



# Con-Spec Industries Ltd.

## RAPID REPAIR MORTAR

### DESCRIPTION:

Rapid Repair Mortar is a unique preblended cementitious patching and repair material requiring only potable water for mixing. **Rapid Repair Mortar can be used for patching 1cm (1/4") to 7 cm (3") thick in one application.** It can achieve initial set in 20 minutes and be opened to traffic within three hours at 24°C(75°F). Rapid Repair Mortar develops high strengths, a tenacious bond, excellent resistance to freeze thaw cycles & weathering, and exhibits excellent sulphate resistance. Rapid Repair Mortar contains a migrating corrosion inhibitor that protects reinforcing steel from corrosion induced by carbonation, chloride and atmospheric attack.

### USES:

Rapid Repair Mortar is well suited for repair and patching of floors prior to coating, filling small holes, leveling of floors, structural repair of pavement, masonry, loading docks, warehouse and freezer floors, sewers, tunnels and all horizontal or vertical, interior or exterior, above or below grade applications.

### CHARACTERISTICS:

Rapid Repair Mortar is a very fast and versatile patching material that can be modified with various ingredients to alter its characteristics. Addition of super fibres will improve the patch flexibility, and early curing performance. The addition of latex modifications will increase bond strength, flexibility and reduce permeability. Retarder and accelerator are available to control setting characteristics in hot or cold conditions.

Rapid Repair Mortar is suitable for freezer applications and can be used to temperatures of -5°C (23°F). Thickness of application is unlimited with the use of pea gravel see limitations for deep patching.

### LIMITATIONS:

Applications over 7 cm (3") in thickness require the addition of 1 cm (3/8") stone to a maximum of 9 kg (20 lbs) by weight per 25 kg (55 lb) bag. Temperatures below 0°C (32°F) will require the use of accelerator and/or the use of heated water.

### COMPOSITION:

Rapid Repair Mortar contains a proprietary cement formulation and specially selected blended aggregates and admixtures. No chlorides are used in the Rapid Repair products.

### COVERAGE:

Rapid Repair Mortar is packaged in 25 kg. (55 lb) bags and will yield approximately 0.5 cubic feet or 0.014 cubic meters per bag. Rapid Repair Mortar with 9 kg pea gravel will yeild 0.6 cubic feet or 0.017 cubic meters.

### APPROVALS AND TESTS:

- ASTM C157 Shrinkage ~ 0.0
- ASTM C928 Very Rapid Hardening Materials for Concrete Repair
- ASTM C666 Freeze Thaw Resistance:
  - 1000 cycles: weight loss 1.07%
  - Dynamic Modulus 91%
- Sulphate Resistance: Better than type V Portland Cement
- Contains less than 2% C<sub>3</sub>A.

### PROPERTIES: (@20°C)

(@3.5L/25Kg Bag)

#### Compressive Strength (ASTM C39 / C109)

3 hour Mpa (psi)	27	(3,900)
24 hour Mpa (psi)	40	(5,800)
7 Days Mpa (psi)	50	(7,250)
28 Days Mpa (psi)	56	(8,150)

#### Bond Strength (ASTM C882)

24 hours Mpa (psi)	14	(2,000)
28 days Mpa (psi)	18	(2,600)

#### Rapid Chloride Permeability (ASTM C-1202)

28 days Coulombs	983	(Very Low)
with Latex Bonding Admix (1:1 water)	354	(Very Low)

### SURFACE PREPARATION:

Surface must be structurally sound, clean, free of loose or deteriorated concrete, dust, dirt, and other contaminants. Clean and prime exposed steel and reinforcing. When substrate is not absorptive, abrade as necessary to ensure proper bonding. When temperature is above 3°C (37°F), prewet the prepared area with potable water to achieve a saturated surface dry condition before application. Absorb excess water and puddles to prevent dilution of the patching material.

### MIXING INSTRUCTIONS:

Rapid Repair Mortar will require approximately 3.5 litres of potable water per 25 kg. bag, to achieve the proper mix consistency. Add the Rapid Repair Mortar to the water and thoroughly mix to a stiff, no slump, putty-like consistency, mixing 3 minutes minimum but no more than 5 minutes in total.

Seller warrants that the product described on the face hereof has been manufactured of selected raw materials by skilled technicians. Neither seller nor manufacturer shall be responsible for any claims resulting from the failure to utilize the product in the manner in which it was intended and in accordance with instructions provided for use of product. The only obligation of either the seller or manufacturer shall be to replace any quantity of this product which proved to be defective. Neither seller nor manufacture assumes any liability, loss, or damage resulting from use of this product.

To fill patches 7 cm (3") deep or greater, add clean, dry 1 cm (3/8") size pea rock or chip stone to the Rapid Repair Mortar. The mix ratio must not exceed 9 kg. (20 lbs) of rock to each 25kg. bag of Rapid Repair Mortar.

Mixing procedure: 1) Start mixer, 2) load water, 3) load rock, and 4) load the Rapid Repair Mortar.

#### **WORKING CHARACTERISTICS:**

Rapid Repair Mortar has a quick 20 minute initial set, and can be opened to traffic within three hours at 24°C (75°F). The mixed material trowels easily and has an easily workable consistency at all water contents. Due to the short working time of Rapid Repair Mortar it is important to organize the placement operation within this time limitation. After setting, the Rapid Repair Mortar will gain strength quickly and finishing operations may be difficult.

The working time may be extended by using cold materials and/or retarder. In cold weather, warm materials and/or accelerator may be used to hasten the set and strength development.

#### **APPLICATION TECHNIQUES:**

To ensure complete bond with the entire surface, force the Rapid Repair Mortar firmly into the predampened area by hand or with a trowel. Apply sufficient material to fill all holes and voids, and then trowel to a smooth finish. On large areas use a screed to obtain a uniform level before trowelling. It may be applied up to 7 cm (3") in one application.

For thin patching under 1cm (3/8") modification with an integral bonding additive according to manufacturer's recommendation is highly recommended.

For cold weather installation, Rapid Repair Mortar will achieve initial set faster than water will freeze. When temperature is 3°C (37°F) or below, do not prewet area to be patched. Use heat to eliminate frost in the substrate, but do not heat surface above 21°C (70°F). Use warm water for mixing, as cold water extends the set time. Do not use heat after the patching material has been installed. For additional cold weather information, contact your sales representative.

#### **CURING TECHNIQUES:**

**Rapid Repair Mortar MUST be cured using water for first hour.** Wet curing of all patches and exposed grout areas with saturated burlap or fine water mist is highly recommended. When Rapid Repair Mortar is applied in areas exposed to wind and/or direct sunlight the saturated burlap should be covered with polyethylene sheet. The saturated burlap can be applied as soon as the product has set firm and surface cannot be marred. **Do not wet cure below 3°C (37°F).**

#### **SET CONTROL:**

One may also use control retarder to lengthen the setting time. It is available in bulk lots and packets. The dry Set Control powder should be mixed into the mixing water first. **One packet of Set Control will extend the setting time of a bag of Rapid Repair Mortar for approximately 15 to 30 minutes at normal temperatures 24°C (75°F).**

Set Control retarder acts as a water-reducing agent and fluidity is improved. Strengths are improved by about 5% when Set Control retarder is used.

In cold weather for freezer floor repairs, it may be desirable to use accelerator which should be mixed with the mixing water. A packet of accelerator dry powder, when mixed with Rapid Repair Mortar at 3°C (37°F) will cause the mix to harden in about 15 to 30 minutes.

**WHEN WORKING IN EITHER HOT OR COLD WEATHER, TRIAL BATCHES SHOULD BE MADE TO FINE TUNE THE EXACT HARDENING TIME DESIRED.**

#### **SUPER FIBERS:**

Superfiber reinforcement is used to make Rapid Repair Products even stronger while reducing plastic shrinkage cracking.

Superfibers are inert polypropylene fibers which are non-corrosive and alkali resistant. They are designed to reinforce Rapid Repair products. A 3 ounce packet of Superfibers will reinforce a bag of Rapid Repair Mortar. A 1 pound bag will reinforce 1 cubic yard of material.

Superfibers should be added to the mixing water and thoroughly mixed before adding the Rapid Repair to the mixing water. If possible, continue to mix the water-fiber mix while slowly adding the dry mix to the water-fiber mixture. This will maximize the distribution of the fibers in the mix. All other standard procedures and practices for the use of grout or concrete should be followed. Fibers may stick up in the finished top surface and will wear off with time.

#### **CLEAN UP:**

Clean application tools and mixing equipment with water immediately following use.

#### **SAFETY PRECAUTIONS:**

Product contains cement and is alkaline on contact with water. Wear dust, skin, and eye protection. Irritating to eyes and skin. Avoid splashing into eyes or contact with skin. In case of eye contact, flood eyes repeatedly with water and call a physician immediately. **DO NOT RUB EYES!** Wash hands thoroughly with soap and clean water after handling. Do not take internally. Keep out of reach of children. Consult Material Safety Data Sheet for further information.

