

**1. PRODUCT NAME**

Tenon® Conproco® Matrix VE

**2. MANUFACTURER**

 TCC Materials®  
 2025 Centre Pointe Blvd.  
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**3. PRODUCT DESCRIPTION**

Tenon® Conproco® Matrix VE is a pour applied, viscosity enhanced cementitious repair mortar, formulated to be compatible with the color and physical properties of parent material.

**Features and Benefits**

- Maintains integrity of repair, resists cracking
- Prevents delamination due to temperature change
- Resistant to weathering action, excellent freeze/thaw stability and abrasion resistance.
- Very low permeability
- Resistant to deicing salts, chloride, and chemical attack, and environmental pollution.
- Breathable - Will not cause damage to structure by restricting moisture vapor flow.
- Pourable - Viscosity for molds and on-site repairs.
- Easy to batch in less than full pail quantities.

**When/Where to Use**

- Form repairs & place in molds for natural & cast stone, terracotta & brick

**4. TECHNICAL DATA**

Typical Values • Matrix VE	
Physical State & Appearance	Dry, pigmented powder & liquid
Base	Powder: Portland cement Liquid Admix: Acrylic Polymer
pH (Wet Mix)	>12
Water/Dry Material Ratio	0.20
Dry Bulk Density (ASTM C188)	92 lbs. / ft. <sup>3</sup>
Density (Hardened)	118 lbs. / ft. <sup>3</sup>
Setting Time by Vicat Needle (ASTM C191)	240 minutes
% Air - Pressured Method (ASTM C231)	4%
Water Absorption (ASTM C140)	11%
Water Vapor Transmission (ASTM E96)	5.2 perms
Length Change (ASTM C157)	<500 µstrains @28 days

Typical Values • Matrix VE cont.	
Modulus of Elasticity (ASTM C469)	2.6 x 10 <sup>6</sup>
Slant Shear Bond Strength - Epoxy (ASTM C882)	1,800 psi
Compressive Strength - psi (ASTM C109)	7 days: 2,900 28 days: 3,000
Tensile Strength - psi (ASTM C307)	7 days: 400 14 days: 480 28 days: 560

**Available Sizes**

- 5 gallon pail - 50 lbs. Matrix VE Std/Color (BOM #115422)
- 5 gallon pail - 50 lbs. Matrix VE SP/Color (BOM #115358)

**Coverage**

Theoretical Yield		
Yield per Pail	Repair Depth	Square Feet
0.5 cubic feet	½ inch	12.00
0.5 cubic feet	1 inch	6.00
0.5 cubic feet	1 ½ inches	4.00
0.5 cubic feet	2 inches	3.00

**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 greater tendency to crack.
6. Apply Conpro Start where a consolidant is of benefit.
7. Saturate substrate with clean water, (saturated surface dry/SSD), with no standing water during Application.
8. Remove stone/concrete from corroded steel and several inches beyond to expose non-corroded steel.
9. Provide a ¼ inch clearance between the stone/concrete and steel.
10. Damaged reinforcing steel should be examined by a qualified engineer and appropriate action taken.

**Embedded Metal & Steel**

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

## Mixing

1. Measure Matrix VE powder and water to achieve a 4 to 4.5 parts powder to 1 part water ratio (or approximately 1 gallon per 50 lb. unit of Matrix VE).
2. Pour measured water into a clean container suitable for mixing.
3. Place ½ of measured Matrix VE into mixing container with water and mix until uniform. Add remaining ½ Matrix VE to the mixing container and mix until fully blended to a uniform, lump free consistency.
4. Mechanical mixing at 400–600 rpm is essential to change the viscosity of the material. Do not mix by hand.
5. Additional water may be added to achieve desired consistency for placement of the Matrix VE. Over watering the mix will affect final color.
6. For multiple batches, the additional water should be added in a uniform fashion to avoid color shift.
7. Insufficient water will not hydrate the material and it will not achieve full strength. Mix only as much material as can be placed in 15 -20 minutes.
8. Do not over mix, as this will entrain air.
9. Do not retemper, this will affect color.

## Application

1. At the time of application, surfaces should be saturated surface dry (SSD) but hold no standing water.
2. For multiple batches, the additional water should be added in a uniform fashion to avoid color shift.
3. Insufficient water will not hydrate the material and it will not achieve full strength. Mix only as much material as can be placed in 15 -20 minutes.
4. Do not over mix, as this will entrain air.
5. Do not retemper, this will affect color.

## Curing

Ensure repair zone stays properly hydrated. This may vary depending on ambient conditions. If hydration is not maintained, the repair may flash dry and not achieve full strength. Refer to ACRI 308R-01 for detailed curing recommendations. If the repair is inaccessible, tape polyethylene over area to retain moisture. Do not allow polyethylene to contact the material. 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 temperatures will retard set. Hot water and high temperatures will accelerate set.
3. Protect application from precipitation and high wind for at least 24 hours.
4. Do not add more water than specified.
5. Do not re-temper, as this will affect color.
6. Avoid overworking material during placement as this will affect color and cause surface (map) cracking.
7. Do not allow polyethylene or burlene to touch surface while curing as this will cause whitening of the material.
8. Do not ingest
9. Avoid breathing dust
10. 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](http://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: 651.688.9116  
Email: [info@tccmaterials.com](mailto: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.

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



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