

## ISR VO

**Durable, crack resistant repair mortar utilizing ISR (Internal Stress Relief) technology with ECB-Tech corrosion protection.**

**WHERE TO USE**  
**Protective repairs to vertical and overhead concrete.**

### Performance Characteristics

#### Sustainable Green Technology

- Contains significant concentrations of both pre-and post-consumer recycled content.

#### Low Shrinkage

- Maintains integrity of repair, resists cracking.

#### Thermal Compatibility

- Prevents delamination due to temperature change.

#### Corrosion Protection

- Protects reinforcing steel in repair zone and suppresses ring anode effect.

#### Durable

- Resistant to weathering action, excellent freeze/thaw stability and abrasion resistance.

#### Long-term Protection

- Resistant to deicing salts, carbonation, chloride, and chemical attack.

#### Dimensionally Stable

- Suitable for large areas.

#### Abrasion Resistant

- Hard, durable surface for long term wear.

### Surface Preparation

- Remove loose and deteriorated material, laitance, dirt, dust, oil and any surface contaminants that will inhibit proper bond.
- Saw cut edges with a diamond blade at a 90° angle to eliminate feather edging. Avoid polishing the edges as this will inhibit bond.
- Avoid bruising or micro cracking during surface preparation. Refer to ICRI Surface Preparation Guide 03732.
- Repair zone must be a minimum of 1/2 inch deep, of simple geometry, with no complex edge conditions.

- Avoid long narrow repairs; these have a tendency to crack.
- Saturate substrate with clean water, (saturated surface dry/SSD), with no standing water during Application.
- Remove concrete from corroded steel and several inches beyond to expose non-corroded steel.
- Provide a 3/4-inch clearance between the concrete and steel.
- Damaged reinforcing steel should be inspected by a qualified engineer and appropriate action taken.

### Priming

- Prime the prepared substrate including all edges with a bond coat of ISR VO. Work the bond coat into the substrate to ensure intimate contact and establish bond. ISR VO must be applied while bond coat is wet. If the bond coat dries, remove and reapply.

#### Embedded Metal and Steel

- Remove all scaling rust from embedded metal and steel. Apply ECB anti-corrosion coating.

### Mixing

- Mechanically mix using a low speed drill (400-600 rpm) and mixing paddle or mortar mixer.
- Pour 1 gallon of potable water into a clean mixing vessel and slowly add all of the powder.
- Mix continuously for 3 minutes to a uniform, lump-free consistency.
- Add up to 1 cup of additional water, if needed.
- Allow to "breathe" for 1 minute and remix for 1 minute. This will improve workability and extend open time
- Do not overmix, this will entrain excess air.

### Application

- At the time of application, surfaces should be saturated surface dry (SSD) but hold no standing water.
- Place material continuously to break points.
- Force the material against the edges of the repair, working toward the center.
- Material may be applied in multiple lifts of not less than 1/2 inch and no greater than 2 inches.
- Consolidate each lift and allow to stiffen to thumb-print hard before continuing.
- Scratch (screed/open pores) each lift to prepare surface for subsequent lift.
- Finish with a float or trowel.
- Avoid overworking material during placement and finishing - this will produce surface (map) cracking.

### Curing

- Dampen the repair with a fine mist of water for 24 hours or moist cure with wet burlap and polyethylene.
- Protect repair from direct sunlight, wind, rain and frost during curing period.

### Clean Up

- Clean tools and equipment with water immediately after use.
- Cured material must be removed mechanically.

# ISR VO

## Theoretical Yield

Yield Per Pail	Repair Depth	Square Feet
0.42 cubic feet	1/2 Inch	10.08
0.42 cubic feet	1 Inch	5.04
0.42 cubic feet	1.5 Inches	3.36
0.42 cubic feet	2 Inches	2.52

## Product Handling

### Packaging

- 50 lb. bags

### Shelf Life

- 12 months when properly stored.

### Storage

- Transport and store in cool, clean, dry conditions in unopened containers.
- High temperature or high humidity will reduce shelf life.

## Limitations

- Do not apply unless substrate and ambient temperature can be maintained at a minimum of 40°F for 24 hours. Refer to ACI Cold Weather Application Guidelines.

- Cold mixing water and low temperature will retard set. Hot water and high temperature will accelerate set.
- Protect application from precipitation and high wind for at least 8 hours.
- Do not add more water than specified, this will lower strengths and cause shrinkage cracking.
- Avoid overworking material during placement and finishing - this will produce surface (map) cracking.

## Health and Safety

- Product is alkaline.
- Do not ingest.
- Avoid breathing dust.
- Avoid contact with skin and eyes.

- Refer to Safety Data Sheet (SDS) for additional information.

## First Aid

- In case of skin contact, wash thoroughly with soap and water.
- For eye contact, flush immediately with a high volume of water for at least 15 minutes and contact a medical professional.
- For respiratory problems, remove person to fresh air.

## Disposal

- Dispose of material in accordance with local, state or federal regulations.

## Technical Data

Physical state and appearance		Dry powder with aggregate.	
Base		Portland cement	
pH		>12	
Length change	ASTM C157	<500 $\mu$ strains @ 28 days	
Restrained shrinkage cracking	ASTM C1581	No cracking after 256 days	
Chloride Ion Penetration	ASTM C1202	1,200 coulombs @ 28 days	
Short-term bond strength	ICRI 03739*	400 psi	
Scaling resistance (Rating 0 – 1)	ASTM C672	Weight loss after 50 cycles (kg/m <sup>2</sup> ) .04	
Freeze/thaw resistance - procedure A	ASTM C666	Weight gain (%) 0. Expansion (%) 0. Durability Factor DF (%) 99.	
		<b>7 days</b>	<b>28 days</b>
Compressive strength - psi	ASTM C39	4390	4400
Splitting tensile strength - psi	ASTM C496/C496M		463

## FOR PROFESSIONAL USE ONLY

Conproco warrants this product for one year from the date of manufacture to be free from manufacturing defects and to meet the technical properties on the current technical data sheet if used as directed within shelf life. User determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product, exclusive of labor or cost of labor. May 23, 2019

NO OTHER WARRANTIES EXPRESSED OR IMPLIED SHALL APPLY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CONPROCO CORP SHALL NOT BE LIABLE UPON ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES.

**conproco®**

17 PRODUCTION DRIVE, DOVER, NH 03820  
TELEPHONE 800.258.3500 • FAX 603.743.5744 • WEB ADDRESS [www.conproco.com](http://www.conproco.com)