

1. PRODUCT NAME

Rhino Carbon Fiber Instant Set Concrete Repair Mortar

2. MANUFACTURER

Rhino Carbon Fiber
8383 Riley St.
Zeeland, MI 49464 USA
Phone: 1-888-684-3889
Web: www.rhinocarbonfiber.com

3. PRODUCT DESCRIPTION

Instant Set Concrete Repair Mortar is a fast-setting, high-performance, multi-use blend of hydraulic cement, polymers, fine aggregates, and special additives used for concrete repair and new construction where high early strength, excellent durability, and low shrinkage is required. Mix with water for applications from ½ in. minimum to 6 in. maximum thickness (1.3-15 cm).

Features and Benefits

- Fast-setting, initial set in 15 minutes
- High early strength, reaches structural strength in 1 hour
- Air-entrained
- Excellent freeze/thaw and salt resistance properties
- Non-metallic, no chlorides
- Trowelable from ½ in. to 6 in.
- Add water, mix, and use
- Excellent low-shrink properties
- Durable in critical applications including wet environments
- Polymer-modified for increased adhesion and flexural strength
- Meets ASTM C928, and C387

When/Where to Use

- Interior or exterior
- Vertical, overhead, and horizontal
- Residential and commercial
- New construction and repairs of concrete slabs, curbs, steps, driveways, sidewalks, and stucco
- Structural concrete construction and repairs
- When high early strength and fast-setting is required

4. TECHNICAL DATA

Typical Values • Instant Set Concrete Repair Mortar	
Initial Set Time	≤ 15 minutes
Final Set Time	≤ 35 minutes
Compressive Strength ASTM C109	
1 hour	≥ 2,500 psi (17.2 MPa)
3 hours	≥ 4,000 psi (27.6 MPa)
24 hours	≥ 5,000 psi (34.6 MPa)
7 days	≥ 5,500 psi (37.9 MPa)
28 days	≥ 6,500 psi (44.8 MPa)
Slant Shear Bond ASTM C882	
24 hours	1,200 psi (8.27 MPa)
28 days	2,200 psi (15.2 MPa)

Splitting Tensile ASTM C496	
7 days	450 psi (3.1 MPa)
28 days	550 psi (3.79 MPa)
Flexural Strength ASTM C78	
7 days	500 psi (3.45 MPa)
28 days	550 psi (3.79 MPa)
Length Change ASTM C157	
28 days (air)	-0.04
28 days (in water)	0.02

Greater than: > Greater than or equal to: ≥ Less than: < Less than or equal to: ≤

Coverage

- 1 sq. ft. per lb. at ½ in. thickness (0.09 m² per 0.45 kg at 3 mm)
- 50 lb. (22.7 kg) bag yields approximately 0.50 cu. ft. (0.014 m³)

5. INSTALLATION

Preparation

Read all directions before starting work. Proper surface preparation is crucial to achieving a successful application.

- All surfaces must be structurally sound and clean. Remove all dust, acid, waxes, sealers, old adhesive residue, curing compounds, oil, paint, or any other foreign materials that could inhibit bond.
- Condition all materials to 65°F-75°F (18°C-24°C) 24 hours prior to installation.
- Prior to material placement, dampen the area to be repaired with clean water to a saturated-surface-dry (SSD) condition.
- Organize mixing and application to be as close to the work area as possible to maximize the working time with this accelerated setting material.
- Any rust on exposed rods should be removed by mechanical methods, wire brushing, sandblasting, or scraping.

Note: It is the responsibility of the installer/applicator to ensure the suitability of the product for its intended use.

Mixing

Mix only the amount that can be applied in 15 minutes. The use of a ½" heavy-duty drill (300 RPM or less) with paddle mixer or a mortar mixer is recommended, although hand-mixing smaller amounts can also be used. Avoid high speed mechanical mixing which can entrap air into the mixture. Choose the mixer size most appropriate for the size of the job to be done. Allow at least 1 cu. ft. (28 L) of mixer capacity for every 50 lb. (22.7 kg) bag of product.

Approximate Water Requirements	
50 lb. bag	2.75-4.5 qt. (2.6-4.3 L) Do not exceed 4.5 qt. (4.3 L)

1. In a clean container, with clean tools, mix with cool water only, no bonding additive is needed. Place $\frac{3}{4}$ of the desired mixing water, start mixer, then slowly add the dry material. After all of the powder has been added, slowly add the remaining $\frac{1}{4}$ water until the desired consistency is achieved. The mix consistency should be determined by the project application. Vertical and overhead applications require a firm, plastic, trowelable consistency, while grouting and anchoring a more flowable consistency.
2. Mix to a uniform, lump-free consistency, typically 1-3 minutes. If additional water is needed for your application, add in small doses. Material becomes stiff in approximately 10-15 minutes, so mix only what you plan on using in this time period.
3. Do not retemper, exceed water limits, or add any materials other than clean potable water. Clean mixer often to prevent buildup of material. Elevated temperatures will shorten the working time. Lower temperatures will delay set times. The use of cold water at high temperatures or warm water at low temperatures will aid in adjusting the mix temperature.

Application

Ideal application conditions are when air, material, and substrate temperatures are between 45°F-90°F (7°C-32°C) within 24 hours of application and placement, and rain is not forecast 24 hours after. Set times will vary in extremely hot or cold conditions. Do not apply over concrete cured less than 28 days or surfaces that are frozen or contain frost.

1. Apply from $\frac{1}{2}$ in. minimum to 6 in. maximum thickness (1.3-15 cm). For overhead repairs, use lifts of 2 in. (5 cm) maximum to prevent material from sluffing off, unless forms are provided for support. When used as an overlay, a test area or mock-up is recommended to evaluate suitability for the application.
2. Shovel or place mixture immediately into pre-dampened prepared area. For flat work, do not install in layers, instead place full-depth sections and progress horizontally.
3. Once the mixture has been compacted and spread to completely fill forms or patch, strike off with a straight board or screed, moving the edge back and forth with a saw-like motion. Use a darby or bull float to level any ridges and fill voids left by the screed.
4. Do not wait for bleed water, apply final finish as soon as possible using trowel, float, and/or broom finish.
5. Mortar shall be used and placed in final position within 35 minutes after initial mixing or discarded at that time.
6. Can typically be open to foot traffic in 4-6 hours, wheeled traffic in 12 hours at average temperatures of 70°F (21°C).
7. Cold weather conditions below 45°F (7.2°C) can extend the set time of the product. Heating of the concrete repair area before and after placement and using warm water for mixing may assist in increasing the rate of strength gain. In warm weather conditions, materials and concrete surfaces that are hot may reduce the working time of the product. Keeping water and material cool will assist in maintaining open time of the product.

Curing

Water cure Instant Set Concrete Repair Mortar installations by keeping the exposed surfaces wet with a light mist of water for a minimum of 1 hour after application. This allows the product to reach sufficient strength. Begin curing as soon as the surface begins to lose the moist sheen. Under hot and windy conditions, all concrete tends to lose moisture unevenly and may develop plastic shrinkage cracks. Protect from freezing for a minimum of 48 hours.

The fast-setting technology used in this product reduces the waiting time for application of paints or coatings. Water-based

coatings and latex paints can typically be applied in 1-4 hours when conditions are dry. Allow a minimum of 16 hours drying for solvent based coatings such as oil based paint and epoxy coatings.

Clean Up

Use soapy water to clean hands and tools immediately after use. Dried material must be mechanically removed. Use a waste water hardener (e.g. Congelz[®] or similar product) for cementitious waste disposal.

Limitations

- Follow all industry standard safety procedures when handling, such as gloves and eye protection. Wear gloves at all times, failure to do so can result in severe burns.
- Store in tightly sealed original factory containers off the floor in a dry place
- Use potable water for mixing, no bonding additives are needed.
- Clean trowel frequently during application.
- Do not over-work or over-trowel
- As with all cementitious materials, avoid contact with aluminum to prevent adverse chemical reactions and possible product failure.
- Instant Set Concrete Repair Mortar should be installed in accordance with local building code provisions and all applicable ASTM standards.
- With flat work, DO NOT install in layers, instead progress horizontally in full-depth sections.
- Do not cover or fill control or expansion joints.

Safety

READ THE SAFETY DATA SHEET (SDS) BEFORE USING THIS PRODUCT. SDS information is available on our website: www.rhinocarbonfiber.com

Cautions

Read complete cautionary information printed on product container prior to use.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of the Instant Set Concrete Repair Mortar under normal environmental and working conditions. Because each project is different, Rhino Carbon Fiber cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

6. AVAILABILITY

To locate Instant Set products in your area, please contact:
Phone: 1-888-684-3889
Email: info@rhinocarbonfiber.com

7. WARRANTY

Seller warrants that its product will conform to and perform in accordance with the product specifications. The foregoing warranty is in lieu of all other warranties, expressed or implied, including, but not limited to those concerning merchantability and fitness for a particular purpose. Because of the difficulty in ascertaining and measuring damages hereunder, it is agreed that Seller's liability to the Buyer shall not exceed the total amount billed and billable to the Buyer for the product hereunder.

Shelf Life	Best when used within one year in original, unopened bags
Storage Conditions	Store dry, cool, out of direct sunlight. Best to condition material to 65-75°F (18°-24°C) before using.
Color	Gray

WARNING: INJURIOUS TO EYES

KEEP OUT OF REACH OF CHILDREN

Data Sheets are subject to change without notice. For the latest revision, check our website at www.rhinocarbonfiber.com



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