



3-2-1

Cementitious Smoothing and Resurfacing Coating

DESCRIPTION

3-2-1 is a blend of portland cement, dry polymers and proprietary aggregates designed to provide a smooth, 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** has superior bond strength to the substrate and contains no gypsum.

USES

- 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 bondbreakers. 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. Moisten area prior to application. Always apply a test section. 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 6-7 quarts 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. Do not blend excess water as this will cause bleeding and segregation. Do not use any other admixtures or additives.

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 3-2-1** to within 1/8" of final re

PLACING (continued)

pair. 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.

COVERAGE

One 50 lb (22.7 kg) bag will cover approximately 45 to 50 ft² at 1/8" thickness. Coverage may vary depending on porosity of surface.

FINISHING & CURING

Follow standard ACI curing practices. Exposed surfaces should be cured with a membrane forming curing compound such as **US SPEC Maxcure Resin Clear**, **Hydrasheen 15%** or **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 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 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.

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 3-2-1 with 7.0 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 | 1 Day | 3 Days | 7 Days | 28 Days |
| | 1,100 psi (7.58 MPa) | 2,000 psi (13.78 MPa) | 2,800 psi (19.30 MPa) | 4,000 psi (27.57 MPa) |
| Rate of Set ASTM C266 | Working Time | Initial | Final | |
| | 1:30 | 4:35 | 7:03 | |
| Flexural Strength ASTM C78 | 7 Days | | 28 Days | |
| | 700 psi (4.82 MPa) | | 1,000 psi (6.89 MPa) | |
| Density ASTM C138 | 117 lb/ft ³ (1,874 kg/m ³) | | | |
| Length Change ASTM C157 | 28 Day Air | | 28 Day Water | |
| | (-)0.04% | | (+)0.04% | |
| Modulus of Elasticity ASTM C469 | 1.99 x 10 ⁶ @ 28 days (13.72 Gpa) | | | |
| Chloride Ion Content ASTM C1218 / C1152 | Water Soluable | | Acid Soluable | |
| | .002 / .004 | | .008 / .0108 | |
| Flow ASTM C1437 | Time | | Flow | |
| | 15 minutes | | 47% | |
| Coefficient of Thermal Expansion CRD C39 | 6.9 x 10 ⁻⁶ in/in°F (12.42 x 10 ⁻⁶ cm/cm°C) | | | |

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.

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Denver, CO 80223

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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 7.0 qts mixing water is used.