

Installations on dry-installed substrates





INSTALLATIONS ON DRY-INSTALLED SUBSTRATES

The building industry is becoming increasingly oriented towards renovation work rather than new builds.

This means new work methods needed to be developed so that materials can be used to renovate existing buildings.

Dry systems are used in renovation work because they are relatively easy to apply, enabling work to be carried out quickly, reduce overall construction costs and allow elements and features to be dismantled at a later date and be reused or recycled.



What are dry construction systems?

Unlike wet systems, dry construction systems are those that do not require water or materials with hydraulic binders or in water dispersion during the installation process. There are various types of dry systems available and, depending on the characteristics of each system, they may be used either in dry areas or damp areas, internally or externally and for floors or walls.

Some types of panel are sensitive to water and are mainly used in dry internal areas. When using dry systems in potentially damp areas, before installing ceramic, stone and wooden or resilient flooring, it is essential that a waterproofing system is installed beforehand.

The following are examples of substrates used in dry systems:

- **PLASTERBOARD**
- **CEMENT-FIBRE**
- **OSB**
- **GYPSUM-FIBRE**
- **CALCIUM SILICATE**
- **METAL**

Dry-installed compact underfloor heating systems are amongst the dry systems considered and allow renovation work to be carried out in occupied buildings without having to carry out any demolition or repair work beforehand.

Dry systems and Mapei solutions

Mapei has various product systems available for installing ceramic, stone and wooden or resilient flooring and for finishing off walls over dry systems.

Various Mapei systems are available, depending on the type of dry-installed substrate.

PLASTERBOARD PANELS

To be suitable for installation work, they must be firmly fastened to the framework of the structure according to the specifications and methods recommended by the manufacturer. Even if this type of material has been installed perfectly, it is still considered a deformable substrate. It is recommended, therefore, to use class S1 or S2 deformable adhesive and, if the joints between the panels have been skimmed with a gypsum-based product, they must be primed with **PRIMER G** or **ECO PRIM T** before applying the adhesive. An alternative solution is to install the ceramic directly, including over the areas with gypsum-based skimming compound, using ready-mixed adhesive paste such as **ULTRAMASTIC III** (if compatible with the format of the tiles and the area of use).



► Solution: **WALLS in DRY INTERNAL areas – installation of ceramic tiles:**



System for waterproofing and soundproofing ceramic and glass mosaic coverings in bathrooms and wet environments



- 1** Ready-to-use waterproofer
MAPEGUM WPS



- 2** Rubber tape
MAPEBAND PE 120

- 3** Gypsum-board

- 4** Adhesive
ULTRAMASTIC III



- 5** Ceramic tiles

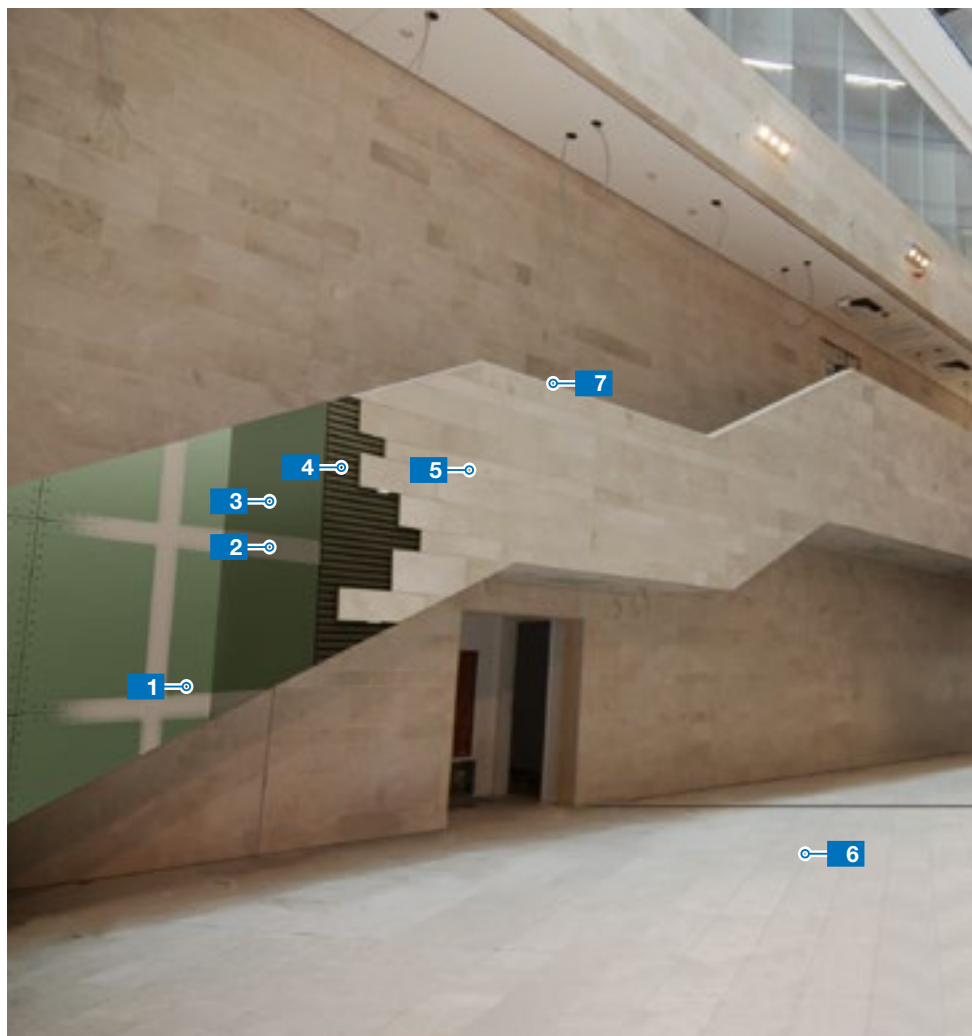
- 6** Grout
KERACOLOR FF



- 7** Sealant
MAPESIL Z PLUS



Rapid system for laying natural stone slabs



1 Gypsum-board

2 Gypsum-based smoothing compound
PLANITEX A

3 Primer
PRIMER G

4 Adhesive
ELASTORAPID



5 Crema Marfil marble slabs

6 Grout
ULTRACOLOR PLUS



7 Sealant
MAPESIL LM



CEMENT-FIBRE PANELS

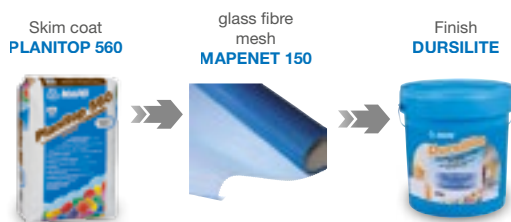
This type of panel is often used to line external walls, including over existing substrates, to make surfaces more even before they are painted or tiled. When installing ceramic tiles, the surface needs to be made seamless by applying a skim coat reinforced with alkali-resistant glass fibre mesh straddling the joints between the panels. The products to use in such cases is a 3-4 mm thick layer of **MAPEFINISH** and **MAPENET 150**. If the surface is to be painted, use **MAPETHERM AR1** and **MAPETHERM NET**.



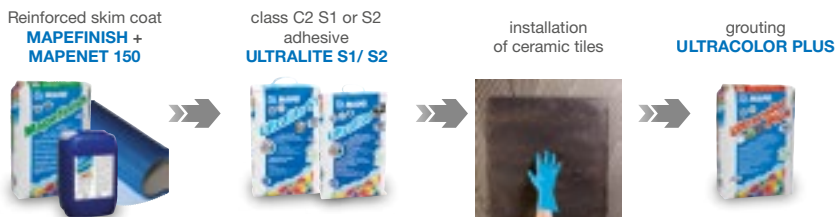
► Solution: **WALLS in DRY INTERNAL areas – installation of ceramic tiles:**



► Solution: **WALLS in DRY INTERNAL areas – application of a wall finish:**



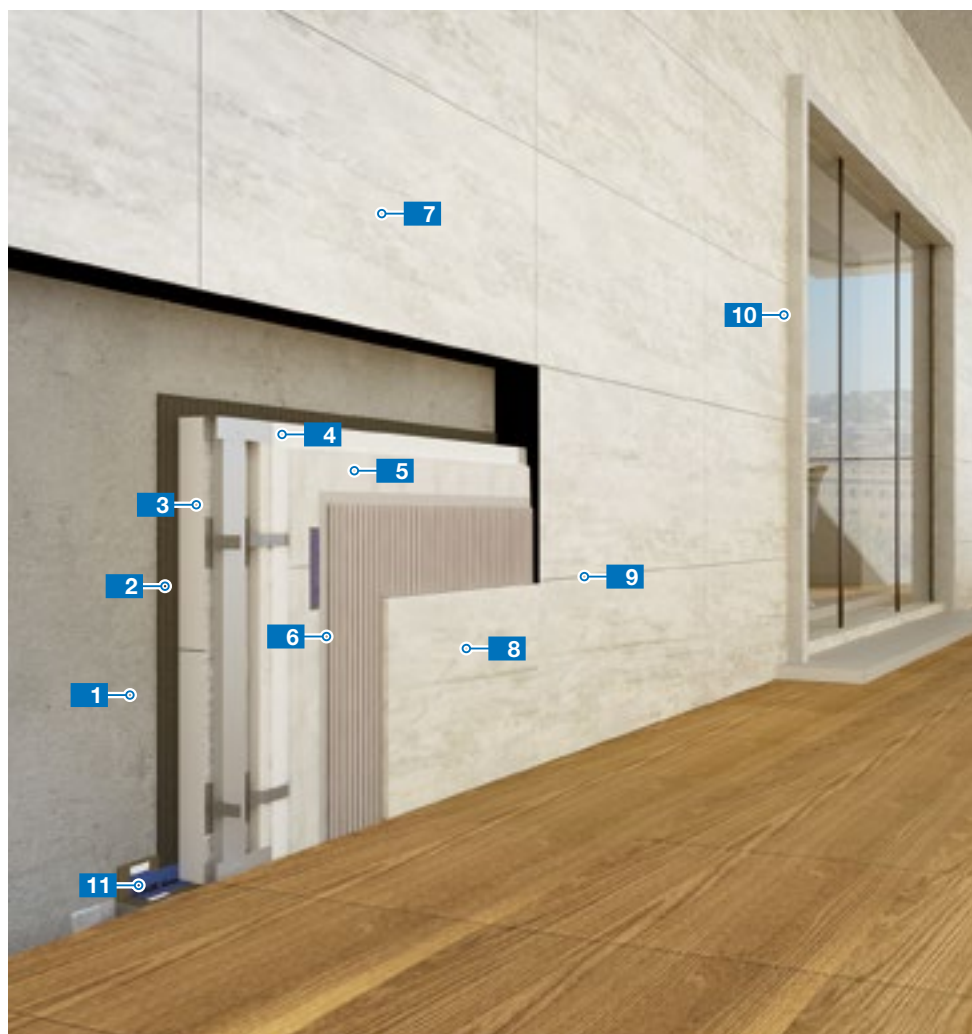
► Solution: **WALLS in EXTERNAL areas – installation of ceramic tiles:**



► Solution: **WALLS in EXTERNAL areas – application of a wall finish:**



System for the installation of large format tiles on façades on fibre-cement panels



1 Concrete wall

2 Adhesive
PLASTIMUL 2K PLUS
CE CE

3 Polystyrene panel

4 Separating layer

5 Fibre-cement panel

6 Reinforced smoothing compound
**MAPEFINISH +
MAPENET 150**
CE CE CE CE

7 Adhesive
**KERABOND PLUS +
ISOLASTIC**
CE CE CE

8 Porcelain tiles

9 Grout
ULTRACOLOR PLUS
CE CE CE CE

10 Sealant
MAPESIL LM
CE CE

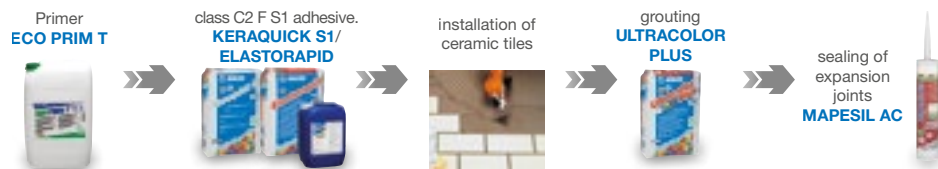
11 Waterproofer
**MAPELASTIC SMART +
MAPETEX SEL +
MAPEBAND**
CE CE CE CE

OSB PANELS

This type of panel is widely used for floors and for lining roofs and walls. These engineered panels are made from chips of wood bonded together with synthetic resin which are then pressed together to form layers. If the dressing material is to be bonded directly to this type of surface it must be primed beforehand with **ECO PRIM T** or **ECO PRIM GRIP** and then a class C2F or deformable class S1 adhesive must be used to bond the dressing material. Wide grout lines need to be formed and as many expansion joints as possible should also be included.



► Solution: **FLOORS in DRY INTERNAL areas – installation of ceramic tiles:**



► Solution: **FLOORS in DRY INTERNAL areas – pre-finished or pre-sanded laminated wooden flooring:**



► Solution: **WALLS in DRY INTERNAL areas – application of a wall finish:**



► Solution: **WALLS in EXTERNAL areas – installation of ceramic tiles:**

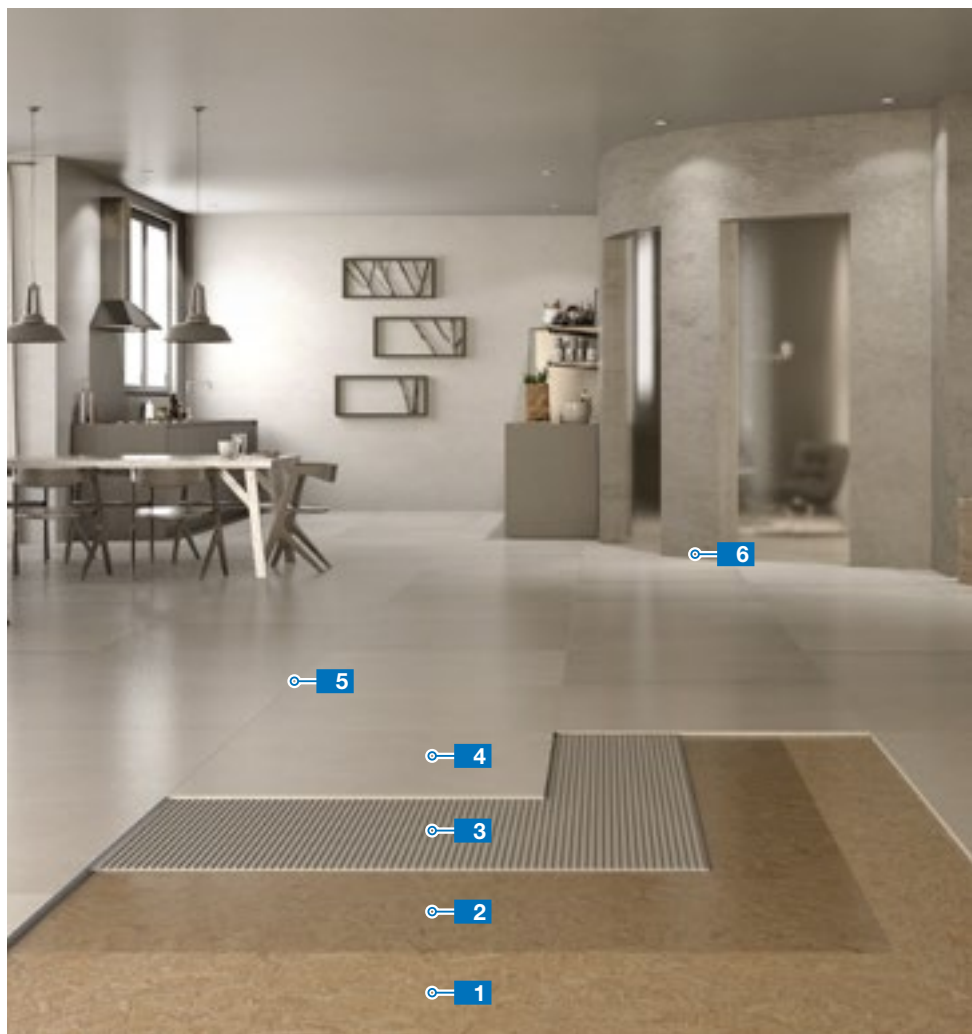


► Solution: **WALLS in EXTERNAL areas – application of a wall finish:**



(In the case of DAMP INTERNAL areas install a waterproofing system such as **AQUADEFENSE** waterproofing paste or **MAPEGUM WPS**)

Rapid system for installing porcelain tiles on OSB panels



1 OSB panel

2 Primer
ECO PRIM T



3 Adhesive
ELASTORAPID



4 Ceramic tiles

5 Grout
ULTRACOLOR PLUS



6 Sealant
MAPESIL AC



GYPSUM-FIBRE PANELS

They are made from two natural components, gypsum and cellulose fibres from selected, finely chopped recycled paper. This type of panel is widely used to install compact underfloor heating systems. Before installing the floor covering, the surface must be primed with **ECO PRIM T** or **PRIMER G** and then skimmed with a layer of NOVOPLAN MAXI at least 3 mm thick over the dimples in the panels. The floor covering must be installed using class S1 or S2 deformable adhesive.



► Solution: **FLOORS in DRY INTERNAL areas – installation of ceramic tiles:**



► Solution: **FLOORS in DRY INTERNAL areas – pre-finished or pre-sanded laminated wooden flooring:**



► Solution: **WALLS in DRY INTERNAL areas – application of a wall finish:**



System for thin porcelain tiles on underfloor thin heating system



1 Existing ceramic flooring

2 Sealant
ULTRABOND MS RAPID



3 Thin heating system
Gypsum-fibre board panels

4 Primer
ECO PRIM T



5 Smoothing compound
NOVOPLAN MAXI



6 Adhesive
ULTRALITE FLEX



7 Thin porcelain tiles
(LAMINAM 6 mm tiles)

8 Grout
KERACOLOR FF



9 Sealant
MAPEFLEX PU 45 FT

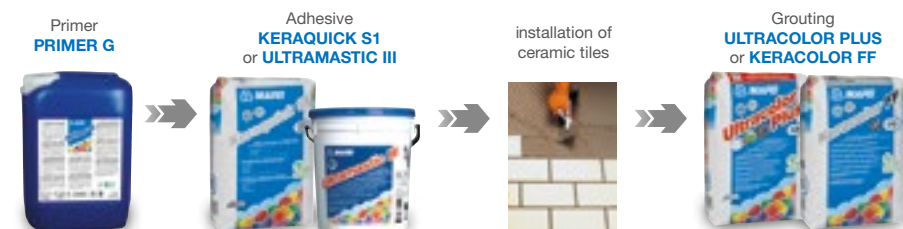


CALCIUM SILICATE PANELS

They are resistant to damp, have excellent dimensional stability and are very robust. They are used to make raised or floating floors, a very efficient way of laying cables and installing electrical fittings, but also an efficient way of controlling systems used to heat and cool rooms.



► Solution: **FLOORS** in **DRY INTERNAL** areas – installation of ceramic tiles:



► Solution: **FLOORS** in **DRY INTERNAL** areas – pre-finished or pre-sanded laminated wooden flooring:



► Solution: **WALLS** in **DRY INTERNAL** areas – installation of ceramic tiles:



► Solution: **WALLS** in **EXTERNAL** areas – application of a wall finish:



(In the case of **DAMP INTERNAL** areas install a waterproofing system such as **AQUADEFENSE** waterproofing paste or **MAPEGUM WPS**)

Rapid system for installing porcelain tiles on calcium silicate panels



1 Calcium silicate panels

2 Primer
PRIMER G



3 Adhesive
KERAQUICK S1

4 Ceramic tiles

5 Grout
ULTRACOLOR PLUS

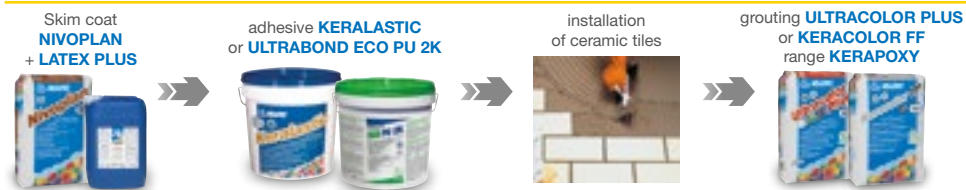


METAL SURFACES

Metal substrates must be fastened firmly in place and they must be clean and have no traces of oil, paint, grease, rust, etc. This type of substrate is completely non-absorbent and materials must be installed with reactive adhesive such as **KERALASTIC** or **ULTRABOND ECO PU2K**. In internal surroundings not subjected to high deformations, if the surfaces are rough enough, the use of **KERAQUICK S1** admixed with **LATEX PLUS** may also be considered. In external areas it is recommended to use epoxy-polyurethane or polyurethane products such as **KERALASTIC**, because their high deformability properties absorb any expansion that takes place in the metal substrate more efficiently. If an internal metal substrate needs to be skimmed, it is possible to apply a deformable skim coat with high adhesion properties by mixing **NIVORAPID** with **LATEX PLUS**.



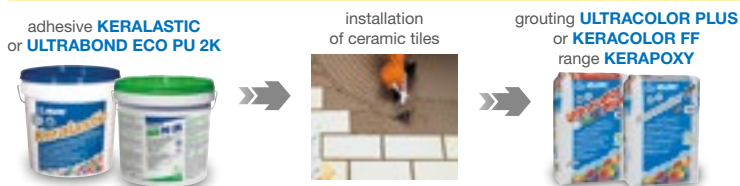
► Solution: **FLOORS in DRY INTERNAL areas** – installation of ceramic tiles:



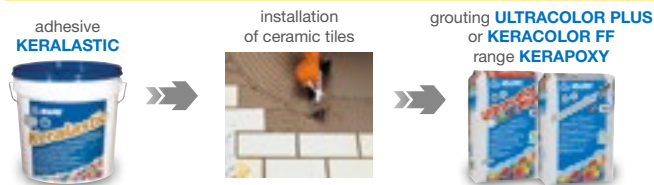
► Solution: **FLOORS in DRY INTERNAL areas** – pre-finished or pre-sanded laminated wooden flooring:



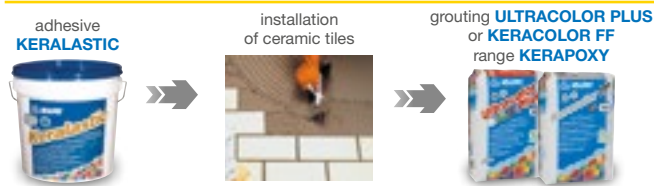
► Solution: **WALLS in DRY INTERNAL areas** – installation of ceramic tiles:



► Solution: **FLOORS in EXTERNAL areas** – installation of ceramic tiles:



► Solution: **WALLS in EXTERNAL areas** – installation of ceramic tiles:



(In the case of **DAMP INTERNAL** areas install a waterproofing system such as **AQUADEFENSE** waterproofing paste or **MAPEGUM WPS**)

System for the installation of ceramic tiles on metal surfaces



1 Metal sheet

2 Adhesive
KERALASTIC



3 Porcelain tiles

4 Grout
KERAPOXY CQ



5 Sealant
MAPESIL AC



DRY-INSTALLED COMPACT UNDERFLOOR HEATING SYSTEMS

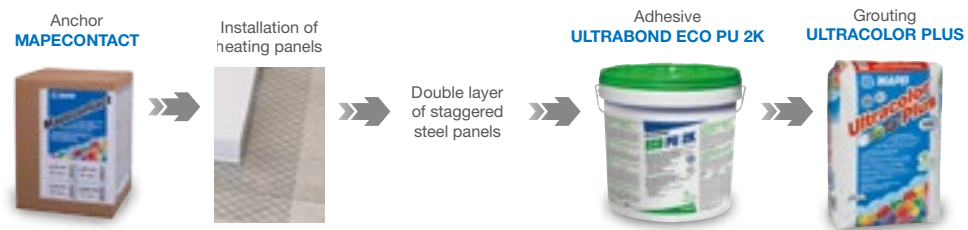
They are usually made from pre-formed panels placed over the substrate (screed or an old floor), if flat enough, using **MAPECONTACT** reinforced double-sided tape, which is positioned on the floor so that it forms a perfect bond along the long sides and in the middle of the panel. The pipework for the system is then placed in position and a double, staggered layer of steel or gypsum-fibre panels are dry-laid over the pipework.

When steel panels are used it is possible to form a complete system measuring less than 3 cm thick. The floor covering is then installed over the second layer using **ULTRABOND ECO PU 2K**.

If the heat distribution layer is made from gypsum fibre panels, the surface needs to be primed with **PRIMER G** diluted 1:1 with water before bonding the floor covering with highly deformable adhesive such as **ULTRALITE S2** or **ULTRALITE S2 QUICK**.

The information and advice contained in this manual are for indication purposes only and do not represent all the different situations that may be encountered on site. In the event of situations or conditions not covered by this manual, the MAPEI Technical Services team is available to help identify the most appropriate solution for each specific intervention. For further details about our products consult the relative product Technical Data Sheets available on our website www.mapei.it.

► Solution A:



► Solution B:



5

4

3

2

1

-

Notes: _____

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