

1. PRODUCT NAME

Tenon® Conproco® ISR HVO

2. MANUFACTURER

TCC Materials®

2025 Centre Pointe Blvd.

Mendota Heights, MN 55120 USA

Phone: 1.651.688.9116

Web: tccmaterials.com
3. PRODUCT DESCRIPTION

Tenon® Conproco® ISR HVO is a durable, crack resistant repair mortar utilizing ISR (Internal Stress Relief) technology with ECB-Tech corrosion protection.

Features and Benefits

- Sustainable green technology; contains significant concentrations of both pre- & 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 & suppresses ring anode effect
- Resistant to weathering action, excellent freeze/thaw stability & abrasion resistance
- Resistant to deicing salts, carbonation, chloride & chemical attack
- Dimensionally stable
- Hard, durable surface for long term wear

When/Where to Use

- Protective repairs
- Horizontal, vertical, and overhead
- Large areas

4. TECHNICAL DATA

Typical Values • ISR HVO	
Physical State & Appearance	Dry powder with aggregate
Set Times	1.5 hrs initial / 2 hrs final
Base	Portland Cement
pH	>12
Length Change (ASTM C157)	<500 µstrains @ 28 days
Restrained Shrinkage Cracking (ASTM C1581)	No cracking after 256 days
Chloride Ion Penetration (ASTM C1202)	1200 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 ²) .04

Typical Values • ISR HVO cont.	
Freeze/Thaw Resistance - Procedure A (ASTM C666)	Weight gain (%) 0. Expansion (%) 0. Durability Factor DF (%) 99.
Compressive Strength - psi (ASTM C39)	7 days: 4,390 psi 28 days: 4,400 psi
Splitting Tensile Strength - psi (ASTM C496 /C496M)	28 days: 463 psi
Modulus of Elasticity (ASTM C469-14)	Chord Elastic Modulus E, [GPa]: 13.8 Tangent Elastic Modulus [GPa]: 13.8

Available Sizes

- 50 lb. bag (BOM #115248)

Coverage

Theoretical Yield		
Yield per Pail	Repair Depth	Square Feet
0.42 cubic feet	½ inch	10.08
0.42 cubic feet	1 inch	5.04
0.42 cubic feet	1 ½ inches	3.36
0.42 cubic feet	2 inches	2.52

5. INSTALLATION
Preparation

Read all directions before starting work. Proper surface preparation is crucial to achieving a successful application.

1. Remove loose and deteriorated material, laitance, dirt, dust, oil, and any surface contaminants that will inhibit proper bond.
2. Saw cut edges with a diamond blade at a 90° angle to eliminate feather edging. Avoid polishing the edges as this will inhibit bond.
3. Avoid bruising or micro cracking during surface preparation. Refer to ICRI Surface Preparation Guide 03732.
4. Repair zone must be a minimum of ½ inch deep, of simple geometry, with no complex edge conditions.
5. Avoid long narrow repairs; these have a tendency to crack.
6. Saturate substrate with clean water, (saturated surface dry/SSD), with no standing water during application.
7. Remove concrete from corroded steel and several inches beyond to expose non-corroded steel.
8. Provide a ¼ inch clearance between the concrete and steel.
9. Damaged reinforcing steel should be inspected by a qualified engineer and appropriate action taken.

Priming

1. Prime the prepared substrate including all edges with a bond coat of ISR HVO.
2. Work the bond coat into the substrate to ensure intimate contact and establish bond.

Priming cont.

3. ISR HVO must be applied while bond coat is wet.
4. If bond coat dries, remove and reapply.

Embedded Metal & Steel

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

Note: It is the responsibility of the installer/applicator to ensure the suitability of the product for its intended use.

Mixing

- Mechanically mix using 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. Proper mix ratio is 4 parts powder to 1 part water.
- 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

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

Limitations

1. 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.
2. Cold mixing water and low temperature will retard set. Hot water and high temperature will accelerate set.
3. Protect application from precipitation and high wind for at least 8 hours.
4. Do not add more water than specified, this will lower strengths, induce shrinkage cracking and alter final color.
5. Avoid overworking material during placement and finishing - this will affect color and produce surface (map) cracking.
6. Do not ingest
7. Avoid breathing dust
8. Avoid contact with skin & eyes

Safety

READ THE SAFETY DATA SHEET (SDS) BEFORE USING THIS PRODUCT. SDS information is available on our website: tccmaterials.com

- 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.

Cautions

Read complete cautionary information printed on product container prior to use. This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of the covered Tenon brand product(s) under normal environmental and working conditions. Because each project is different, TCC Materials cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

6. AVAILABILITY

To locate Tenon products in your area, please contact:

Phone: 1.651.688.9116

Email: info@tccmaterials.com

7. WARRANTY

Seller warrants that its product will conform to and perform in accordance with the product specifications. The foregoing warranty is in lieu of all other warranties, expressed or implied, including, but not limited to those concerning merchantability and fitness for a particular purpose. Because of the difficulty in ascertaining and measuring damages hereunder, it is agreed that Seller's liability to the Buyer shall not exceed the total amount billed and billable to the Buyer for the product hereunder.

Shelf Life	18 months in unopened containers.
Storage Conditions	Transport and store in cool, clean, dry conditions in unopened containers. High temperature or high humidity will reduce shelf life.
Color	Gray
KEEP PRODUCT IN CONTAINER FROM FREEZING	
WARNING: INJURIOUS TO EYES	
KEEP OUT OF REACH OF CHILDREN	



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