Rapid Patch® Critical Pavement Repair

1. PRODUCT NAME

Tenon® Rapid Patch® Critical Pavement Repair

2. MANUFACTURER

Bluestone Products™, a TCC Materials® company
2025 Centre Pointe Blvd.
Mendota Heights, MN 55120 USA

Phone: 1.651.688.9116
Fax: 1.651.688.9164
Internet: tccmaterials.com

3. PRODUCT DESCRIPTION

Tenon® Rapid Patch® Critical Pavement Repair is a preblended, single-component, fast-setting, high-strength, polymer-modified, fiber reinforced repair mortar designed to be a quick, durable repair for essential heavy-duty surfaces such as airport runways, concrete highways, parking structures, freezer rooms, loading docks, industrial floors, and much more. It is freeze-thaw durable and contains corrosion inhibitor to mitigate corrosion issues. It can be trowel applied on horizontal or vertical surfaces or pumped into place for formed vertical and overhead repairs. Meets ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs.

Features and Benefits

- Polymer-modified for excellent bond
- Fiber reinforced for high flexural strength, provides excellent ductility
- Very low-chloride permeability and corrosion inhibitor protects reinforcing steel
- Rapid strength gain—over 4,500 psi 1 hour from start of mixing

Uses

- High-traffic concrete pavement repairs
- Parking structure repairs
- Bridge deck repairs
- Industrial floor repairs
- Precast concrete repairs
- Airport runways
- Freezer room repairs
- Loading dock repairs

SAFETY

READ THE SAFETY DATA SHEET (SDS) BEFORE USING THIS PRODUCT. SDS information is available on our website: tccmaterials.com or contact TCC Materials® at 651-686-9116 (7:30 AM to 4:00 PM M-F, Central US Time).

CAUTIONS

Read complete cautionary information printed on product container prior to use. Also refer to cautions for the main product being used with this admixture. 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, neither Tenon® nor TCC Materials® can be responsible for the consequences of variations in such

Test Results	
Flow (ASTM C230)	82%
Initial Set	15-25 min
Final Set	20-30 min
Compressive Strength - ASTM C109	
1 hour	>4500
3 hour	>6000
24 hour	>7000
3 day	>8000
7 day	>9000
28 day	>10000
Flexural Strength - ASTM C348	
1 hour	>1350
24 hour	>1500
7 day	>1750
28 day	>2000
Tensile Bond Strength - ASTM C1583	
1 day	>200
28 day	>300
Slant shear bond strength - ASTM C882 (modified)	
1 day	>2000
28 day	>2500
Splitting tensile strength - ASTM C496	
1 day	>600
28 day	>700
Length change - ASTM C157	
Wet Cure	<-0.15%
Air Cure	<+0.15%
Rapid Chloride Permeability - ASTM C1202	
28 day	<800 coulombs

conditions, or for unforeseen conditions. Test placements are recommended in order to verify suitability and to make
adjustments to site specific conditions.

4. TECHNICAL DATA

Note: Test results obtained under controlled laboratory conditions at 72°F (22°C) and 50% relative humidity.

Reasonable variations can occur due to atmospheric and job site conditions. Data Sheets are subject to change without
notice. For the latest version, check our website at www.tccmaterials.com

LEED® Eligibility[1]

- Regional Materials (MR-c5)
- Low-Emitting Materials (IEQ-c4.1, IEQ-c4.3)

Packaging

- 40 lb. (18.1 kg) bag (BOM #113091)

Shelf Life

12 months from the date of manufacture when stored in the original, unopened container, away from moisture, under cool, dry conditions, protected from freezing, and out of direct
sunlight. Store in cool dark environment at 40°F-80°F (4°C-27°C).

5. INSTALLATION

Preparation

All materials should be conditioned to 40°F-80°F (4°C-27°C) a minimum of 24 hours prior to installation. Surfaces must be clean, hard and free from dirt, loose particles, waxes, plastics, curing compounds, grease, paint, efflorescence and any other foreign materials that will inhibit adhesion.

- Adjoining surfaces must be sound, clean, free of loose or damaged concrete, dust, dirt and other contaminants that will interfere with bond. Completely expose and clean all reinforcing steel, ensuring a minimum clearance of ¾ in. (19 mm) behind reinforcing steel.
- Perform reinforcing steel preparation in accordance with ICRI Technical Guidelines No. 03730. For best results patch area edges should be saw cut to a depth of ½ in. (13 mm). Abrade concrete to obtain a rough surface promoting
  adhesion, achieving an ICRI concrete surface profile of #5 or greater.
- Refer to ICRI Technical Guideline #310.1R as well as ACI RAP Bulletins 6 and 7 for repair geometry, surface preparation and material application details.
- The area should be saturated surface dry (SSD) with no standing water on the surface.

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

Refer to:
ICRI Guide No. 03732
Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings and Polymer Overlays

Job Mockups

The manufacturer requires that when its Tenon® products are used in any application or as part of any system that includes other manufacturers' products, the contractor and/or design professional shall test all the system components
collectively for compatibility, performance and long-term intended use in accordance with pertinent and accepted industry standards prior to any construction. Written documentation of the tests performed shall be satisfactory to the design professional and contractor. Test results must include the means and methods of application, products used,
project-specific conditions being addressed, and standardized tests performed for each proposed system or variation.

Mixing

Mix as close to the area where material is being placed as is practical.

1. Tenon® CPR requires 3½-4 quarts of water per 40 lb. bag of powder. Mix only the amount of material that can be placed in 15 minutes.
2. Pour the required amount of potable water into a clean mixing container, then add the measured amount of Tenon® CPR while continuing to mix and blend thoroughly for 4 minutes to a lump free consistency. Less mixing will result in lower strength material.
3. Small amounts of Tenon® CPR can be mixed using a ½" drill (400-600 rpm) and paddle. Larger amounts should be mixed with a paddle mixer such as a mortar mixer.

Application

Ideal application conditions are when air, material and substrate temperatures are between 40°F–80°F (4°C-27°C) within 24 hours of application and when rain is not expected within 12 hours. The minimum ambient and surface temperatures should be 40ºF (4ºC) at time of application. Hot weather and conditions above 80ºF (27ºC) will reduce working time and accelerate set, while cold temperatures below 60ºF (16ºC) will have a retarding effect.

- Immediately apply the fresh mortar into the entire surface, forcing Tenon® CPR firmly into the previously prepared area insuring full contact with all bonding surfaces. Slightly overfill the area, then strike off at the desired depth. Smooth material as required for desired finish.

- After initial set, a trowel can be used to shave off / smooth off the surface. A dampened sponge can be used to gently
  eliminate surface defects but do not work water into the
  surface or it will reduce strength.
- In deeper areas additional lifts can be made after the original patch has reached initial set. Score and roughen the original lift layer to improve bond between applications. Maximum lift per layer is 4” (76 mm)

Curing

After placement and initial set, Tenon® CPR should be moist cured for a minimum of 24 hours. Alternately, a water based curing compound that meets ASTM C309 may be used. Do not use a solvent based curing compound.

Refer also to:

- ACI 305 Guide to Hot Weather Concreting
- ACI 306 Guide to Cold Weather Concreting
- ACI 308 Standard Specification for Curing Concrete

Cleaning

Use clean potable water to clean all tools immediately after use. Dried material must be mechanically removed, or can be
removed with Tenon® Concrete and Mortar Dissolver. Use a waste water hardener (e.g. Conglez™ or similar product) for cementitious waste disposal.

Limitations

- Do not mix more material than can be placed in 15 minutes
- Do not overwater or retemper after initial mixing
- Do not apply in application thickness < ½” (13mm), or greater than 4” (100mm).
- Install in accordance with local building codes and applicable ASTM standards.
- Do not allow Portland cement-based materials to come in direct contact with uncoated aluminum.
- Mixing time and water/powder amounts proportions be consistent from batch to batch.

Coverage

- 40 lb. (18.1 kg) bag yields approximately 0.36 cu. ft. (10.2 L)

6. AVAILABILITY

To locate Tenon® products in your area, please contact:

Phone: 1.651.688.9116
Email: info@tccmaterials.com

LEED® is a registered trademark of U.S. Green Building Council.

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.

8. MAINTENANCE

Not applicable.

9. TECHNICAL SERVICES

Technical Assistance:
Information is available by calling TCC Materials®
(hours 7:30 AM to 4:00 PM CST):

Phone: 1.651.688.9116
Email: info@tccmaterials.com
Web: tccmaterials.com

Technical and Safety Literature:
To acquire technical and safety literature, please visit our website at: tccmaterials.com.

10. FILING SYSTEM

Division 3

[1] Tenon® products can contribute to LEED® credits within the Material Resource, (Recycled Content & Regional Materials) and Indoor Environmental Quality (Low Emitting Materials).

TCC MATERIALS
SPEC BLENDED CONSTRUCTION PRODUCTS®

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