

DESCRIPTION

Tstrata IRC™ is a specially formulated, one part microsilica modified concrete restoration material containing an integral corrosion inhibitor designed for restoration of a wide variety of concrete structures while reducing shrinkage. It is a premixed, dry packaged concrete material that contains pea gravel and is suitable for interior and exterior installation. Requiring only the addition of water, Tstrata IRC™ is a rapid curing, high strength material with an extended working time for ease of placement. It is handled like ordinary high slump concrete and can be used in placements from 1 inch (25 mm) to full depth.

PRIMARY APPLICATIONS

- Columns and beams
- Slabs
- Coker octagons
- Coker pit repairs
- Containment areas
- Pump foundations and equipment bases
- Walls
- Precast Concrete elements

FEATURES/BENEFITS

- Microsilica modified for high strength/low permeability
- For interior or exterior use
- Contains an integral corrosion inhibitor
- Premixed with pea gravel, ready-to-use
- Extended working time
- Low Shrinkage characteristics

TECHNICAL INFORMATION

Typical Engineering Data based on testing @ 73°F (23°C) using 0.5gal (4.17lbs) water per 50lb bag

HARDENED CONCRETE PROPERTIES

Compressive Strength

ASTM C39, 3"x6" cyl. @ 0.5gal/50lb. bag.

1 day.....	4,000 psi (28 MPa)*
7 days.....	7,000 psi (48 MPa)
28 days.....	8,500 psi (58 MPa)

Hours	psi @ 50°F	psi @ 70°F	psi @ 90°F
8	0	0	1500
12	0	**	3725
16	**	2350	4150
20	1100	3450	4750
24	2000	4000	5000

** - Exhibits Initial Set Characteristics

Flexural Strength ASTM C78

7 days.....	1,000 psi (6.9 MPa)
28 days.....	1,250 psi (8.6 MPa)

Freeze/Thaw Resistance ASTM C666 Procedure A

300 Cycles.....	>95% relative dynamic
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MODULUS OF ELASTICITY

Resistivity FM 5-578.....82,000 Ω-cm @ 28 Days

Rapid Chloride Permeability ASTM C1202

28 days.....< 900 coulombs

Drying Shrinkage ASTM C157 Modified

Length Change.....0.033% @ 28 Days
(Air Storage)

FRESH CONCRETE PROPERTIES

Working Time.....2 hrs 30 min*

Slump ASTM C143*

Initial slump.....8-11" (200 mm - 275 mm)

Set Time ASTM C403

Initial.....Approx. 9Hrs*
Final.....Approx. 10Hrs*

Unit Weight ASTM C138.....146 lb/ft³ (2340 kg/m³)

* Temperature will greatly affect these results in the field

Tstrata IRC™ is a free flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear somewhat darker than the surrounding concrete. While this color will lighten substantially as the concrete cures and dries out, the repair may always appear slightly darker than the surrounding concrete.

PACKAGING/YIELD

Tstrata IRC™ is packaged in 50 lb (22.7 kg) bags. Yield: 0.37 ft³ (0.01m³) per bag when mixed with 0.5 gal (1.9 L) of water. Bulk bags suitable for mixing in transit mix trucks are also available

WORKABILITY

Properties and early strength development will be affected as temperatures vary.

SHELF LIFE

1 years in original, unopened package.

COVERAGE:

One unit of Tstrata IRC™ will cover approximately 4.4 ft² (0.41 m²) when placed at an average depth of 1" (2.5 cm). Tstrata IRC™ is fully extended with pea gravel and yields approximately 0.37 ft³ (0.01m³) per bag when mixed with 0.5 gal (1.9 L) of water.

DIRECTIONS FOR USE:

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oils and/or all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP 5-7 in accordance with ICRI Guideline 310.2. Properly clean profiled area. A Saturated Surface Dry (SSD) concrete surface can be primed with a scrub coat of freshly mixed Tstrata IRC™. The repair must be made before the scrub coat dries out.

Exposed Reinforcement Steel: Remove rust and scaling prior to placing material.

Mixing: Small quantities may be mixed with a low RPM drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs. All materials should be in the proper temperature range of 60° -90°F (15° - 32°C). Add the appropriate amount of water for the batch size, 0.45 - 0.50 gal (1.7 - 1.9L) per bag, and then add the dry product. Mix a minimum of 4 minutes. For projects requiring much larger placements, material can be mixed in transit mix drum mixers or other mixers sized to the correct batch size using material supplied in bulk bags.

Placement: Discharge material from mixer and place using "form and pour" or "form and pump" techniques. Material may also be placed using a trowel, come-a-long, or square tipped shovel to a thickness that matches the surrounding concrete.

Finishing: This product is designed for finishing with a float or broom appearance. A steel trowel finish may be applied but timing of the final trowel is critical and it may be difficult achieving a smooth finish over a large area. DO NOT add additional water to the surface during the finishing operation. Use of a surface evaporation retarder is recommended.

Curing & Sealing: To prevent surface cracking, cure with a high solids curing compound. In hot, windy or direct sunlight situations, re-wet the surface after the curing compound has dried and cover with polyethylene for a minimum of three days. If a curing compound is not desired, wet cure for a minimum of three days to ensure the concrete surface does not dry out.

CLEAN-UP:

Clean tools and equipment with water before the material hardens.

PRECAUTIONS/LIMITATIONS:

- Do not use material at temperatures below 45°F (7°C), Unless proper cold weather precautions are implemented
- Do not use material at temperatures above 90°F, unless proper hot weather precautions are implemented"
- No heavy traffic until the product has cured.
- Keep fresh repair from freezing until a minimum strength of 3000 psi (6.90 MPa) is reached.
- A curing compound is recommended for Tstrata IRC™
- In all cases, consult the Material Safety Data Sheet before use.

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