



STR Mortar

*Flowable, Shrinkage Compensated Structural Repair
Mortar w/ Ferrolok™ Integral Corrosion Inhibitor*

DESCRIPTION

STR Mortar is a slow setting, pumpable, structural concrete repair mortar that exhibits excellent flexural properties, shear bond strength and compressive strength. This product is a blend of portland cement, selected aggregates, proprietary admixtures and has the additional benefit of **Ferrolok™**, an integral corrosion inhibitor. **STR Mortar** is ideal for formed applications that require extended working time, high fluidity and added depth requirements.

USES

STR Mortar is ideal for a wide variety of formed concrete repairs:

- Vertical form and cast-in-place
- Tunnels
- Grouted preplaced aggregate
- Piers, docks and dams
- Form and pump
- Fully contained form applications

BENEFITS

- Resilient: Withstands freeze/thaw cycles and withstands corrosive elements
- Workability: Slow setting, excellent pumpability
- Performance: Excellent compressive strengths
- Consistent: Strict Quality Control testing and standards

STANDARDS

STR Mortar meets and exceeds the requirements of ASTM C-928 R1.

SURFACE PREPARATION

All surfaces in contact with **STR Mortar** shall be free of dirt, oil, grease, laitance and other contaminants that may act as bond-breakers. All unsound concrete should be removed to ensure a good bond. Smooth, dense surfaces need to be mechanically abraded to provide necessary bonding requirements. Mechanically prepare the substrate to a minimum CSP 9 following ICRI Guideline 310.2R to allow proper bonding. ACI recommends that the area to be patched should be saturated for 24 hours before placement. Remove any standing water. Surface should be saturated surface dry (SSD). For best results, scrub some of the mixed components into the prepared surface. Do not allow scrub coat to fully dry before placement. Always apply a test patch. Maintain contact areas between 40°F (4°C) and 90°F (32°C) prior to repair and during initial curing period.

MIXING

For best results, use a mechanical mixer with rotating blades. Pre-wet mixer and empty excess water. Place 3.25 qts of cool, clean potable water per 50 lb bag in mixer, then add dry material. Mix on low RPM for a total of 3 to 5 minutes to achieve desired consistency. Mix only enough material that can be placed within working time. For placements greater than 3" in depth, **STR Mortar** must be extended by up to 30%, by weight, with clean, washed and dried 3/8" (1 cm) pea gravel. Do not blend excess water as this will cause bleeding and segregation. Do not use any other admixtures or additives.

PLACING

STR Mortar should be placed upon completion of mixing. Place material consistently, avoiding any air entrapment. Apply material into prepared area, ensuring that all pores and voids are filled. For vertical or overhead applications, air relief vents in forms should be placed at the highest point in the repair area to prevent voids from entrapped air. For further forming information, refer to ACI 347R "Guide to Formwork for Concrete".

FINISHING AND CURING

Follow standard ACI curing practices.

STORAGE

Normal cement storage and handling practices should be observed. Store material in an interior, cool, dry place. Shelf life is one year in original, unopened container.

LIMITATIONS

In addition to limitations already mentioned, please note the following. Do not apply when the surface or ambient temperature is below 40°F (4°C) or when the temperature is expected to fall below 40°F within 48 hours. Do not apply over surfaces that are frozen or contain frost. Do not apply over any active faults or cracks in the substrate without addressing any movement that may occur. Allow concrete to fully cure for 28 days before use of this product. Minimum application thickness is 3/4" and maximum application thickness is 10" with aggregate extension. Application must be fully contained by formwork on all sides. Setting time will speed up in hot weather and slow in cold weather. For hot and cold weather applications, contact your US SPEC manufacturer's representative.

Packaging: 50 lb (22.7 kg) bag, 63 bags per pallet



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PHYSICAL PROPERTIES

All Physical Property testing performed in laboratory conditions of 73°F (22.8°C) ± 3°F (-16°C) and a relative humidity no less than 50% unless otherwise determined by the test method or specification. All results represent **STR Mortar** with 3.25 qts water unless listed otherwise. Tests are conducted under standardized conditions for comparative purposes, and results may not be representative of performance under field conditions.

Property and Test Method	Results			
Compressive Strength ASTM C109	3 Hours	1 Day	7 Days	28 Days
	600 psi (4.13 MPa)	4,000 psi (27.57 MPa)	6,700 psi (46.20 MPa)	9,000 psi (65.50 MPa)
Rate of Set ASTM C266	Working Time	Initial	Final	
	:25	:45	1:45	
Flexural Strength ASTM C348	1 Day	28 Days		
	1,200 psi (8.27 MPa)	1,700 psi (11.72 MPa)		
Density ASTM C138	141 lb/ft ³ (2,114 kg/m ³)			
Length Change ASTM C157	28 Days Air	28 Days Water		
	(-)0.04%	(+)0.03%		
Modulus of Elasticity ASTM C469	4.47 × 10 ⁶ @ 28 days (30.8 GPa)			
Splitting Tensile Strength ASTM C496	28 Days			
	2,000 psi (13.78 MPa)			
Bond Strength ASTM C882	1 Day	7 Days	28 Days	
	2,100 psi (14.48 MPa)	2,800 psi (19.31 MPa)	3,900 psi (26.89 MPa)	
Chloride Ion Content ASTM C1218 / C1152	Water Soluble	Acid Soluble		
	.004/ .011	.007 / .019		
Flow ASTM C1437	Time	Flow		
	5 Minutes	138%		
Coefficient of Thermal Expansion CRD C39	6.9 × 10 ⁻⁶ in/in°F (12.42 × 10 ⁻⁶ cm/cm°C)			
Corrosion Resistivity	STR Mortar tested compatible with Vector™ Corrosion Technologies Galvashield® embedded galvanic anodes.			

REGULATORY

Read and follow application information, precautions and Material Safety Data Information.

Right-to-know

This product contains Portland Cement (CAS#65997-15-1) and Crystalline Silica (CAS# 14808-60-7)

HMIS

Health 1, Fire 0, Reactivity 0

Prop 65

Warning! This product contains Crystalline Silica, a chemical known to the State of California to cause cancer or reproductive toxicity.

VOC Content

0 g/L

CAUTION

EYE AND SKIN IRRITANT

Contains Portland Cement (CAS# 65997-15-1) and Crystalline Silica (CAS# 14808-60-7). Do not allow contact with eyes or skin. Avoid breathing dust - silica may cause serious lung problems. There is limited evidence silica is a carcinogen. The use of gloves, goggles, dust masks and other protective clothing is recommended. If cement or sand particles get into eyes, rinse immediately with clean water and seek prompt medical attention.

TECHNICAL SERVICE

Contact your US SPEC manufacturer's representative for the most current product information.

US MIX Co.

112 South Santa Fe Drive

Denver, CO 80223

Tel: 303.778.7227 Fax: 303.722.8426

Web Site: www.usspec.com

NOTICE OF LIMITED WARRANTY US MIX Co. (manufacturer) warrants to buyer that this product at the time and place of shipment is of good quality and conforms to the manufacturer's specifications in force on the date of manufacture when used in accordance with the instructions hereon. Manufacturer cannot warrant or guarantee any particular method of use, application or performance of the product under any particular condition. This limited warranty cannot be extended or amended by manufacturer's sales, people, distributors or representatives or by any sales information, specifications of anyone other than the manufacturer. Liability under this warranty is expressly limited to refund of the purchase price. See product packaging for complete limitation of warranties and liability.

Yield: 50 lbs (22.7 kg) will fill approximately 0.43 ft³ (0.012 m³) when 3.25 qts mixing water is used.