



# Lightflex LD



**One-component, high-performance, deformable, lightweight, cementitious adhesive with no vertical slip and long open time. Easy to apply by trowel for ceramic tiles and stone materials.**

**Ultra**  
Technology™

## CLASSIFICATION IN COMPLIANCE WITH EN 12004

**Lightflex LD** is a C2 TE S1- class cementitious (C), improved (2), slip-resistant (T), deformable (S1) adhesive with extended pot life (E).

## WHERE TO USE

- Interior and exterior bonding of all types and sizes of ceramic tiles (double-fired, single-fired porcelain, klinker, terracotta, etc.) on floors and walls.
- Bonding natural stone on internal and external surfaces (taking into account that the stone is not sensitive to humidity).

## Some application examples

- Bonding ceramic tiles (double-fired, single-fired, porcellanato tiles, klinker, etc.), stone materials and mosaics on conventional substrates, such as:
  - cementitious and anhydrite screeds (after preparation and applying a suitable primer);
  - heated screeds;
  - cementitious render or lime-mortar render;
  - gypsum-based plaster (after applying a suitable primer);
  - plasterboard, pre-fabricated panels, cement-fibre panels;
  - waterproofing membranes **Mapelastic**, **Mapelastic Smart** and **Mapegum WPS**.
- laying ceramic and natural stones on old floors (in ceramic, marble, etc.);

- laying on marine plywood, wooden agglomerates and old, stable wooden floors;
- laying ceramic tiles and natural stone on balconies, terraces and paving slabs exposed to direct sunlight and thermal gradients;
- laying on prefabricated concrete walls and concrete substrates.

## TECHNICAL CHARACTERISTICS

**Lightflex LD** is a grey powder made from cement, selected graded sand and a high amount of synthetic resin, with light natural aggregates, which helps to make the mix lighter. The product has been developed according to a special formula at MAPEI's own research laboratories, as a contribution towards a sustainable building industry.

The special technology used to manufacture **Lightflex LD** gives it a low density, a characteristic which offers two main advantages:

- 1) Bags of **Lightflex LD** have the same volume, but weigh less (15 kg) than bags of conventional cementitious adhesive (25 kg). This makes for easier handling and savings in transport costs.
- 2) Higher yield: approximately 15 % higher compared with conventional MAPEI's cementitious adhesives.

**Lightflex LD** mix has low viscosity, which makes it

easier and quicker to apply. In spite of the above characteristics, the thixotropic nature of **Lightflex LD** means there is no vertical slip when fixing tiles on walls, even with large size tiles.

The application of **Lightflex LD** using the double-buttering technique on flat substrates ensures that there are absolutely no voids in the adhesive on the back of the tiles, thus avoiding the risk of fracture when subject to traffic.

Its excellent non-slip properties also make it particularly easy and safe to fix tiles on vertical surfaces.

When mixed with water **Lightflex LD** forms a mortar with the following characteristics:

- hardens without appreciable shrinkage;
- bonds perfectly to all materials normally used in the building industry;
- particularly long open and adjustment times, to make installation easier.

## RECOMMENDATIONS

Do not use **Lightflex LD** 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 moisture movement;
- when the floored surface must be put quickly 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 etc. and must be sufficiently dry.

Cementitious substrates must not shrink after fixing 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** or **Topcem**, or pre-blended mortars, such as **Mapecem Pronto** or **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 and laitance. They must also be treated with **Primer G** or **Eco Prim T**, while areas subject to high humidity must be primed with **Primer S**.

### Preparation of the mixture

Blend **Lightflex LD** with clean water to obtain a smooth, lump-free mixture. Let the mixture

stand for approximately 5 minutes, then blend again.

Approximately 4.6 to 5.1 litres of water are required for each 15 kg bag. When blended as described above, the mixture has a pot life of approximately 8 hours.

## Spreading the mix

Apply **Lightflex LD** 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 **Lightflex LD** on the substrate using the smooth side of the trowel, and then immediately apply a further layer of **Lightflex LD** to the thickness required using a suitable trowel, according to the type and size of the tiles.

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

## Laying tiles

The tiles do not need to be wet before they are laid. However, if the back surfaces are particularly dusty, dip them into clean water. Ensure they are dry before fixing.

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

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

Therefore, check often to make sure a skin does not form on the surface of the adhesive, and that it is still fresh. If a 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 and impedes a good bond. Final adjustment of the tiles must be carried out within 45 minutes of laying.

Tiles laid using **Lightflex LD** 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 sealants.

## SET TO LIGHT FOOT TRAFFIC

Floors may be walked on after approximately 24 hours.

## READY FOR USE

Surfaces may be put into service after approximately 14 days.

## CONSUMPTION

0.9 kg/m<sup>2</sup> per mm of thickness, equal to 2-3 kg/m<sup>2</sup>.

## STORAGE

**Lightflex LD** can 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

**Lightflex LD** contains cement that when in contact with sweat or other body fluids, causes an irritant alkaline reaction and allergic reaction to those predisposed. It can cause damage to eyes. It is recommended to use protective gloves and goggles and to take the usual precautions for handling chemicals. In case of contact with eyes or skin wash immediately with plenty of water and seek medical attention.

For further and complete information about a safe use of our product please refer to our latest version of the Material 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.no](http://www.mapei.no)



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 Verlegwerkstoffe, Klebstoffe und Bauprodukte e.V.), an international organisation for controlling the level of emissions from products used for floors.



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

**All relevant references  
for the product are available  
upon request and from  
[www.mapei.no](http://www.mapei.no)**

## TECHNICAL DATA (typical values)

Conforms to the following standards:

- European EN 12004 (C2TE S1)
- ISO 13007 - 1 (C2TE S1)

### PRODUCT IDENTITY

Consistency:	powder
Colour:	grey
Bulk density (kg/m <sup>3</sup> ):	1000
Dry solids content (%):	100
EMICODE:	EC1 R Plus - very low emissions

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

Mixing ratio:	100 parts of <b>Lightflex LD</b> with 31-34 parts in weight of water
Consistency of mix:	creamy paste
Density of the mix (kg/m <sup>3</sup> ):	1,300
pH of mix:	> 12
Pot life of mix:	more than 8 hours
Application temperature range:	from +5°C to +40°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:	24 hours
Ready for use:	14 days

### FINAL PERFORMANCE

Bond strength according to EN 1348 (N/mm <sup>2</sup> ):	
- initial bond (after 28 days):	2.0
- bond after application of heat source:	2.0
- bond strength after immersion in water:	1.0
- bond strength after freeze-thaw cycles:	1.2
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:	S1 - deformable (> 2.5 mm, < 5 mm)