

Simplifying the installation challenges of large-format thin tiles

MAPEI Ultralite™ S2

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



Designing the perfect fit between thin tile and substrate

At the request of American tile associations, the MAPEI Research & Development labs extensively tested methods for successfully installing large thin tiles. These methods are communicated in MAPEI's Reference Guides for installing wall tiles 1/8" to 1/4" (3 to 6 mm) thick and floor tiles 3/16" to 1/4" (4,5 to 6 mm) thick.

As a result of continued work in this field, MAPEI has now developed a mortar that addresses the performance challenge in bonding large thin tile with a substrate. **MAPEI Ultralite™ S2** allows architects the freedom to design dramatically with large thin tiles without worrying about the durability of the installation process.



MEETING THE CHALLENGES

Though thin tiles are lighter in weight than standard porcelain tiles, the large sizes of some of these tiles can make them very heavy to lift and difficult to place. *MAPEI Ultralite S2*'s unique Ultralite Technology™ provides twice the coverage of a standard thin-set mortar, resulting in a significant reduction in the weight of the tile being applied to a wall or as exterior cladding.

Total coverage is critical under large thin tiles in order to avoid cracks and chips, especially around the edges. *MAPEI Ultralite S2* has superior wetting-out properties that help it transfer to both tile and substrate, increasing the bond to each and giving the greatest possible coverage.

The extended open time of *MAPEI Ultralite S2* allows installers to trowel the mortar onto the substrate and to back-butter the tile without loss of bond due to drying out.

When dealing with tiles that may be as large as 5 by 10 ft. (1,52 by 3,05 m), the installer can appreciate how extra time significantly enhances the ease of application.

MAPEI Ultralite S2 also utilizes MAPEI's Easy Glide Technology™, designed so that the trowel ridges collapse. This contributes to ease of application across the extensive surface of the tile, making the mortar easier to apply and increasing transfer.

One of the most important challenges for architects designing with large thin tiles is the contraction and expansion that occurs in the exterior of buildings exposed to heat, cold, sun, rain and other climatic conditions. *MAPEI Ultralite S2* is highly deformable (classified by ISO 13007 standards as an S2 mortar), easily accommodating substrate movement under extreme conditions.

When installers follow the recommendations in the MAPEI Reference Guides and use *MAPEI Ultralite S2* mortar, the architect's vision for large thin tile can be realized as a successful project.



Q&A

Q. Why is a special mortar needed for thin tile?

A. Tiles with traditional thickness are very strong and can compensate for areas of incomplete mortar coverage. Thin tiles can't. Any void beneath a thin tile becomes an opportunity for a crack or chip. Thin tiles are also usually very large tiles; they can expand more than traditional tiles, are heavy and can be awkward to place. Setting material demands for large tiles are unique due to troweling larger areas of the substrate, while at the same time back-buttering, moving and placing tiles within the working-time limitations of the mortar.

Q. How does *MAPEI Ultralite S2* provide better support?

A. By making it easier to get full coverage. Thanks to Easy Glide Technology™, the mortar trowels easily onto the tile and the substrate. The improved wetting characteristics ensure that the mortar develops a superior bond. And extended working time gives installers longer to place the tiles into the mortar bed. Plus, thanks to the single-component technology of *MAPEI Ultralite S2*, this mortar simply needs water added on the jobsite.

Q. And the expansion issue?

A. The "S2" in the name of the product means that this mortar has a superior polymer content and is highly deformable. Unlike non-modified or minimally modified mortars that can debond when the tile expands, *MAPEI Ultralite S2* can compensate for the difference in expansion between the substrate and the tile.

Q. Why is the lightweight aspect a benefit?

A. A full panel of thin tile can require 25 lbs. (11,3 kg) or more of a traditional mortar to be applied to it – which is added to the weight of the tile itself. Handling this additional weight makes the installation process cumbersome. With *MAPEI Ultralite S2*, only 12 to 15 lbs. (5,44 to 6,80 kg) of additional weight is added to the tile. It is easier to transport the bags, and it results in less weight to the structure or facade.

Q. Why is this listed as an ANSI A118.4E mortar if it is so highly modified?

A. An ISO S2 mortar is designed to be highly deformable. Unfortunately, rather than address deformability, the ANSI A118.15 standard is based solely on bond-strength criteria – which favors rigid mortars and two-component systems. All TCNA Handbook methods that list an A118.15 mortar also list an ISO S2 mortar as an alternate compliance path. For MAPEI, it was more important for the product to achieve ideal performance characteristics than it was to claim compliance with A118.15.

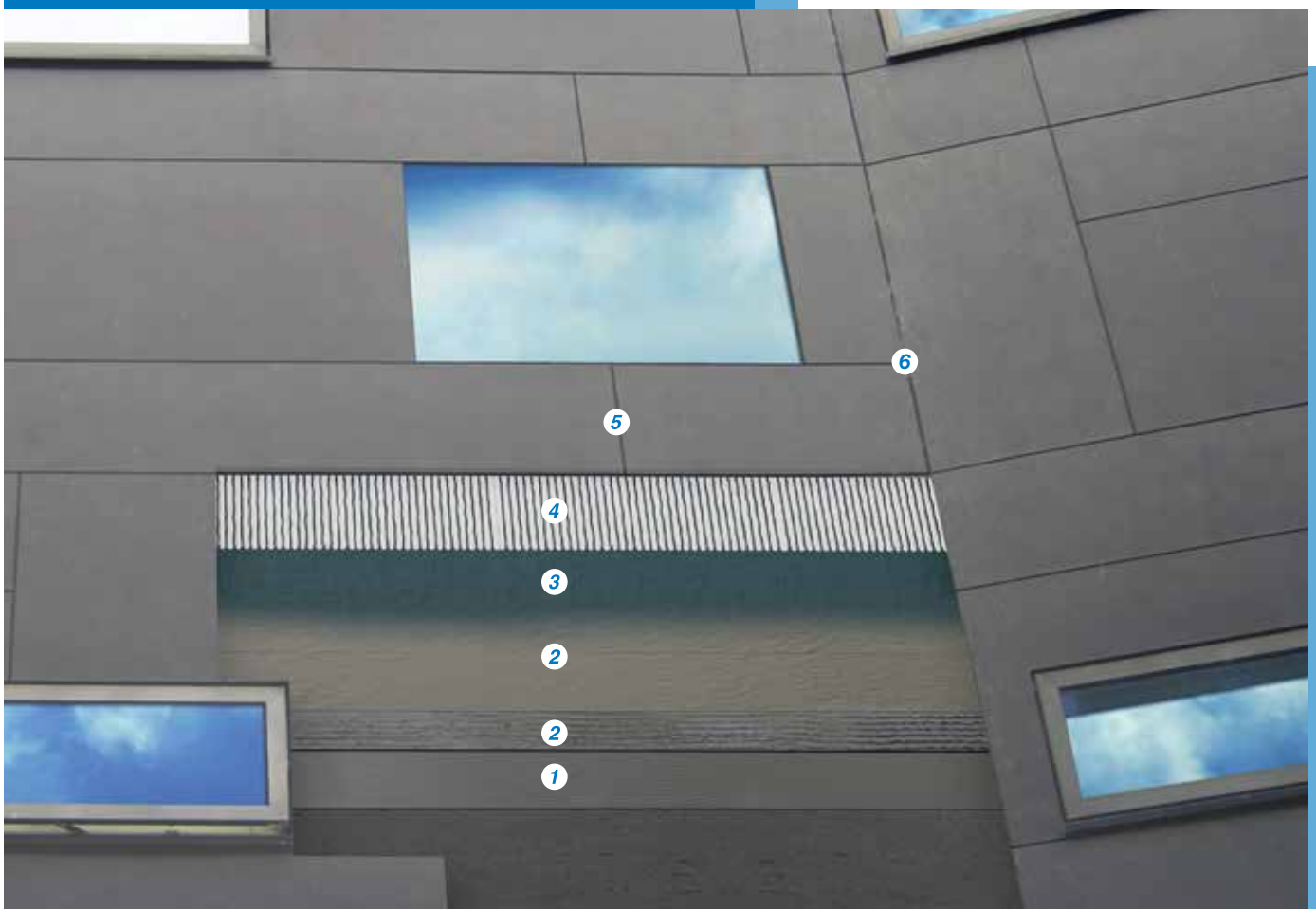
Q. Can *MAPEI Ultralite S2* be used for other types of tile too?

A. Absolutely. This is an extremely high-performance mortar designed for all types of porcelain, ceramic and stone tiles in the most demanding applications. While *MAPEI Ultralite S2* has been formulated to meet the specific needs of thin tile, all installations can benefit from this product's Easy Glide Technology, improved wetting and lighter weight.

MAPEI Ultralite S2 for exterior walls

Exterior cladding with large thin tile depends considerably on the deformability of the mortar used to bond the tiles to the vertical substrate. MAPEI provides another single-source system for this type of project. *Ultraflex™ 2* is used as a slurry coat to promote the bond between the building surface and the render coat of *Modified Mortar Bed*. *Mapelastic™ AquaDefense* is applied over the *Modified Mortar Bed* to waterproof the substrate. Next, *MAPEI Ultralite S2* is used to set the large thin tiles, with exceptional wetting-out properties that provide a strong grab on the vertical surface. Use of an edge-leveling system augments the monolithic look of the large tiles. *Ultracolor® Plus* grout in the tile joints tops off the project, providing efflorescence-free visual appeal.

- 1 *Ultraflex 2*
- 2 *Modified Mortar Bed*
- 3 *Mapelastic AquaDefense*
- 4 *MAPEI Ultralite S2*
- 5 Thin tile + edge-leveling system
- 6 *Ultracolor Plus*



MAPEI Ultralite S2 for interior floors

MAPEI supplies an excellent single-source system for installing large thin tiles on interior floors. One of the most important facets of installing thin tile on floors is a completely flat substrate. *Primer T*[™] enhances the adhesion of the self-leveling underlayment *Ultraplan*[®] 1 Plus to absorbent and nonabsorbent surfaces. After the floor has been properly leveled, the large thin tiles can be set in place using *MAPEI Ultralite S2* mortar and a reputable edge-leveling system. Grouting the tile joints with *MAPEI Flexcolor*[™] CQ ready-to-use grout provides the crowning touch to an aesthetically pleasing, durable project.

- 1 *Primer T*
- 2 *Ultraplan 1 Plus*
- 3 *MAPEI Ultralite S2*
- 4 Thin tile + edge-leveling system
- 5 *MAPEI Flexcolor CQ*





Keyword: MAPEI Americas

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