



257 TITANIUM™

DS-292.0-1017

**Globally Proven
Construction Solutions**



1. PRODUCT NAME

257 TITANIUM™

2. MANUFACTURER

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3. PRODUCT DESCRIPTION

The ultimate, lightweight one-step, polymer fortified, thin-set mortar that is ideal for the installation of Gauged Porcelain Tile Panels/Slabs (GPTP) as well as for interior and exterior installation of ceramic tile, porcelain tile, stone, quarry tile, pavers and brick. 257 TITANIUM™ is designed with key features to facilitate the installation of Gauged Porcelain Tile Panels including long open time, superior transfer for maximum coverage, easy to spread creamy consistency and a lightweight formula for easier handling. 257 TITANIUM also utilizes LATICRETE HYDROMATIC CURE CHEMISTRY™. This technology accelerates the hydration process to rapidly consume the water in the system, allowing the material to cure in a predictable manner. This is particularly advantageous when installing materials such as uncoupling membranes and Gauged Porcelain Tile Panels/slabs. 257 TITANIUM is free of silica sand, features unsurpassed bond strength exceeding ANSI A118.15 requirements and is a functional equivalent to 254 PLATINUM Multipurpose thin-set mortar.

Uses

The ultimate adhesive for installing Gauged Porcelain Tile Panels/Slabs porcelain and glass tile as well as exterior and submerged applications. The ultimate thin-set for porcelain, thin porcelain, and glass tiles.

Advantages

- Optimal performance for Gauged Porcelain Panels/Slabs.
- Equipped with anti-microbial technology.

- Lightweight- 25 lb (11.3 kg) bag has coverage of 50 lb (22.7 kg) traditional mortar.
- Exceeds ANSI A118.4, A118.11 and ANSI A118.15.
- Contains no silica sand.
- ASTM C627 Extra Heavy (TCNA)
- Conforms to ISO 13007-1 with a classification of C2ES1P1.
- LATICRETE HYDROMATIC CURE CHEMISTRY™
- 60 minute open time.
- Ultimate adhesion for porcelain and glass tiles.
- Incredible bond to exterior glue plywood and concrete*.
- Superior for exterior and submerged applications.
- High shear bond strength.
- Smooth creamy, lightweight formula.
- 25 Year System Warranty**.
- Unique color options are now available in all LATICRETE® grout colors when mixed with PERMACOLOR® Select Color Kits[‡] (257 TITANIUM white only)

* See limitations.

** When used as part of the LATICRETE 25 Year System Warranty DS 025.0.

[‡] LATICRETE makes no guarantee on color match to our grout color card and color tools. This process/method can be used to create a colored adhesive mortar to facilitate the installation of translucent, transparent, opaque glass mosaics and other finishes where cleaning thin set mortar out of the joints is a challenge. Do not use colored adhesive mortar as a substitute for grout. Always conduct a test area to validate performance and results.

Suitable Substrates

- Exterior Glue Plywood[^]
- Properly Prepared Vinyl Tile[^]
- Concrete/Masonry
- Concrete Block
- Cement Plaster
- Cement Mortar Beds
- Non-Water Soluble Cut-Back Adhesive^{**}
- Cement Terrazzo
- Cement Backer Boards^{^^}
- Gypsum Wallboard[^]
- Gypsum Plaster^{*}
- Plastic Laminate[^]
- Existing Ceramic Tile and Stone
- STRATA_MAT™^{**}

[^] Interior use only.

^{^^} Consult cement backer board manufacturer for specific installation recommendations and to verify acceptability for exterior use.

Packaging

25 lb bag (11.3 kg); 56 bags per pallet

Color: Grey and White

Approximate Coverage

80–95 ft ² / 25 lb bag (7.4–8.8 m ² /11.3 kg bag) with 1/4" x 1/4" (6 mm x 6 mm) notched trowel.
60–70 ft ² / 25 lb bag (5.6–6.5 m ² /11.3 kg bag) with 1/4" x 3/8" (6 mm x 9 mm) notched trowel.
35–40 ft ² / 25 lb bag (3.2–3.7 m ² /11.3 kg bag) with 1/2" x 1/2" (12 mm x 12 mm) notched trowel.

Coverage will vary depending on trowel notch size, type and size of tile and substrate.

For Installing STRATA_MAT™ or HYDRO BAN® Sheet Membrane (105-115ft² / 25 lb bag (9.7-10.6 m²/ 11.3 kg bag) with ¼ " x 3/16" (6mm x 5mm) notched trowel

Shelf Life

Advanced plastic bag provides two (2) year shelf life.

***High humidity will reduce the shelf life of bagged product.

Limitations

- For exterior veneer installations using this product, consult local building code requirements regarding limitations and installation system specifications.
- Not for use directly over particle board, luan, Masonite® or hardwood floors.
- Adhesives/mastics, mortars and grouts for ceramic tile, pavers, brick and stone are not replacements for waterproofing membranes. When a waterproofing membrane is required, use a LATICRETE® Waterproofing Membrane (see Section 10 FILING SYSTEMS).

Note: Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile, thin brick and similar finishes. Substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/360 for thin bed ceramic tile/brick installations or L/480 for thin bed stone installations where L=span length (except where local building codes specify more stringent deflection requirements)

Cautions

Consult SDS for more safety information.

- Some marbles and other stone have low flexural strength and may not be suitable for installation over wood floors.
- During cold weather, protect finished work from traffic until fully cured.
- Wait 14 days after the final grouting period before filling water features with water at 70°F (21°C).
- DO NOT take internally.
- For white and light-colored marbles use white 257 TITANIUM™. For green marble, resin backed tile and stone and other moisture sensitive marbles and agglomerates, use LATAPOXY® 300 Adhesive (refer to Data Sheet 633.0).
- Keep out of reach of children.

4. TECHNICAL DATA



This product has been certified for Low Chemical Emissions (ULCOM/GG UL2818) under the UL GREENGUARD Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings (UL 2818 Standard) by UL Environment.

Data Sheets are subject to change without notice. For latest revision, visit www.laticrete.com or email technical.services@laticrete.com

Total VOC Content of product in unused form is 0.00 g/L.



This product has a cradle-to-gate (with options) Product-Specific (Type III) Environmental Product Declaration. The PCR review, life cycle assessment and declaration were independently verified by UL Environment in accordance with ISO 14025, ISO 14040 and ISO 14044.

Applicable Standard

ANSI A118.4, ANSI 118.11, ANSI 118.15, EN 12004, ISO 13007

Physical Properties

Test	Test Method	Results	Specification
28 day Cure Porcelain Tile Shear Strength	ANSI A118.15 7.2.5	475–575 psi (3.3–4.0 MPa)	>400 psi (2.76 MPa)
Shear Bond Porcelain Tile Water Immersion	ANSI A118.15 7.2.4	250-350 psi (1.7-2.4 MPa)	>200 psi (1.38 MPa)
28 day Heat Aging Tile Shear Strength	ANSI A118.15 7.2.7	600-700 psi (4.1-4.8 MPa)	>400 psi (2.76 MPa)
28 day Cure Quarry Tile to Plywood Shear Bond	ANSI A118.11 4.1.2	250-300 psi (1.7-2.1 MPa)	>150 psi (1.0 MPa)

Test	Test Method	ISO 13007-1 C2 Specification	Results
28 Day Cure Tensile Adhesive Strength	ISO 13007-2 4.4.2	1 MPa (145 psi)	2.0 – 2.5 MPa (290-362 psi)
7 Day Cure 21 Day Water Immersion Tensile Adhesive Strength	ISO 13007-2 4.4.3	1 MPa (145 psi)	1.3-1.6 MPa (174-232 psi)
14 Day Cure 14 Day Heat Age Tensile Adhesive Strength	ISO 13007-2 4.4.4	1 MPa (145 psi)	2.4-3.0 MPa (345-438 psi)
7 Day Cure 21 Day Water Immersion 25 Freeze/Thaw Cycle Tensile Adhesive Strength	ISO 13007-2 4.4.5	1 MPa (145 psi)	1.5-2.4 MPa (217-348 psi)
Transverse Deformation	ISO 13007-2 4.5	Greater than or equal to 2.5 mm (0.1 in.) and less than 5 mm (0.2 in.)	4.0-4.5 mm (0.15-0.17 in.)

257 TITANIUM™ is ISO 13007-1 C2ESTP1

Working Properties

Open Time	60 minutes
Pot Life	2-4 hours
Time to Heavy Traffic	24 hours

Specifications subject to change without notification. Results shown are typical but reflect test procedures used. Actual field performance will depend on installation methods and site conditions.

5. INSTALLATION

Surface Preparation

All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free of all dirt, oil, grease, paint, concrete sealers or curing compounds. Rough or uneven concrete surfaces should be made smooth with Latex Portland Cement Underlayment to provide a wood float (or better) finish. Dry, dusty concrete slabs or masonry should be dampened and excess water swept off. Installation may be made on a damp surface. Concrete slabs must be plumb and true to within 1/4" (6 mm) in 10 ft (3 m).

Note: 257 TITANIUM™ does not require a minimum cure time for concrete slabs. Expansion joints shall be provided through the tile work from all construction or expansion joints in the substrate. Follow ANSI specification A108.01-3.7 "Requirements for Movement Joints: Preparations by Other Trades" or TCNA detail EJ-171 "Movement Joints—Vertical & Horizontal". Do not cover expansion joints with mortar.

1. Installer must verify that deflection under all live, dead and impact loads of interior plywood floors does not exceed industry standards of L/360 for ceramic tile and brick or L/480 for stone installations where L=span length.
2. Minimum construction for interior plywood floors.
SUBFLOOR: 5/8" (15 mm) thick exterior glue plywood, either plain with all sheet edges blocked or tongue and groove, over bridged joints spaced 16" (400 mm) o.c. maximum; fasten plywood 6" (150 mm) o.c. along sheet ends and 8" (200 mm) o.c. along intermediate supports with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) between sheet ends and 1/4" (6 mm) between sheets edges; all sheet ends must be supported by a framing member; glue sheets to joints with construction adhesive.
UNDERLAYMENT: 5/8" (15 mm) thick exterior glue plywood fastened 6" (150 mm) o.c. along sheet ends and 8" (200 mm) o.c. in the panel field (both directions) with 8d ring-shank, coated or hot dip galvanized nails (or screws); allow 1/8" (3 mm) to 1/4" (6 mm) between sheets and 1/4" (6 mm) between sheet edges and any abutting surfaces; offset underlayment joints from joints in subfloor and stagger joints between sheet ends; glue underlayment to subfloor with construction adhesive. Refer to Technical Data Sheet 152 Bonding Ceramic Tile, Stone or Brick over Wood Floors for complete details.

Mixing

Place clean, potable water into a clean pail. Use approximately 4.6 - 4.8 qts (4.4 - 4.5 L) of water for 25 lbs (11.3 kg) of powder. When using to install Gauged Porcelain Tile Panels/Slabs use up to 5 qts (4.7 L) of water for 25 lbs (11.3 kg) of powder. Add 257 TITANIUM™. Mix to a smooth, trowelable consistency. Allow mortar to slake for 5–10 minutes. Remix with out adding any more water or powder. During use, stir occasionally to keep mix fluffy. DO NOT temper with water.

Mixing with PERMACOLOR® Select Color Kits (257 TITANIUM white only)

Requires 2 PERMACOLOR® Select Color Kits. (Each Color Kit contains 2 individual color packets, use all 4 color packets) Place water in a clean mixing container. Remove color packets from the

cardboard container as well as the protective plastic sleeve. The internal bag is a water dispersible packet – when using the 25 lbs. (11.3 kg) bag of 257 TITANIUM, drop all color packs directly in to water in clean mixing container. Mix with a drill mixer until pigment is dispersed evenly in container and the dispersible packet is no longer visible. Add 257 TITANIUM and mix as directed above. Please note that additional water may be necessary when using PERMACOLOR Select color Kits.

Application

Apply mortar to the substrate with the flat side of the trowel, pressing firmly to work into surface. Comb on additional mortar with the notched side.

Note: Use proper sized notched trowel to ensure full bedding of the tile. Spread as much mortar as can be covered with tile in 15–20 minutes. Back butter large tiles >8" x 8" (>200 mm x 200 mm) to provide full bedding and firm support. Place tiles into wet, sticky mortar and beat in using a and rubber mallet and/or slide the tile back and forth to embed tile and adjust level. Check mortar for complete coverage by periodically removing a tile and inspecting bedding mortar transfer onto back of tile. If mortar is skinned over (not sticky), remove and replace with fresh mortar.

Grouting

Grout installation after a minimum of 24 hours curing time at 70°F (21°C). Grout with SPECTRALOCK®+ PRO Premium Grout†, SPECTRALOCK PRO Grout†, PERMACOLOR Select™ or PERMACOLOR Grout™

Cleaning

Clean tools and tile work with water while mortar is fresh.

6. AVAILABILITY AND COST

Availability

LATICRETE® and LATAPOXY® materials are available worldwide.

For Distributor Information, Call:

Toll Free: 1.800.243.4788

Telephone: +1.203.393.0010

For on-line Distribution information, visit LATICRETE at www.laticrete.com

Cost

Contact a LATICRETE/LATAPOXY Distributor in your area.

7. WARRANTY

See 10. FILING SYSTEM

DS 230.13: LATICRETE Product Warranty

A component of:

DS 230.05: LATICRETE 5 Year System Warranty (United States and Canada)

DS 230.10: LATICRETE 10 Year System Warranty (United States and Canada)

DS 230.15: LATICRETE 15 Year System Warranty – For Steel or Wood Framed Exterior Facades (United States and Canada)

DS 025.0: LATICRETE 25 Year System Warranty (United States and Canada)

DS 230.99: LATICRETE Lifetime System Warranty

8. MAINTENANCE

Non-finish LATICRETE and LATAPOXY installation materials require no maintenance but installation performance and durability may depend on properly maintaining products supplied by other manufacturers.

9. TECHNICAL SERVICES

Technical Assistance

Information is available by calling the LATICRETE Technical Service Hotline:

Toll Free: 1.800.243.4788, ext. 235
Telephone: +1.203.393.0010, ext. 235
Fax: +1.203.393.1948
Email: technical.services@laticret.com
Web Chat @www.laticrete.com

Technical and Safety Literature

To acquire technical and safety literature, please visit our website at www.laticrete.com.

10. FILING SYSTEM

Additional product information is available on our website at www.laticrete.com. The following is a list of related documents:

DS 230.13: LATICRETE® Product Warranty
DS 230.05: LATICRETE 5 Year System Warranty (United States and Canada)
DS 230.10: LATICRETE 10 Year System Warranty (United States and Canada)
DS 230.15: LATICRETE 15 Year System Warranty – For Steel or Wood Framed Exterior Facades (United States and Canada)
DS 025.0: LATICRETE 25 Year System Warranty (United States and Canada)
DS 230.99: LATICRETE Lifetime System Warranty
DS 250.0: PERMACOLOR® Grout^{^^^}
DS 260.0: STRATA_MAT™^{**}
DS 281.0: PERMACOLOR Select^{^^^}
DS 410.0: HYDRO BAN® Sheet Membrane
DS 633.0: LATAPOXY® 300 Adhesive
DS 663.0: HYDRO BAN
DS 681.0: SPECTRALOCK® PRO Premium Grout[†]
DS 685.0: SPECTRALOCK PRO Grout[†]
TDS 170: Installing Gauged Porcelain Tile Panels/Slabs
TDS 152: Bonding Ceramic Tile, Stone or Brick over Wood Floors

^{^^^}United States Invention Patent No.: 6,784,229 (and other Patents)

[†]United States Invention Patent No.: 6,881,768 (and other Patents).

^{**}United States Patent No.: 9,016,018B2 (and other Patents).