

1. PRODUCT NAME

Tenon[®] Concrete Patching Mix

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[®] Concrete Patching Mix is a dry mixed combination of Portland Cement and aggregates that is proportioned and manufactured according to MnDOT specification 3105 for grade 3U18. When mixed according to specifications with water and admixtures, it is an ideal mixture for repairing concrete pavement, industrial floors, and structural concrete.

Features and Benefits

- Pre-blended concrete mixture
- High compressive strength
- Excellent durability
- Freeze/thaw resistant (when used with Air Entraining Admixture and water reducing admixture)

*Call TCC Materials for state DOT approvals

Uses

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

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 651-688-9116 (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

Typical Values • Tenon Concrete Patching Mix		
	Mixed with water only	Mixed with Air Entraining Admixture and water reducing admixture
Unit Weight	147.2 lb./ft ³	145.8 lb./ft ³
Air Content	3.1%	5.9%
Slump	1 in. (25 mm)	1 in. (25 mm)
Water/Cement Ratio	0.385	0.345
Initial Set (hr:min)	~ 3:00	3:15
Final Set (hr:min)	~ 4:40	4:15
Compressive Strength ASTM C 39 (Moist Cured)		
24 hours	4,400 psi (30.3 MPa)	5,230 psi (36 MPa)
3 days	6,150 psi (42.4 MPa)	7,170 psi (49.4 MPa)
7 days	7,090 psi (48.9 MPa)	8,290 psi (57.1 MPa)
28 days	7,820 psi (53.9 MPa)	8,390 psi (57.8 MPa)
Flexural Strength ASTM C 78 (Moist Cured)		
7 days	840 psi (5.8 MPa)	1,035 psi (7.1 MPa)
28 days	1,060 psi (7.3 MPa)	1,055 psi (7.3 MPa)
Rapid Chloride Permeability ASTM C 1202		
RCP 28 day	2,400 C	1,191 C
RCP 56 day	1,174 C	1,153 C

Complies with ASTM C387

Test results obtained under controlled laboratory conditions. Reasonable variations can occur due to atmospheric and job site conditions.

LEED® Eligibility¹

- Regional Materials (MR-c4, MR-c5)

Packaging

50 lb. (22.7 kg.) bag (BOM #126198)

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 3U18 patching mixes

5. INSTALLATION

Preparation

All materials should be conditioned to 50°-75°F (4°-24°C) 24 hours prior to installation. Proper surface repair preparation is crucial to achieving a successful application.

1. All concrete surfaces must be fully cured, structurally sound, and non-flexing.
2. Clean area and remove 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

Mixture should be placed within 60 minutes of batching. For best results use a concrete drum mixer or a paddle mixer. For concrete that will be exposed to freezing and thawing, use an Air Entraining Admixture meeting ASTM C260, such as Tenon® Air Entrainment, and use a High Range Water Reducing Admixture meeting ASTM C494 Type F. Admixtures should be dosed based on manufacturer's recommendations and should be verified with test batches. Concrete should obtain 1 in. (25 mm) maximum slump and 6.5% air and should not use more than 4.75 pints of water per 50 lb. bag. Use of less water will result in higher compressive strength.

1. Start with a clean mixer that has been wetted down but does not have any standing water.
2. Place water and admixtures into mixer according to guidelines listed above. Mixing the admixtures thoroughly into the mix water will help evenly disperse them and aid with mixture consistency.
3. Place desired number of bags in the mixer. Always use full bags only. Do not exceed mixer capacity
4. Mix 3-5 minutes to a uniform, lump free consistency
5. Maintain water content, admixture dosages and mixing time from batch to batch to ensure product consistency.

If concrete mixture will be placed in an interior application, water reducer and air entrainment are not required for concrete durability. In that case, use the same mixing steps as listed above, but Maintain water and mixing time consistency among batches. but use 4-5 pints of water per bag (adjust water content to get 1 in. (25 mm)" slump).

Application

Apply only when air and substrate temperatures are between 50°-90°F (10°-32°C) within 24 hours of application and placement, and when rain is not forecast 24 hours after.

1. Shovel or place mixture immediately into pre-dampened prepared area. Application should be between 1½ in. (38 mm) to full depth.
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.
3. Concrete shall be used and placed in final position within 1 hour after initial mixing or discarded at that time under normal temperatures. Warm temperatures will accelerate set.
4. Allow the concrete to reach initial set, wait for all water to evaporate from the surface before finishing with a trowel or broom. Can be open to foot traffic in 6 hours, wheeled traffic in 24 hours.
5. Do not retemper Concrete Patching Mix. 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 fully cured, 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.
- 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 should 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.
- Tenon® Concrete Patching Mix 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).

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, M-F, 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

¹Tenon™ 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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