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## Repairer F-1

*Polymer-Modified, Feather-to-1", Repair Mortar*

### DESCRIPTION

**Repairer F-1** is a one-component, dry polymer-modified blend of portland cement, selected aggregates and proprietary admixtures designed for repairs from feather edge to 1" in interior and exterior applications. **Repairer F-1** develops a tenacious bond to concrete surfaces and will accept foot traffic in 10-12 hours.

### USES

**Repairer F-1** is ideal for a wide variety of concrete surface repairs:

- Precast concrete products, tilt-up panels, curbs, steps, columns, sidewalks, driveways, concrete walls
- Patch repair mortar for spalled and older concrete
- Fill in pits, voids and defects in concrete and masonry

### BENEFITS

- Thermal expansion similar to concrete
- Color: Consistent color match for concrete
- Interior and exterior applications
- Dry polymer modified: Just add water
- Non-corrosive: Will not rust
- Consistent: Strict Quality Control testing and standards

### SURFACE PREPARATION

All surfaces in contact with **Repairer F-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 need to be mechanically abraded to provide necessary bonding requirements. Mechanically prepare the substrate to a minimum CSP 5 following ICRI Guideline 310.2R to allow proper bonding. ACI recommends 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 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 4.5 quarts of cool, clean potable water per 50 lb (22.7 kg) bag in mixer, depending on desired consistency being plastic or flowable, then add dry material. Mix on low RPM for a total of 3 to 5 minutes until a homogenous mixture is achieved. Mix only enough material that can be placed within working time. For placements greater than 1" depth **Repairer F-1** must be extended by up to 30% by weight of powder, 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

**Repairer F-1** should be placed upon completion of mixing. Place material consistently, avoiding any air entrapment. Trowel material onto the surface to be repaired, ensuring all pores and voids are filled. Force material against edge of repair, working away from center. After leveling, the patch can be troweled, brushed or broomed to the desired finish. When material has reached the proper set, it can be shaved, shaped or molded with a

### PLACING (continued)

steel trowel. Multiple lifts can be applied. Each lift should be applied no more than 1" depth. Profile or roughen each lift to ensure a good bond. Screed or float to finished elevation.

### FINISHING & CURING

Follow standard ACI curing practices. Exposed surfaces should be cured with a membrane forming compound.

### 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 use of this product. Setting time will speed up in hot weather and slow in cold weather. For hot and cold weather applications, contact your Janell representative.

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



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03 01 00 MAINTENANCE OF CONCRETE

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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 **Repairer F-1** with 4.5 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> 2,500 psi (17.23 MPa)	<b>3 Days</b> 3,000 psi (20.68 MPa)	<b>7 Days</b> 4,000 psi (27.57 MPa)	<b>28 Days</b> 4,500 psi (31.02 MPa)
<b>Rate of Set</b> ASTM C266	<b>Working Time</b> :30	<b>Initial</b> :50	<b>Final</b> 1:20	
<b>Flexural Strength</b> ASTM C78	<b>7 Days</b> 1,000 psi (6.89 MPa)	<b>28 Days</b> 1,500 psi (10.34 MPa)		
<b>Length Change</b> ASTM C157	<b>28 Days Air</b> (-) .07%	<b>28 Days Water</b> (+) .05%		
<b>Modulus of Elasticity</b> ASTM C469	2.22 x 10 <sup>6</sup> @ 28 days (15.3 GPa)			
<b>Scaling Resistance</b> ASTM C672	<b>Age</b> 25 Cycles	<b>Scaled Material</b> .004/ kg/m <sup>2</sup>	<b>Visual Rating</b> 0	
<b>Bond Strength</b> ASTM C882	<b>1 Day</b> 1,000 psi (6.89 MPa)	<b>7 Days</b> 1,500 psi (10.34 MPa)	<b>28 Days</b> 2,500 psi (17.23 MPa)	
<b>Coefficient of Thermal Expansion</b> CRD C39	7 x 10 <sup>-6</sup> in/in <sup>°</sup> F (13 x 10 <sup>-6</sup> cm/cm <sup>°</sup> C)			
<b>Corrosion Resistivity</b>	Repairer F-1 tested compatible with Vector <sup>TM</sup> Corrosion Technologies Galvashield <sup>®</sup> embedded galvanic anodes.			

### 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)

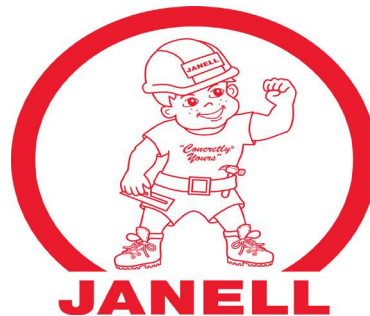
### FIRST AID

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

Exclusively manufactured for Janell Inc. by **US SPEC of Denver, CO.**

Contact your Janell representative for the most current product information. Always read and follow the warnings and instructions on the most current technical data sheets.



Cincinnati, OH: 513-489-9111  
Norwood, OH: 513-651-9111  
Erlanger, KY: 859-341-9111

Dayton, OH: 937-866-9111  
Columbus, OH: 614-224-9111  
Lexington, KY: 859-254-9111

**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 4.5 quarts mixing water is used.**