



# Ultralite



**High-performance, highly deformable, lightweight cementitious adhesive with extended open time and very high yield. Ideal for thin porcelain tiles, ceramic and stone material**



## CLASSIFICATION ACCORDING TO ISO 13007-1

**Ultralite S2** is a C2E S2-class cementitious (C), improved (2), with extended open time (E), highly deformable (S2) adhesive.

## WHERE TO USE

- Bonding all types and sizes of ceramic tiles (double-fired, single-fired, porcelain, klinker, terracotta, etc.) on internal and external substrates.
- Bonding stone on internal and external surfaces (only stone which is stable and not sensitive to humidity).
- Bonding all types and sizes of thin porcelain tiles on floors and walls, including external façades.
- Bonding all types of mosaic on internal and external substrates even in swimming-pools.

Specifically developed for large-sized tiles to be laid on large surface areas without double buttering.

Because of its high buttering capacity on the backs of tiles, it is particularly suitable for laying any type of thin porcelain tile (using the double buttering technique).

## Some application examples

- Bonding ceramic tiles (double-fired, single-fired, porcelain tile, ceramic and glass mosaic, klinker, etc.), stone (if stable in damp environments) and thin porcelain tiles on conventional substrates, such as:
  - on “damp earth” consistency and self-levelling cementitious screeds and anhydrite (after applying a suitable primer);
  - heating screeds;
  - cementitious render or lime-mortar render;
  - gypsum render (after applying a suitable primer);

- plasterboard, precast panels, fibre-cement panels;
- waterproofing membranes in **Mapelastic Smart**, **Mapelastic AquaDefense**, **Mapegum WPS** and **Aquaflex WPM**.

- Laying ceramic and stone on old floors (in ceramic, marble, etc.).
- Laying on marine-plywood, wooden agglomerates and old, stable wooden floors.
- Laying ceramic and stone on balconies, terraces and paving slabs exposed to direct sunlight and thermal gradients.
- Laying on precast concrete walls and concrete substrates.

## TECHNICAL CHARACTERISTICS

**Ultralite S2** is a grey powder made from cement, selected graded sand, a high amount of synthetic resin and micro-spheres of recycled silica material which helps to make the mix lighter, according to a special formula developed in MAPEI's Research Laboratories, to offer a valid contribution towards the development of sustainable buildings.

The special technology used to manufacture **Ultralite S2** gives it a lower density, which offers two main advantages:

- 1) bags of **Ultralite S2** have the same volume but weigh less (13.5 kg) than bags of conventional cementitious adhesive (20 kg). This ensures easier handling and savings in transport costs;
- 2) higher yield: yield is approximately 80% higher than MAPEI S2-class, two-component cementitious adhesives.

# Ultralite S2



Laying on an external façade: application of adhesive on the substrate



Spreading the adhesive on the back face of the tile

**Ultralite S2** mix has a low viscosity, which makes it easier and quicker to apply. The product's excellent buttering capacity on the backs of tiles means that the double-buttering technique may be avoided when laying large tiles in internal environments. Its excellent back-face buttering capacity also makes this adhesive particularly suitable for laying thin porcelain tiles. The application of **Ultralite S2** using the double-buttering technique on flat substrates ensures that there are absolutely no gaps in the adhesive on the backs of the tiles, thus avoiding the risk of fracture when in service.

When mixed with water, **Ultralite S2** forms a mortar with the following characteristics:

- excellent capacity of absorbing deformations in the substrate and in the tiles;
- excellent buttering capacity on the backs of tiles;
- bonds perfectly to all materials normally used in the building industry;
- particularly long open time and adjustment time to make laying operations easier.

## RECOMMENDATIONS

DO NOT use **Ultralite S2** in the following cases:

- on metal, rubber, PVC and linoleum;
- for slabs of marble and natural stone which are subject to efflorescence or staining;
- for natural stone or composite slabs subject to movements caused by damp;
- when the surface must be put quickly back into service.

DO NOT add water to the mix once it starts to set.

## APPLICATION PROCEDURE

### Preparation of the substrate

All substrates must be mechanically strong, free of loose parts, grease, oil, paintwork, etc. and must be sufficiently dry.

All cementitious substrates must be well cured and must not shrink after fixing the tiles. New concrete must be cured for at least 28 days and renders cured for at least 1 week for each centimetre of thickness. Screeds must be adequately cured and sufficiently dry (moisture content below 5%) prior to tiling. In order to fast track installations, it is recommended to use screeds made from special MAPEI binders such as Mapecem, or pre-blended mortars, such as Topcem Pronto and Mapecem Pronto.

If the surface is too hot due to direct sunlight, cool it down with water.

Gypsum substrates and anhydrite screeds must be perfectly dry, hard enough for the final intended use and free of dust. They must also be treated with **Primer G** or **Eco Prim T Plus**, while areas subject to high humidity must be primed with **Primer S**.

Substrates on which thin porcelain tiles are to be laid must be perfectly flat. Therefore, where necessary, even out the substrate before laying the floor with a self-levelling skimming compound from the MAPEI range.

### Preparation of the mix

Blend **Ultralite S2** with clean water to obtain a smooth, lump-free mix. Let the mix stand for

around 5 minutes, then blend again.

The amount of water required is approximately 4.8 - 5.2 litres per 13.5 kg bag. When blended as described above, the mix lasts for approximately 8 hours.

## Spreading the mix

Apply **Ultralite S2** on the substrate using a notched trowel. Use a trowel with a notch size which guarantees complete buttering of the back of the tile.

To guarantee a good bond, apply a thin layer of **Ultralite S2** on the substrate using the smooth side of the trowel and then immediately apply another layer of **Ultralite S2** to the thickness required using a suitable notched trowel, according to the type and size of the tiles, to guarantee that the backs of the tiles are well buttered.

When laying external ceramic flooring and coatings, for tile sizes larger than 900 cm<sup>2</sup> (300 x 300 mm) and floors subject to heavy loads, spread the adhesive also on the back of the tile to ensure complete buttering.

When laying thin porcelain tiles, we recommend that the adhesive is also spread on the backs of the tiles (with the suitable notched trowel) to guarantee there are no gaps to avoid the risk of fracture when in service.

## Laying tiles

The tiles do not need to be wet before they are laid. However, if the backs of the tiles are particularly dusty, wash them by dipping them in clean water.

When laying the tiles, apply a firm pressure to guarantee good buttering.

The open time for **Ultralite S2** is at least 30 minutes in normal weather and humidity conditions. When laying conditions are not ideal (direct sunlight, dry wind, high temperatures), or if the substrate is particularly absorbent, this time may be reduced to only a few minutes.

Keep checking the adhesive to make sure skin does not form on the surface and that it is still fresh. If skin forms, spread the adhesive again with the notched trowel. Do not wet the surface of the adhesive if a skin forms, water does not dissolve the skin but creates a film which impedes bonding. Final adjustment of the tiles must be carried out within 45 minutes of laying.

Coatings laid using **Ultralite S2** must be protected from water and rain for at least 24 hours and from freezing weather and direct sunlight for at least 5 to 7 days.

## Grouting and sealing

Tile joints may be grouted after 4 to 8 hours on walls and after 24 hours on floors. Use a MAPEI cementitious or epoxy grout, available in a wide variety of colours.

Expansion joints must be sealed using a special MAPEI sealant.

## SET TO LIGHT FOOT TRAFFIC

Floors set to light foot traffic after approximately 24 hours.

## READY-TO-USE

Surfaces are ready-to-use after approximately 14 days.

## TECHNICAL DATA (typical values)

Conforms to the following standards:

- European EN 12004 (C2E S2)
- ISO 13007-1 (C2E S2)

### PRODUCT IDENTITY

Consistency:	powder
Colour:	white and grey
Bulk density (kg/m <sup>3</sup> ):	850
Dry solids content (%):	100
GREEN STAR™	contributes valuable points towards Green Star™ credits - very low VOC content g/l

### APPLICATION DATA (at +23°C and 50% R.H.)

Mixing ratio:	100 parts of <b>Ultralite S2</b> with 36-39% parts in weight of water
Consistency of mix:	creamy
Density of mix (kg/m <sup>3</sup> ):	1,100
pH of mix:	more than 12
Pot life of mix:	more than 8 hours
Application temperature range:	from +5°C to +35°C
Open time (according to EN 1346):	> 30 minutes
Adjustment time:	45 minutes
Grouting tile joints on walls:	after 4-8 hours
Grouting tile joints on floors:	after 24 hours
Set to light foot traffic:	approx. 24 hours
Ready-to-use:	14 days

### FINAL PERFORMANCE

Bond strength according to EN 1348 (N/mm <sup>2</sup> ):	
- initial bond (after 28 days):	2.5
- bond after application of heat source:	3.0
- bond strength after immersion in water:	1.5
- bond strength after freeze-thaw cycles:	1.5
Resistance to alkalis:	excellent
Resistance to oils:	excellent (poor with vegetable oils)
Resistance to solvents:	excellent
In-service temperature range:	from -30°C to +90°C
Deformability according to EN 12004:	S2 - highly deformable (> 5 mm)



*Applying a thin porcelain tile on an external façade*



*Checking the back face of the tile if it is completely buttered when laying on an external façade*

# Ultralite S2



## CLEANING

Tools and containers may be cleaned using plenty of water while **Ultralite S2** is still fresh. Clean the surfaces of the coatings using a damp cloth before the adhesive hardens.

## PACKAGING

**Ultralite S2** is available in 13.5 kg paper bags.

## CONSUMPTION

0.8 kg/m<sup>2</sup> per mm of thickness, equal to 1.5-2.5 kg/m<sup>2</sup>.

## STORAGE

**Ultralite S2** may be stored for up to 12 months in its original packaging in a dry, elevated area.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Ultralite S2** contains cement that when in contact with sweat or other body fluids causes irritant alkaline reaction and allergic reactions to those predisposed. It can cause damage to eyes. We recommend the use of protective gloves and goggles and to take the usual precautions for handling chemicals.

If the product comes into contact with the eyes or skin, wash immediately with plenty of clean water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

## WARNING

*Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.*

Please refer to the current version of the **Technical Data Sheet** available from our website [www.mapei.com.au](http://www.mapei.com.au)

## LEGAL NOTICE

*The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.*

*The most up-to-date TDS can be downloaded from our website [www.mapei.com.au](http://www.mapei.com.au)*

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**All relevant references for the product are available upon request and from [www.mapei.com.au](http://www.mapei.com.au)**

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