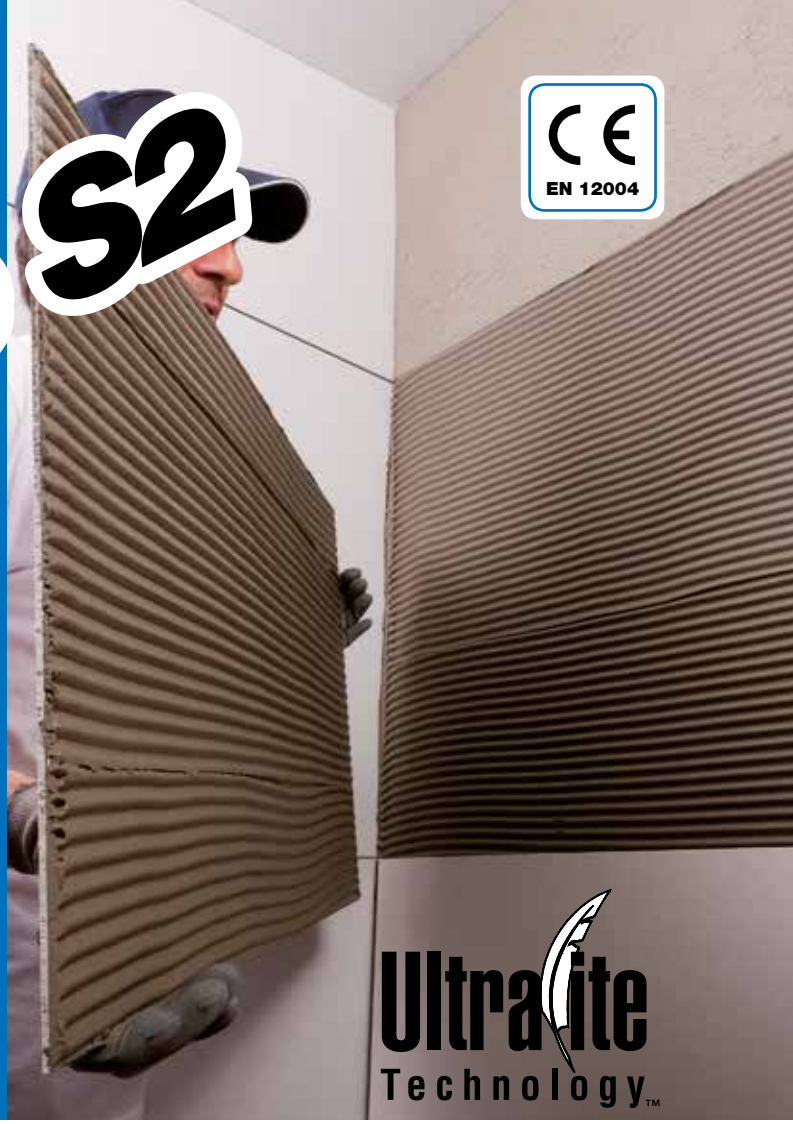
MAPEI

Ultralite S2

One-component, high-performance, highly-deformable, lightweight cementitious adhesive with extended open time and very high yield, easy to trowel and good buttering capacity with very low emission of volatile organic compounds, for ceramic tiles and stone material, ideal for thin porcelain tiles



CLASSIFICATION ACCORDING TO EN 12004

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

*Conformity of **Ultralite S2** is declared in **ITT** certificate **n° 25110055/AG (TUM)** and **n° 25110056/AG (TUM)** issued by the Technische Universität München laboratory (Germany).*

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), including on thermal insulation systems such as **Mapetherm Tile System**.

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, cement-fibre panels;
  – waterproofing membranes in **Mapelastic, Mapelastic Smart, Mapelastic AquaDefense, Monolastic** and **Mapegum WPS**.
- 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.
- Laying thin porcelain tiles on **Mapetherm Tile System** thermal insulation systems (refer to the specific Technical Notebook).

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

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

Spreading the adhesive on the back face of the tile

Ultralite S2 gives it a lower density, which offers two main advantages:

1) bags of **Ultralite S2** have the same volume but weigh less (15 kg) than bags of conventional cementitious adhesive (25 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 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

Substrates must be mechanically strong, free of loose parts, grease, oil, paintwork, wax, etc., and must be sufficiently dry.
Cementitious substrates must not shrink after laying the tiles. Therefore, in good weather, render must be cured for at least one week per cm of thickness, and cementitious screeds must be cured for at least 28 days, unless they are made using special MAPEI binders for screeds, such as **Mapecem** and **Topcem**, or pre-blended mortars, such as **Mapecem Pronto** and **Topcem 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**, 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 5.4-5.7 litres per 15 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^2 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.

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/m³):	850
Dry solids content (%):	100
EMICODE:	EC1 R Plus - very low emission
APPLICATION DATA (at +23°C and 50% R.H.)	
Mixing ratio:	100 parts of **Ultralite S2** with 36-38% parts in weight of water
Consistency of mix:	creamy
Density of mix (kg/m³):	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/mm²): **– initial bond (after 28 days):** **– bond after application of heat source:** **– bond strength after immersion in water:** **– bond strength after freeze-thaw cycles:**	 2.5 3.0 1.5 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

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.

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 15 kg paper bags with handle.

CONSUMPTION
0.8 kg/m^2 per mm of thickness, equal to 1.5-2.5 kg/m^2.

STORAGE
Ultralite S2 may be stored for up to 12 months in its original packaging in a dry place.
The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION
Instructions for the safe use of our products can be found on the latest version of the SDS available from our website www.mapei.no

PRODUCT FOR PROFESSIONAL USE.

WARNING
Although the technical details and recommen-dations 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 web site www.mapei.no

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.no
ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

GEV-EMICODE EC 1 PLUS very low emission

This symbol is used to identify Mapei products which give off a low level of volatile organic compounds (VOC) as certified by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an international organisation for controlling the level of emissions from products used for floors.

GREEN INNOVATION

Our Commitment To The Environment
MAPEI products assist Project Designers and Contractors create innovative LEED (The Leadership in Energy and Environmental Design) certified projects, in compliance with the U.S. Green Building Council.

Contains more than 20% of recycled material

All relevant references for the product are available upon request and from www.mapei.no

30-05-2018 (GB-NO)

MAPEI®
BUILDING THE FUTURE