MAPEI Ultralite S2

Premium, Highly Deformable, Lightweight, Gauged-Tile Mortar with Polymer

DESCRIPTION

MAPEI Ultralite® S2 is a premium-grade, lightweight, single-component thin-set mortar that is ideal for installation of gauged (formerly "thin") porcelain tile. This high-performance, highly deformable, polymer-modified mortar is formulated with Easy Glide Technology™ for ease of application. *MAPEI Ultralite S2* features a long open time and superior transfer properties to enhance back-buttering, and can be used also for ceramic tile and stone. *MAPEI Ultralite S2*'s unique Ultralite Technology™ provides twice the coverage of a standard thin-set mortar per pound/kg and may contribute to LEED points with 20% recycled content.

FEATURES AND BENEFITS

- Polymer-enriched for high performance and deformability
- Extended coverage formula for most types and sizes of gauged tiles
- Smooth, creamy consistency with easy-glide troweling
- 25-lb. (11.3-kg) bag provides the same coverage as a 50-lb. (22.7-kg) bag of a standard polymer-modified mortar
- Superior transfer promotes full coverage for tile panels
- Excellent wet-out characteristics promote bonding.
- Extended open time, adjustability and pot life
- Contains recycled material

INDUSTRY STANDARDS AND APPROVALS

- ISO 13007: Classification C2ES2P2
- ANSI: Exceeds A118.4HE, A118.11, A118.15HE standards
- SCS Green Squared Certified per ANSI A138.1
- Certified in the USA and E.U., by RINA, to be in compliance with IMO Res. MSC.307(88)-(2010 FTP Code), the International Maritime Organization code for low-flame spread primary deck coverings

WHERE TO USE

- Most interior/exterior residential installations on floors and walls
- Most interior/exterior commercial installations on floors and walls, including exterior facades
- Installation of most types and sizes of gauged tiles
- Installations of ceramic and porcelain tile, large-format tile and most types of marble, granite and natural stone
- Areas exposed to intermittent water, such as shower walls and floors
- Steam rooms

LIMITATIONS

- Install only at temperatures between 40°F and 95°F (4°C and 35°C).
- Do not use for moisture-sensitive stone (green marble; some limestone and some granite), agglomerate tiles made of moisture-sensitive stone pieces, or resin-backed tiles. Instead, use suitable epoxy or urethane adhesives. (See the respective Technical Data Sheets for details.) For recommendations regarding resin-backed tile, contact MAPEI's Technical Services Department.
- For light-colored and translucent natural stone, a white mortar is recommended.
- Do not use over dimensionally unstable substrates such as hardwood flooring, oriented strand board (OSB), substrates containing asbestos, or metal. See the "Suitable Substrates" section below.
- To use directly over gypsum-based patching or leveling substrates, apply a suitable primer/sealer before use. See the "Tiling over gypsum" technical bulletin in the Tile & Stone Installation Systems section of MAPEI's Website.
- Consult building code requirements for use on exterior commercial facades.
- Installations of tile over nonporous surfaces – such as waterproofing, crack-isolation, sound-reduction and uncoupling membranes and existing tile – may require extended setting/curing times. Dimensionally weak stone (limestone, travertine) is limited to thin-set applications only.
- Do not use for installations subjected to water immersion, such as pools and spas.
- Do not use for transparent or translucent glass tile.
- The maximum embedded thickness is 3/8" (10 mm).

SUITABLE SUBSTRATES

- Concrete (cured for at least 28 days)
- Masonry cement block, brick, cement mortar beds, render coats and leveling coats
- Cement backer units (CBU) – see manufacturer's installation guidelines

- Gypsum wallboard and plaster – interior walls in dry areas only (priming may be required). See the “Surface preparation requirements” reference guide in the Tile & Stone Installation Systems section of MAPEI’s Website.
- Plywood underlayments must be a Group 1 exterior-grade plywood CC-plugged or better, conforming to APA classification and U.S. Product Standard PS 1-95 or a “SELECT” or (SEL-TF) CANPLY classified exterior-grade plywood conforming to CSA-0121 standard for Douglas fir for direct-bond applications (interior, residential and light commercial floors and countertops in dry conditions only).
- Existing ceramic and porcelain tile, cement terrazzo, quarry tile and pavers (interior in dry conditions only)
- MAPEI waterproofing, crack-isolation, sound-reduction and uncoupling membranes
- Vinyl composition tile (VCT) and cutback residue (interior only)

Consult MAPEI’s Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

- All substrates should be structurally sound, stable, dry, clean and free of any substance or condition that may reduce or prevent proper adhesion.
- Substrates to receive gauged porcelain tiles must follow ANSI A108.19 2017 standard (“Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar”) per maximum allowable variation in flatness for surfaces to receive gauged porcelain tiles or gauged porcelain tile panels/slabs of 1/8" in 10 feet (3 mm in 3.05 m) and 1/16" in 2 feet (1.5 mm in 0.61 m) from the required plane when measured from the high points in the surface. When installing gauged porcelain tile, consult the recommendations regarding surface preparation, trowel selection and mechanical edge-leveling systems in MAPEI’s reference guides "Gauged porcelain tile panels/slabs” for walls and floors. These reference guides can be found in the Tile & Stone Installation Systems section of MAPEI’s Website.

See the “Surface preparation requirements” reference guide in the Tile & Stone Installation Systems section of MAPEI’s Website.

MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

1. Into a clean mixing container, pour about 4 to 4.5 U.S. qts. (3.79 to 4.26 L) of clean, potable water. To achieve the desired consistency and working properties, mix with the recommended water amounts.
2. Gradually add 25 lbs. (11.3 kg) of powder while slowly mixing.
3. Use a low-speed mixing drill (at about 300 rpm), with an angled cross-blade mixer or spiral mixer. Mix thoroughly for 3 minutes or until the mixture becomes a smooth, homogenous, lump-free paste.
4. Avoid prolonged mixing.
5. Let the mixture stand (“slake”) for 5 minutes.
6. Remix for about 2 minutes.
7. If the mixture becomes heavy or stiff, remix without adding more liquid.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. For traditional tiles: Choose a notched trowel (see the “Approximate Coverage” chart below) with sufficient depth to achieve more than 80% mortar contact to both the tile and substrate for all interior applications, and more than 95% for exterior installations, and wet applications. It may be necessary to back-butter tiles in order to meet these requirements. (Refer to ANSI A108.5 specifications and TCNA handbook guidelines.)

   For gauged tiles: These applications have more stringent coverage requirements. Refer to MAPEI’s reference guides "Gauged porcelain tile panels/slabs” for walls and floors. These reference guides can be found in the Tile & Stone Installation Systems section of MAPEI’s Website.

2. With pressure, apply a coat by using the trowel’s flat side to key the mortar into the substrate.
3. Apply mortar to the substrate (and, if applying gauged tile, to the back of the tile), combing it in a single direction parallel to the tile’s shortest dimension, with the trowel’s notched side. If gauged tile is being installed, it should be placed so that the troweled ridges on its back are oriented in the same parallel direction as the trowel ridges on the substrate.
4. Mortar should be applied and notched to both the substrate and back of the tile. When tile is placed, care must be taken to ensure maximum coverage, avoiding air pockets and voids under the tile.
5. Spread only as much mortar as can be tiled before the product skins over. Open time can vary with jobsite conditions.
6. Place the tiles firmly into the wet mortar. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between the mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage.
7. Remove excess mortar from the joint areas so that at least 2/3 of the tile depth is available for grouting (see ANSI A108.10 guidelines).

EXPANSION AND CONTROL JOINTS

- Provide for expansion and control joints as specified per TCNA Method EJ171 or TTMAC Specification Guide 09 30 00 Detail 301MJ. Do not cover expansion joints with mortar.

CLEANUP

- Use water only to clean tools and tile while the mortar is fresh.

PROTECTION

- Protect from light traffic for 24 to 48 hours, so that the mortar is sufficiently set.
- Protect from heavy traffic for 7 days.
- Protect from rain or frost for 7 days.

ISO 13007 Classification

Classification Code	Classification Requirement
C2 (cementitious, improved adhesive)	≥ 145 psi (1 MPa) after standard aging, heat aging, water immersion and freeze/thaw cycles
E (extended open time)	≥ 72.5 psi (0.5 MPa) after 20 to 30 minutes
S2 (improved deformation of mortar)	≥ 0.2" (5 mm)
P2 (improved adhesion to plywood)	≥ 145 psi (1 MPa)

ANSI Specifications*

Test Method	Specification Standard	Test Results
ANSI A118.11 – shear strength, quarry tile to plywood	> 150 psi (1.03 MPa) at 28 days	200 to 350 psi (1.38 to 2.41 MPa)
ANSI A118.15H – mortar for large and heavy tile	ASTM C627 Robinson Floor Test Lippage change < 1/64" (0.4 mm)	Pass
ANSI A118.15E – extended open time	≥ 72.5 psi (0.5 MPa) at 30 minutes	Pass
ANSI A118.15 – shear strength, impervious ceramic (porcelain) mosaics	> 400 psi (2.76 MPa) at 28 days	Pass
ANSI A118.15 – shear strength, glazed wall tile	> 450 psi (3.10 MPa) at 7 days	470 to 600 psi (3.24 to 4.14 MPa)
ANSI A118.15 – shear strength, quarry tile to quarry tile	> 150 psi (1.03 MPa) at 28 days	350 to 530 psi (2.41 to 3.66 MPa)

** Anything that meets A118.15 by definition exceeds A118.4.*

Shelf Life and Product Characteristics
before mixing

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C)
Colors	Gray and white

Shelf Life and Application Properties
at 73°F (23°C) and 50% relative humidity

Open time**	30 minutes

Pot life**	> 4 hours
Adjustment time**	45 minutes
Time before grouting**	24 to 48 hours
VOC content	0 g per L

*** Actual open time, pot life, adjustment time and time before grouting will vary based on jobsite conditions.*

Approximate Coverage***
per 25 lbs. (11.3 kg)

Typical Trowel	Coverage
1/4" x 1/4" x 1/4" (6 x 6 x 6 mm), square-notch	75 to 90 sq. ft. (6.97 to 8.36 m^2)
1/4" x 3/8" x 1/4" (6 x 10 x 6 mm), square-notch	55 to 65 sq. ft. (5.11 to 6.04 m^2)
1/2" x 1/2" x 1/2" (12 x 12 x 12 mm), square-notch	38 to 45 sq. ft. (3.53 to 4.18 m^2)
Euro notch trowel (for gauged tile only)	14 to 16 sq. ft. (1.30 to 1.49 m^2) (based on double application to the substrate and tile backs)

**** Trowel dimensions are width/depth/space. Actual coverage will vary according to substrate profile and tile type.*

Packaging

Size and Color
Bag: 25 lbs. (11.3 kg), gray
Bag: 25 lbs. (11.3 kg), white

RELATED DOCUMENTS

- Reference guide: “Surface preparation requirements” for tile and stone installation systems†
- Technical bulletin: “Tiling over gypsum”†
- Reference guides: “Gauged porcelain tile panels/slabs” for walls and floors†

† *At www.mapei.com*

ADDITIONAL INFORMATION

Refer to the Safety Data Sheet (SDS) for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

WARNING

The test results shown in the TECHNICAL DATA table were obtained in compliance with test methods and curing cycles, if applicable, defined in the industry standards referenced on the Technical Data Sheet. Please note that the use of test procedures or methods other than those indicated in the table could lead to different values and that, in such cases, any liability of our company is excluded.

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