

## 1. PRODUCT NAME

Tenon™ Air-Entrained Concrete Patching Mix AE

## 2. MANUFACTURER

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

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## 3. PRODUCT DESCRIPTION

Tenon™ Air-Entrained Concrete Patching Mix AE is an ideal for repairing concrete pavement, bridge decks, industrial floors, concrete parking lots, and garage decks. This pre-blended mixture of cement, aggregate, and special additives will produce a high strength concrete repair material that is extremely durable and works well in harsh environments. Additionally, when used with Tenon™ Fast-Set Liquid Activator, surfaces can be reopened to traffic within 4 to 5 hours under typical conditions.

Tenon Air-Entrained Concrete Patching Mix AE is a modified proportioned version of Tenon Concrete Patching Mix which has been designed to meet the requirements of Minnesota Department of Transportation specifications 3105 for Grade 3U58M patching mixes.

### Features and Benefits

- Pre-blended mixture
- Fast strength development
- High compressive strength
- Excellent durability
- Freeze/thaw resistant
- Salt resistant properties
- Plasticized
- Air-entrained concrete patch

\*Call TCC Materials for state DOT approvals

### Uses

- Full and partial depth repairs
- Roads and highways
- Parking structures
- Bridge decks
- Industrial floors
- Grout
- New construction

## SAFETY

READ THE SAFETY DATA SHEET (SDS) BEFORE USING THIS PRODUCT. SDS information is available on our website: [tccmaterials.com](http://tccmaterials.com) or contact TCC Materials® at 651-688-9116 (7:30 AM to 4:00 PM, M-F, Central US Time).

## CAUTIONS

Read complete cautionary information printed on product container prior to use.

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 conditions, or for unforeseen conditions.

## 4. TECHNICAL DATA

Complies with ASTM C387

Typical Values • Air-Entrained Concrete Patching Mix	
Slump (ASTM C143)	4-6" (10-15 cm)
Air Content (ASTM C231)	6.5% ± 1.5%
Set Time (ASTM C403)	
Initial Set (hrs: min)	4:15-4:45
Final Set (hrs: min)	5:15-5:45
Compressive Strength, psi (ASTM C39)	
24 hours	>4,000 (27.6 MPa)
3 days	>5,500 (37.9 MPa)
7 days	>6,500 (44.8 MPa)
28 days	>8,000 (55.1 MPa)
Tensile Strength, psi (ASTM C496)	
7 days	460 (3.2 MPa)
28 days	550 (3.8 MPa)
Flexural Strength, psi (ASTM C78)	
7 days	>650 (4.5 MPa)
28 days	>850 (5.8 MPa)

Greater than: > Greater than or equal to: ≥ Less than: < Less than or equal to: ≤

Note: Independent test results obtained under controlled laboratory conditions at 73°F (22.7°C) and 50% relative humidity.

## LEED® Eligibility<sup>1</sup>

- Regional Materials (MR–c4, MR–c5)

## Packaging

50 lb. (22.7 kg.) bag (BOM #126199)

## Shelf Life

12 months from the date of manufacture when stored in the original, unopened container, away from moisture, under cool, dry conditions and out of direct sunlight.

## Commercial Approvals

- Meets MNDOT specification 3105 for Grade 3U58M

## 5. INSTALLATION

### Preparation

All materials should be conditioned to 65°F–75°F (18°C–24°C) 24 hours prior to installation. Proper surface repair preparation is crucial to achieving a successful application.

1. All surfaces must be structurally sound and non–flexing.
2. Clean area and remove all grease, oil, paint, and any other foreign materials that will inhibit performance.
3. Roughen surface and remove all unsound concrete.
4. The surface should be saturated with water, Saturated Surface Dry (SSD) with no puddling of water, prior to placement.
5. For optimal repairs in partial–depth repair applications, apply a cement/water slurry (batter–like mix of equal weights water to powder) to the repair surface immediately prior to placing the patch. Slurry must still be damp when patch is placed.

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

### 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 only the amount of material that can be placed within the 1 hour set–time. For best results, use a mechanical mixer. Approximately 4–5 pt. (1.9–2.3 L) of clean, potable water is required per 50 lb. (22.7 kg) bag for optimal workability. Water content may vary based on desired slump and ambient temperature. When using with Tenon™ Fast–Set Liquid Activator, refer to mixing instructions on the Fast–Set Liquid Activator data sheet.

1. Start with a clean mixer that has been wetted down but does not have any standing water.
2. Place water into mixer according to guidelines above.
3. Place desired number of bags in the mixer. Always use full bags only. Do not exceed mixer capacity.
4. Mix initially for about 3 minutes. Let mixture stand for 3 minutes. Mix again for 2 minutes. Designed slump is about 4–6 in. (10–15 cm). Targeted air content is 6.5% (±1.5%).

## Application

Apply only when air and substrate temperatures are between 50°F–90°F (10°C–32°C) within 24 hours of application and placement. Do not apply on substrates that are frozen or contain frost.

1. Shovel or place mixture immediately into pre–dampened or slurry coated prepared area. Use a latex bonding agent for improved bond if desired.
2. Once the mixture has been compacted and spread to completely fill forms or patch, strike off with a straight board or screed, moving the edge back and forth with a saw–like motion. Use a darby or bull float to level any ridges and fill voids left by the screed. Hard steel trowel finish is not recommended for air–entrained concrete.
3. Concrete shall be used and placed in final position within 1 hour after initial mixing or discarded at that time.
4. Allow the concrete to reach initial set, wait for all water to evaporate from the surface before finishing with a trowel or broom.
5. Can typically be opened to foot traffic in 6–8 hours, wheeled traffic in 24 hours. These times are typical for temperatures around 70°F (21°C). Set times and open times can double when material or substrate temperatures are around 50°F (10°C).
6. Do not retemper Air–Entrained Concrete Patching Mix AE. Do not overwork the concrete mixture.

## Curing

Always follow industry standard practices for finishing and curing concrete patches as described in ACI Manual of Concrete Practice.

### Refer to:

ACI 308 [Standard Practice for Curing Concrete](#)

## Cleaning

Use clean potable water to clean all tools immediately after use. Dried material must be mechanically removed. Use a waste water hardener (e.g. Conglez™ or similar product) for cementitious waste disposal.

## Limitations

- Apply only to surfaces that are frost free and above 50°F (10°C) and below 90°F (32°C) within 24 hours of application and 48 hours thereafter.
- Shade and protect patch in windy and/or hot weather conditions.

## 5. INSTALLATION

### Limitations (Cont.)

- During weather warm conditions, keeping mixing water and material cool should assist in maintaining open time of the product. During cold weather conditions, the use of warm mixing water and warming surfaces will accelerate set times.
- Do not over-work, over-water, retemper or overmix.
- Do not bridge over existing expansion or control joints.
- Do not mix more concrete than can be placed in 1 hour.
- Minimum depth is 1½ in. (38 mm).
- Tenon Air-Entrained Concrete Patching Mix AE should be installed in accordance with local building code provisions and all applicable ASTM standards.

### Coverage

Each 50 lb. (22.7 kg) bag yields approximately 0.375 cu. ft. wet (10.6 L); 72 bags will cover approximately 1 cu. yd. (0.76 m<sup>3</sup>).

## 6. AVAILABILITY

To locate Tenon products in your area, please contact:

Phone: 1.651.688.9116  
Website: 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.

## 8. MAINTENANCE

Not applicable.

## 9. TECHNICAL SERVICES

Technical Assistance:

Information is available by calling TCC Materials® (hours 7:30 AM to 4:00 PM, M-F, CST):

Phone: 1.651.688.9116

Fax: 1.651.688.6164

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

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



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