MS-S10 Concrete, MS-S6 Self-Consolidating Concrete or MS-S10 Self-Consolidating Concrete depending on application.

### YIELD

25 kg (55 lb.) bag contains approximately 0.012 m<sup>3</sup> (0.42 ft<sup>3</sup>).

### PACKAGING

Duro-Crete CT is normally packaged in 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 bags have a shelf life of 12 months.

### SAFETY PROCEDURES

Duro-Crete CT 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.

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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.  
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