



# 3-2-1

## Cementitious Resurfacing Coating

### DESCRIPTION

**3-2-1** is a blend of portland cement, dry polymers and proprietary aggregates designed to provide a textured patching material for thin surface repairs, coating and restoration applications. **3-2-1** exhibits superior workability by maintaining a smooth, creamy consistency for easy troweling, rubbing or spreading. **3-2-1** contains no gypsum.

### USES

**3-2-1** is ideal for a wide variety of concrete repairs:

- Resurfacing, rubbing and finishing of precast and tilt-up concrete products
- Cementitious rub for defective concrete formwork
- Refinish old, vertical, concrete surfaces
- Bridge beams, wing walls, abutments, columns and structural surface repair
- Fill in pits, voids and defects in concrete, masonry, plaster, sheetrock or wood
- Can be applied in applications from feather edge to 1/8" thickness

### BENEFITS

- Durable: Contains no gypsum
- Color: Consistent color match for concrete
- Resistant: Withstands wearing
- Adhesion: Polymer modified for increased adhesion so paints and coatings bond easily
- Smooth: Maintains moisture for easy finishing
- Non-corrosive and non-metallic
- Consistent: Strict Quality Control testing and standards

### SURFACE PREPARATION

All surfaces in contact with **3-2-1** 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 may need to be mechanically abraded to provide necessary bonding requirements. Mechanically prepare the substrate to a minimum CSP 2 following ICRI Guideline 310.2R to allow proper bonding. Moisten area prior to application. Always apply a test area prior to application. 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 or use a heavy duty 1/2" (15 mm) (or larger) low-speed, corded drill and mixing paddle #6 per ICRI Technical Guideline 320.5R. Pre-wet mixer and empty excess water. Place 6.0–7.0 quarts of cool, clean potable water per 50 lb (22.7 kg) bag in mixer, then add dry material. Mix on low RPM for a total of 3 to 5 minutes until a homogeneous mixture is achieved. Mix only enough material that can be placed within working time. Do not blend excess water as this will cause bleeding and segregation. Do not use any other admixtures or additives.

### COVERAGE

One 50 lb (22.7 kg) bag will cover approximately 45–50 ft<sup>2</sup> at 1/8" thickness. Coverage may vary depending on porosity of surface.

### PLACING

**3-2-1** can be installed with a putty knife, trowel or sponge float. Place material consistently, without multiple layers. Avoid any air entrapment. For areas greater than 1/8" in depth, apply **US SPEC Quickset 20** to within 1/8" of final repair. Apply a finish coat of **3-2-1** with a trowel or sponge float over entire area until even. If needed, apply a second coat before the first coat sets. Install in one consistent application for best color match. Material performs best when applied at cool periods in the day. Do not add water to already applied material. Introducing water to already applied material will result in discoloration.

### FINISHING & CURING

Follow standard ACI curing practices. Exposed surfaces should be cured with a membrane forming cure and seal compound such as **US SPEC Hydrasheen** or **US SPEC Hydrasheen 30%**.

### 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 expected to fall below 40°F (4°C) 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 the use of this product. This material is not intended for use as a horizontal wearing surface. Protect newly applied material from moisture intrusion for a minimum of 8 hours. 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.



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### PHYSICAL PROPERTIES

All Physical Property testing performed in laboratory conditions of  $73.5 \pm 3.5^{\circ}\text{F}$  ( $23 \pm 2^{\circ}\text{C}$ ) and a relative humidity no less than 50% unless otherwise determined by the test method or specification. All results represent **3-2-1** with 7.0 quarts 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			
<b>Compressive Strength</b> ASTM C109	<b>1 Day</b>	<b>3 Days</b>	<b>7 Days</b>	<b>28 Days</b>
	1,100 psi (7.58 MPa)	2,000 psi (13.78 MPa)	2,800 psi (19.30 MPa)	4,000 psi (27.57 MPa)
<b>Rate of Set</b> ASTM C266	<b>Working Time</b>	<b>Initial</b>	<b>Final</b>	
	1:30	3:00	5:00	
<b>Flexural Strength</b> ASTM C348	<b>7 Days</b>		<b>28 Days</b>	
	700 psi (4.82 MPa)		1,000 psi (6.89 MPa)	
<b>Density</b> ASTM C138	117 lb/ft <sup>3</sup> (1,874 kg/m <sup>3</sup> )			
<b>Length Change</b> ASTM C157	<b>28 Day Air</b>		<b>28 Day Water</b>	
	(-)0.04%		(+)0.04%	
<b>Modulus of Elasticity</b> ASTM C469	1.94 x 10 <sup>6</sup> @ 28 days (13.37 GPa)			
<b>Flow</b> ASTM C1437	<b>Time</b>	<b>Flow</b>		
	15 minutes	47%		
<b>Coefficient of Thermal Expansion</b> CRD C39	6.9 x 10 <sup>-6</sup> in/in <sup>°</sup> F (12.42 x 10 <sup>-6</sup> cm/cm <sup>°</sup> C)			

### DANGER

This product contains Crystalline Silica (CAS# 14808-60-7) and Portland Cement (CAS# 65997-15-1). Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust.



**WARNING:** Cancer and Reproductive Harm -

[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### FIRST AID

If swallowed: Immediately call a poison center/doctor. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

### MANUFACTURER/TECHNICAL SERVICE

Contact your US SPEC manufacturer's representative for the most current product information. Always read and follow the warnings and instructions on the most current technical data sheets, available online at [www.usspec.com](http://www.usspec.com).

US MIX Co.  
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Web Site: [www.usspec.com](http://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 lb (22.7 kg) will fill approximately 0.43 ft<sup>3</sup> when 7.0 quarts mixing water is used.**