

1. PRODUCT NAME

Tenon[®] Mighty Bond[™]

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[®] Mighty Bond[™] is a high solids acrylic liquid bonding agent used as an admixture to substantially improve adhesion, impact, shear bond, tensile, flexural, and compressive strength of non-modified cement based mortars, repair products, tile setting mortars, and grout products. When used as directed, Tenon[®] Mighty Bond[™] also improves workability, extends open time/pot life, freeze/thaw and salt resistance, reduces the potential for efflorescence, and has excellent UV resistance. Concentrated with a high-solids content, in many applications, it can be diluted with clean water at the job site for extra convenience and savings. TN Mighty Bond can also be used as a paint-on bonding agent to improve the adhesion of the new repair material to the existing surface.

Features and Benefits

As a concrete bonding additive:

- Improves bond strength
- Interior or exterior

As a cement additive in non-modified mixes:

- Solvent free/VOC compliant
- Increases tensile strength
- Enhances adhesion and durability
- Improves workability
- Improves curing
- Interior or exterior
- Exceeds the physical property requirements stated in ASTM C1059 *“Standards Specification for Latex Agents for Bonding Fresh to Hardened Concrete”*
- MN DOT approved on list of *“Special Surface Finish System”*
- Versatile for using with mortars, patches, grouts, and underlayments

Uses

As a surface applied bonding additive:

- Concrete
- Cement based materials

As a cement additive in non-modified mixes:

- Portland cement/masonry products
- Portland cement-based repair products
- Portland cement-based grouts

As a tile setting mortar additive:

- Additive for non-modified tile setting mortars
- Walls, floors, or ceilings
- Sets most types of ceramic tile or stone
- Excellent adhesion to exterior grade plywood
- Reduces water absorption
- Exceeds ANSI A118.4 and A118.11

Uses

As a tile setting mortar additive for installation of:

- Ceramic, porcelain, glass, quarry tile, and pavers
- Non-moisture sensitive marble and slate
- Cement tile

As a tile setting mortar additive for installation over:

- Concrete
- Tile backerboard
- Gypsum wall board (walls only)
- Properly prepared cut back adhesive
- Tenon[®] Waterproofing & Crack Isolation Membrane
- Properly prepared resilient flooring
- Exterior grade plywood (interior floors only)
- Properly cured and finished concrete
- Properly prepared tile
- Properly prepared VCT
- Wherever latex tile setting mortars are specified.

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.

Tests	Base Mix 3 to 1 - sand/cement ratio (102127)	Base Mix 2 to 1 - sand/cement ratio (100521)
Compressive Strength, psi (ASTM C39)		
1 day avg.	1,830 psi (12.6 MPa)	3,110 psi (21.44 MPa)
3 day avg.	2,700 psi (18.6 MPa)	4,680 psi (32.2 MPa)
7 day avg.	3,860 psi (26.6 MPa)	6,170 psi (42.5 MPa)
28 day avg.	4,750 psi (32.75 MPa)	7,360 psi (50.7 MPa)
Tensile Strength, psi (ASTM C190)		
28 day avg.	202 psi (1.39 MPa)	364 psi (2.5 MPa)
Bond Strength, psi (ASTM C1042)		
28 day avg. (air cured)	750 psi (5.17 MPa)	1,030 psi (7.1 MPa)
28 day avg. (water cured)	1,400 psi (9.6 MPa)	1,910 psi (13.1 MPa)

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.

LEED® Eligibility¹

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

Packaging

- 1 gal. (3.78 L) bottle – BOM # 120525
- 5 gal. (18.93 L) pail—BOM # 120526
- 55 gal. (208 L) drum—BOM # 130020

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 dry at 40°F-95°F (4°C-35°C).

5. INSTALLATION

Preparation

- Surface must be clean, dry, hard, and free from dirt, loose particles, wax, sealers, curing compounds, efflorescence, grease, paint, and any foreign materials that will inhibit adhesion.
- Existing concrete floors should be free of hydrostatic pressures, and efflorescence.
- Walls and floors must be structurally sound, free of movement, and dimensionally stable.

- Sandblast, hammer, or chip out any loose or poorly bonded substrates prior to making repairs in existing concrete.
- Always follow the preparation steps for the product being modified with Mighty Bond™.
- Surfaces to receive tile shall be plumb and true with square corners. Maximum variation from the required plane shall be: Subfloor Surfaces – ¼ in. (6 mm) in 10 ft. (3 m) for tile less than 15 in. (381 mm) on any one side and the required plane shall be ⅛ in. (3 mm) in 10 ft. (3 m) for tile 15 in. (381 mm) or greater on any one side.
- Concrete floors must be fully cured (28 days) and have a fine broom finish. Sprinkle water on the substrate in various areas looking for penetration. If water droplet or beading of water is noticed then surface contaminants are present that will cause loss of adhesion and must be removed. Smooth troweled surfaces should be scarified to assure bond. Inspect the surfaces that will receive the mortar mixture and the tools used to install it.

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

Typical Mix Ratios	Mix Ratio		Total Liquid
	Water	Mighty Bond™	
<i>Product</i>	<i>Typical Quarts (L) of Liquid</i>		
80 lb. (36.3 kg) Mortar Mix	3¾ qt. (3.5 L)	1¼ qt. (1.1 L)	≈ 5 qt. (4.7 L)
60 lb. (27.2 kg) Mortar Mix	3 qt. (2.8 L)	1 qt. (0.95 L)	≈ 4 qt. (3.78 L)
60 lb. (27.2 kg) Concrete Mix	1 ¾ qt. (1.65 L)	1 ¾ qt. (1.65 L)	≈ 3 ½ qt. (3.5 L)
60 lb. (27.2 kg) Sand Mix	2 ¼ qt. (2 L)	2 ¼ qt. (2 L)	≈ 4 ½ qt. (4.25 L)
50 lb. (22.7 kg) Thinsset Mortar	none	8.5 qt. (8 L)	≈ 8.5 qt. (8 L)

Depending on the project or product needs, dilute the Mighty Bond™ according to the guidelines below:

- Slowly stir Tenon® Mighty Bond™ before use. Do not create bubbles or foaming by shaking the product.
- When diluting, always use cool, clean, potable water in the range of 50°-80°F (10°-27°C).

Mixing (cont.)

- Protect new surfaces from use until material is completely hard and set.
- Always use clean tools and mixing containers.
- Refer to the respective mortar, repair product, tile setting mortar, or grout manufacturer's instructions for recommended mixing ratios for latex and powder.

Mixing as a tile setting mortar additive:

1. Mighty Bond is formulated in the correct proportions for use in tile setting mortars. Mix latex well before using. Do not dilute.
2. Add just enough dry tile setting mortar to the Mighty Bond to produce a thick but trowelable consistency or as described in the Tenon® tile setting mortar product literature.
Troweled ridges should not flow or slump.
3. Mix thoroughly. Let stand 10 minutes to give all chemicals time to slake. Remix and use. Do not add more Mighty Bond or dry materials after slaking.
4. Do not mix with a high-speed power mixer. High-speed mixing tends to beat in air and reduce the strength of the mortar.
5. Working life in the bucket is approximately 2 - 3 hours.

Mixing as a cement additive:

Refer to the individual cement mortar (s) product manufacturer's instructions for recommended mixing ratios of latex and powder.

Note: When higher physical performance is required, the ratio of Mighty Bond™ may be increased to meet project requirements.

Job site factors such as substrate, horizontal, or vertical application, weather conditions, etc., should be taken into consideration

Application

Apply only to surfaces that are frost free and above 40°F (4°C) and above 100°F (38°C) within 24 hours of application and 72 hours thereafter, and when rain would not fall on the surface within 24 hours of application.

Refer to the individual cement mortar (s) product manufacturer's instructions for specific application instructions.

Paint-on bonding agent:

- Apply undiluted in a uniform manner, like a coat of paint. Use a roller, brush, or spray with back rolling to achieve a uniform, continuous film over the entire surface at a rate of 200-350ft²/gal. The coverage rate will vary depending upon porosity of the substrate. Very porous concrete may require two coats.
- TN Mighty Bond should still be tacky when applying the topping. Do not allow the surface to become dry. If this happens, apply another coat of TN Mighty Bond.
- It is recommended that the surface be inspected to verify continuous film coverage before installation of the surface material.

Tile Setting Products:

Installation must conform to the current specifications in ANSI A108.5 and the TCNA Handbook for Ceramic Tile Installations.

1. Select the proper trowel size: The proper trowel is one that will ensure the bond coat after the tile is embedded, shall be 3/32 in. (6.4 mm). The proper trowel should also result in a minimum of 80% coverage, 95% when used on exterior or in wet areas or with marble and natural stone.
2. With pressure, apply a skim coat to the substrate with the flat edge of the trowel.
3. Comb the mortar in one direction with the recommended notched trowel, only that part of the bed that can have tile put on it before skinning occurs. If skinning occurs, scrape and discard skinned mortar.
4. Press tile into place and slide perpendicular to the ridges to insure proper coverage.
5. Tile may be adjusted up to 15 minutes after placing.
6. Tile floor must be firmly set before grouting. This requires at least 16 - 24 hours.

Limitations

- High relative humidity, excessive moisture and low temperatures will retard the curing of Tenon® Mighty Bond™.
- Do not use if the temperature is below 40°F (4°C) or above 100°F (38°C).
- Do not apply to a frozen or frosted surface or if the surface temperature will drop below 40°F (4°C) for the initial 72 hours.
- Use only with non-modified mixes, mortars, and grouts.
- Do not use air-entrained cement mixes or with air-entraining admixtures without testing first. Adjustment of air-entrainment may be required
- Do not over mix or aerate mixes.
- Use with proper ventilation.
- Shade and protect patch repairs in windy and/or dry hot weather.
- Do not use for moisture sensitive stone, resin backed tiles or cultured marble. Do not soak tile.
- Do not use over oriented strand board (OSB), hardwood flooring, metal, or any other dimensionally unstable substrate.
- Do not add latex or dry material after the tile setting mortar has slaked.
- Do not adjust tile mortar after its initial set.
- Do not allow material to freeze—once it freezes it will not work properly upon thawing. Discard material that has frozen.
- Do not use on surfaces that have hydrostatic pressure.

Curing

Refrain from using curing/sealing compounds over patching materials for a minimum of 2 weeks. Areas in which tile is being set shall be closed to traffic and all other work. Light traffic is not permissible until 16-24 hours after completion, and heavy traffic not until seven days.

Cleaning

Use water to clean all tools immediately after use. Dried material must be mechanically removed.

Coverage

Consult the product information sheet for the respective mortar, repair product, tile setting mortar, or grout.

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.

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 9

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

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



Bluestone Products®
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