

Concrete Repair

Section 03203 or 03 01 30.71
Vertical and Overhead

CONPRO SET

PART I: GENERAL

1.01 DESCRIPTION

Provide labor, materials, equipment and supervision necessary to complete the application of repair mortar to vertical and overhead concrete surfaces.

1.02 QUALITY ASSURANCE

Products shall be installed by a trained applicator with a minimum of five years experience and meet the requirements of the specifier.

1.03 SUBMITTALS

- A. Manufacturer's current product data bulletin.
- B. The trained applicator shall prepare a test panel of the repair installed on the actual building as a submittal for approval of proper application and adhesion.
- C. The trained applicator shall submit to the specifier a list of five projects that he has completed within the last five years, exhibiting the applicator's skills. The list shall include project name, location, and description of work and completion date.

1.04 PRODUCT DELIVERY, STORAGE & HANDLING

- A. Deliver all products and accessories in original labeled, sealed, and undamaged containers or bundles.
- B. Store all products in accordance with manufacturer's printed instructions.
- C. Handle all products in accordance with manufacturer's printed instructions.

1.05 JOB CONDITIONS

All products shall be applied at substrate and ambient temperatures of 40°F and above. A minimum temperature of 40°F shall be maintained 24 hours after completion of work. Protect products from weather and other damage for a period of 24 hours after installation. Do not apply products to frozen surfaces.

1.06 COORDINATION & SCHEDULING

The work requires close coordination with related sections and trades.

PART II: PRODUCTS

2.01 MANUFACTURERS

The following manufacturers are approved for the project.

Conproco Corporation

2.02 MATERIALS

Conpro Set: Trowel applied, single component, polymer modified cementitious repair mortar with ECB-Tech corrosion protection.

2.03 PERFORMANCE CHARACTERISTICS

General Physical Properties: The products shall meet or exceed the following performance standards:

Physical state and appearance		Fine, gray powder			
Base		Portland cement			
pH	Wet mix	>12			
Water/cement ratio		0.43			
Density	Wet mix	130 lbs./ft. ³			
Durometer hardness	ASTM D2240	80 - 85%			
Percent air	Wet mix	5.3%			
Resistance to deicing chemicals under freeze/thaw	ASTM C672	Passed 50 cycles – visual rating 0			
Length change	ASTM C157	500 µstrains @ 28 days			
Modulus of elasticity	ASTM C469	2.7 x 10 ⁶			
Extended*		3.2 x 10 ⁶			
Slant shear bond strength - latex	ASTM C1042	1605 psi – 14 days			
			1 Day	7 Days	14 Days
Compressive strength – psi	ASTM C109			3210	6500
Flexural strength – psi	ASTM C348		590	845	880
Tensile strength – psi	ASTM C307		360	550	600
Tensile bond strength – psi	ASTM C932			210	250
Splitting tensile strength – cylinders – psi	ASTM C496				400
					660

*Extend with 30 lbs. of 3/8 inch aggregate per 50 lbs. of material.

PART III: EXECUTION

3.01 GENERAL

- A. Installation shall be performed strictly in accordance with manufacturer's current product data bulletin.
- B. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- C. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing, handling, and application of materials.

3.02 SURFACE PREPARATION

- A. Remove loose and deteriorated material, laitance, dirt, dust, oil and any surface contaminants that will inhibit proper bond.
- B. Saw cut edges with a diamond blade at a 90° angle to eliminate feather edging. Avoid polishing the edges as this will inhibit bond.
- C. Avoid bruising or micro cracking during surface preparation. Refer to ICRI Surface Preparation Guide 03732.
- D. Repair zone must be a minimum of 1/4 inch deep, of simple geometry, with no complex edge conditions.
- E. Avoid long narrow repairs; these have a greater tendency to crack.

- F. Apply Conpro Start where a consolidant is of benefit (soft, powdery surfaces).
- G. Saturate substrate with clean water, (saturated surface dry/SSD), with no standing water during Priming or Application.
- H. Remove concrete from corroded steel and several inches beyond to expose non-corroded steel.
- I. Provide a 3/4-inch clearance between the concrete and steel.
- J. Damaged reinforcing steel should be inspected by a qualified engineer and appropriate action taken.

3.03 PRIMING

- A. Concrete:
 - 1. Prime the prepared substrate including all edges with a slurry coat of the repair mortar. Work the slurry into the substrate to ensure intimate contact and establish bond. The repair material must be applied while slurry is wet. If the slurry dries, remove and recoat.
 - 2. Alternatively, use Conpro Primer or ECB as a bonding primer. Refer to the individual product technical data bulletin for information.
- B. Reinforcing Steel:
 - 1. Remove all scaling rust from reinforcing steel.
 - 2. Apply ECB anti-corrosion coating.

3.04 MIXING

- A. Mechanically mix using a low speed drill (400 - 600 rpm) and mixing paddle or mortar mixer.
- B. Pour 3-1/2 quarts of potable water into a clean mixing vessel and slowly add all 50 lbs. of material.
- C. Maintain the same water to Conpro Set ratio when mixing less than full 50 lbs. units.
- D. Mix continuously for 3 minutes to a uniform, lump-free, stiff mortar consistency.
- E. Add up to 1 pint of additional water if needed.
- F. Allow to "breathe" for 1 minute and remix for 1 minute. This will improve workability and open time.

3.05 APPLICATION

- A. At the time of application, surfaces should be saturated surface dry (SSD) but hold no standing water.
- B. Follow instructions for Priming.
- C. Force the material against the edges of the repair, working toward the center.
- D. Material may be applied in multiple lifts of not less than 3/8 inch and no greater than 2 inches.
- E. Consolidate each lift and allow to stiffen to thumb-print hard before continuing.
- F. Scratch (cross-hatch) each lift to prepare surface for subsequent lift.
- G. Over-build final lift by 1/4 inch and allow to take initial set.

- H. Shave to final form with trowel edge up to 2 hours after application.
- I. Finish with a sponge float or trowel.
- J. Do not overwork the finish.
- K. For applications over 2 inches add a maximum of 30 lbs. of 3/8 inch aggregate per 50 lbs. bag. Aggregate must be non-reactive, low absorption, graded and high density.

3.06 CURING

- A. Dampen the repair with a fine mist of water for 24 hours or moist cure with wet burlap and polyethylene. Alternatively, apply Conpro C309 Cure & Seal.
- B. Protect repair from direct sunlight, wind, rain and frost during curing period.

3.07 JOB SITE CLEANUP

- A. Material left over at the job site by the approved applicator shall be removed.
- B. Clean tools and equipment with water immediately after use.
- C. Cured material must be removed mechanically.

*****END OF SECTION*****



17 PRODUCTION DRIVE, DOVER, NEW HAMPSHIRE 03820
TELEPHONE 800.258.3500 FAX 603.743.5744 WEB ADDRESS www.conproco.com