13/17-1375_V4

Valid from **17 May 2021**

to **31 December 2022**

On the process

Stonepanel – Stonepanel sky

Holder(s): **CUPA PIERRES DISTRIBUTION**

Descriptor:

The STONEPANEL and STONEPANEL SKY systems are wall covering systems using natural stones and are designed for internal and external walls.

- The STONEPANEL process is glued only,
- The STONEPANEL SKY process is glued and mechanically fixed.

Specialist Group no. 13 - Process for installing coverings

Product family/Process: Wall covering

COMMISSION CHARGÉE DE FORMULER LES AVIS TECHNIQUES

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INTRODUCTION

The Technical Opinions and the Technical Application Documents are intended to provide those involved in construction with elements to assess how to design and build structures using construction products or processes whose constitution or use are not covered by traditional skills and practices.
At the end of a collective assessment, the technical opinion of the committee decides on the suitability for use of the products or processes in relation to the regulatory and usage requirements that the structure to be built must normally satisfy.

Document versions

Version	Description	Rapporteur	President
V4	This version cancels and replaces Technical Notice 13/17-1375 V3. This partial revision includes the following modification: - Increase in installation height from 12 m to 28 m	Virginie CORDIER	Christophe DUFOUR
V3	This version cancels and replaces Technical Notice 13/17-1375 V2. This partial revision includes the following modifications: - Addition of 3 new stone references, - Extension of the scope of application to masonry substrates in a seismic zone, following the performance of a test validating use with this substrate.	Julien ROUSSY	Christophe DUFOUR

Contents

1. Opinion of the Specialist Group

Specialist Group no. 13 - Process for installing coverings from the Committee responsible for preparing Technical Opinions examined, on 18 March 2021, the **STONEPANEL - STONEPANEL SKY** process presented by CUPA PIERRES DISTRIBUTION. It has prepared the below Technical Opinion on this process. The opinion has been prepared for uses in metropolitan France and in the DROM.

1.1. Succinct definition

1.1.1. Succinct description

The STONEPOANEL and STONEPANEL SKY systems are wall covering systems using natural stones and are designed for internal and external walls.

- The STONEPANEL process is glued only,
- The STONEPANEL SKY process is glued and mechanically

fixed. The complete system comprises:

- the STONEPANEL or STONEPANEL SKY element,
- tile glue,
- the stainless steel safety tie (STONEPANEL SKY),
- the dowel (STONEPANEL SKY).

• Dimensions of the elements:

- 610 x 152 mm
- 600 x 200 mm
- 600 x 300 mm

1.1.2. Identification

The trade description appears on the back of the elements.

The manufacturing date is indicated on the element.

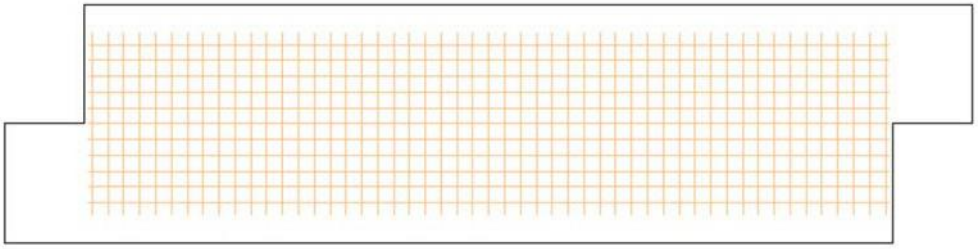
1.2. OPINION

1.2.1. Accepted area of use

STONEPANEL (figure 1) is used to install coverings:

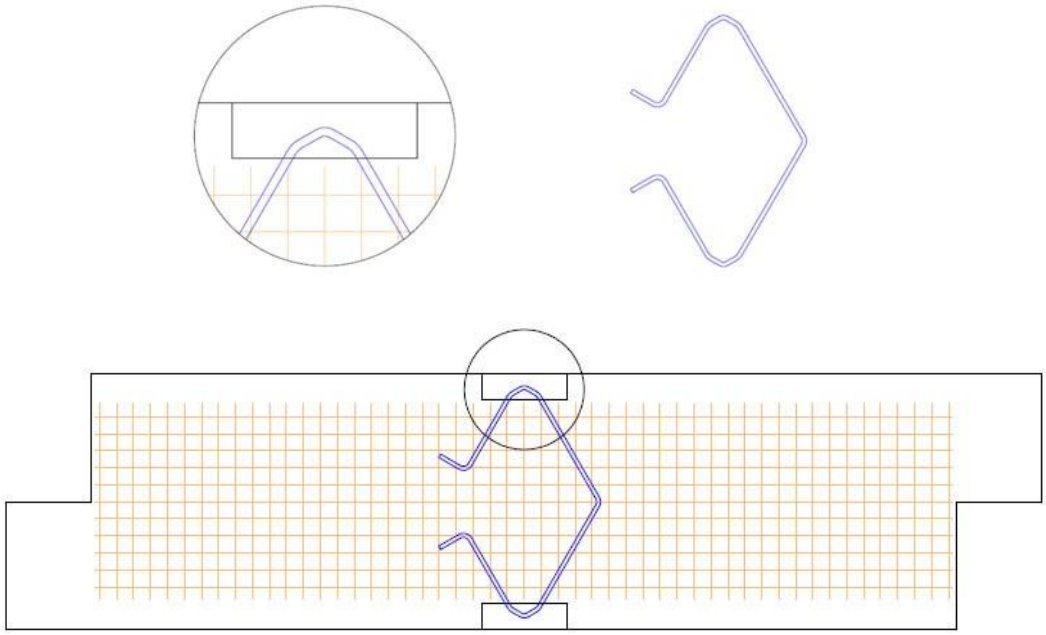
- on internal walls up to a height of 2.50 m,
- on external walls up to a height of 2 m.

Figure 1 – STONEPANEL



The STONEPANEL SKY process (figure 2) is used to install internal or external wall coverings, for structures with a height of up to 28 m.

Figure 2 – STONEPANEL SKY



STONEPANEL and STONEPANEL SKY are available in several finished (see table 2 of the Technical File). Smaller dimensions are available on request.

Corner pieces are also available.

Installation is limited to an altitude of 900 m (see NF DTU 52.2).

1.2.2. Assessment of the process

1.2.2.1. Compliance with the laws and regulations in force and other qualities of suitability for use

Environmental data

The process does not have an Environmental Product Declaration (EPD) so no specific environmental performance can be claimed. It is reminded that the EPD does not fall within the scope of the examination of the process' suitability for use.

Health aspects

This opinion is formulated with regard to the holder's written commitment to comply with the regulations, and in particular all the regulatory obligations relating to products that may contain dangerous substances, for their manufacture, their integration into structures in the accepted area of use and the exploitation thereof.

The control of information and declarations issued in application of the regulations in force does not fall within the scope of this opinion. The holder of this opinion is entirely responsible for its information and declarations.

Accident prevention, accident management and risk management during installation and maintenance

The process has a Safety Data Sheet (SDS). The purpose of the SDS is to inform the user of this process of the dangers associated with its use and of the preventive measures to be adopted to avoid such dangers, in particular by wearing personal protective equipment (PPE).

Stability in seismic zones

The STONEPANEL- STONEPANEL SKY process can be implemented on a poured concrete base and coated masonry in areas and buildings according to the table below (according to the decree of 22 October 2010 and its amendments):

Table 1

Seismic zones	Building Importance Category Classes			
	I	II	III	IV
1	X	X	X	X
2	X	X	X	X
3	X	X	X	X
4	X	X	X	X
5	X	X	X	X
X	Installation authorised with no specific provisions in according to the accepted area of use.			

1.2.2.2. Suitability for use

Fire safety

The STONEPANEL and STONEPANEL SKY processes are installed using the mortar set out in § 2.4.2 of the Technical File.

The processes benefit from European fire reaction classification A2-s1,d0 (see RA18-0226 of 11 October 2018) within the meaning of standard NF EN 13501-1+A1 valid for glued installation on any substrate classified A1 or A2 -s1,d0 with density ≥ 1350 kg/m³ and thickness ≥ 6 mm.

User safety

User safety is not brought into question in the STONEPANEL and STONEPANEL SKY process, with the glueing provisions associated with the installation of the safety ties mitigating any consequences of a bonding issue.

Adherence

The installation conditions set out in the Technical File appear to provide satisfactory results.

1.2.2.3. Durability - Maintenance

A failure, which is always possible in the long term in the bonding plane, should nevertheless remain without significant consequence, in as far as the stainless steel metal ties (compulsory beyond 2.50 m in height) will keep the STONEPANEL SKY elements in place, thereby ensuring safety and conservation during repairs.

The durability of the work can be assessed as equivalent to that of tiles glued to a façade.

1.2.2.4. Production and verification

This opinion is formulated taking into account the controls and manufacturing verification methods described in the Technical File.

1.2.2.5. Installation

Installation is by way of a glued installation with safety ties if necessary.

This process requires compliance with the flatness tolerances of the substrate and requires careful implementation, particularly in the treatment of special points.

1.2.3. Technical Provisions

1.2.3.1. Design conditions

To install the STONEPANEL SKY element, the choice of fixing dowels must be determined taking into account the action of the wind in depression (external walls) and the resistance of the dowels in the substrate in question.

The admissible load of the dowels is equal to 1/K times the characteristic resistance indicated in the European Technical Agreement of the dowel or:

K = 1.75 in comparison to normal wind

and K = 3 in comparison to strong wind

1.2.3.2. Installation conditions

The following provisions of the "Technical specifications" apply:

- for internal walls NF DTU 52.2 A1 P1-1-1,
- for external walls NF DTU 52.2 A1 P1-1-2, with the installation limitation indicated in § 7 of this same DTU for coverings whose solar radiation absorption coefficient is greater than 0.7.

supplemented as follows:

- the glued installation must be carried out using double glueing, using a "QB" mortar classified C2 (internal walls) or C2-S1/S2, façade (external walls), defined in § 2.4.2 of the Technical File,
- the safety tie (STONEPANEL SKY),
- dowels suitable for the substrate must be used to fix each element to the substrate.

The façade should be checked regularly (once a year) and repaired quickly if necessary (see § 2.7.5 of the Technical File).

1.2.3.3. Technical assistance

CUPA PIERRES DISTRIBUTION is required to provide technical assistance to installation companies on request.

Note: This assistance cannot be assimilated either to the design of the structure, or to the acceptance of the substrates, or to any verification of the installation rules.

Overall assessment

Use of the process in the accepted area of use (see paragraph 1.2.1) is assessed favourably.

1.3. Additional comments from the Specialist Group

Natural stones must be subject to at most identity test reports every 2 years and suitability for use every 10 years in accordance with the requirements of standard NF B 10-601.

The stone characterization sheet must be available, including for implementation of Stonepanel and Stonepanel Sky in the DROMs.

2. Technical File

From the file prepared by the holder

2.1. Trade data

2.1.1. Details

Holder(s): Cupa Pierres Distribution

3 rue du Pont des Landes
FR-78310 Coignières

Tel.: 01 30 49 69 86
Fax: 01 30 49 69 87

2.2. Description

The STONEPANEL and STONEPANEL SKY systems are wall covering systems using natural stones and are designed for internal and external walls.

- The STONEPANEL process is glued only,
- The STONEPANEL SKY process is glued and mechanically

fixed. The complete system comprises:

- the STONEPANEL or STONEPANEL SKY element,
- tile glue,
- the stainless steel safety tie (STONEPANEL SKY),
- the dowel (STONEPANEL SKY).

- Dimensions of the elements:
  - 610 x 152 mm
  - 600 x 200 mm
  - 600 x 300 mm

2.3. Area of use

STONEPANEL (figure 1) is used to install coverings:

- on internal walls up to a height of 2.50 m,
- on external walls up to a height of 2 m.

The STONEPANEL SKY process (figure 2) is used to install internal or external wall coverings, for structures with a height of up to 28 m.

STONEPANEL and STONEPANEL SKY are available in several finished (see table 2). Smaller

dimensions are available on request.

Corner pieces are also available.

Installation is limited to an altitude of 900 m (see NF DTU 52.2).

2.3.1. Type of substrates

On internal walls, the substrates accepted are those defined in NF DTU 52-2 P1.1.1 and A1 (P 61-204-1-1-1) "Specifications for internal walls" specified below (they must be at least 6 cm thick):

- concrete walls,
- prefabricated concrete panels,
- cement-based coverings (category CS III or CS IV) on concrete walls (STONEPANEL SKY only with dowel adapted to the load-bearing support is covered) and walls in coated masonry.

On external walls, the substrates accepted are those defined in NF DTU 52.2 P1-1-2 and A1 (P 61-204-1-1-2) "Specifications for external walls".

2.3.2. Type of premises

on internal walls, installation is allowed in premises whose degree of exposure to water is EB+ private at most, outside the areas of influence of the shower tray, the bathtub and water points.

2.4. Materials

2.4.1. Product definition - Production principle

Natural stone elements sealed in a cement mortar comprising:

- cement CEM I 42,5, 52,5 N
- silica sand
- natural stones compliant with NF B 10-601 (see table 2)
- adjuvants
- alkali-resistant fibreglass mesh
- metal stainless steel anchor AISI 304 (STONEPANEL SKY)

Characteristics

- Geometric characteristics and mass of the elements (see table 2)
- Bending resistance (NF EN 1015-11): ≥ 9 N/mm²
- Perpendicular pull-out resistance of the dowel (CSTB method): ≥ 400 daN
- Fire reaction: A2-s1,d0 within the meaning of standard NF EN 13501-1+A1

Table 2 - Trade names STONEPANEL and STONEPANEL SKY.

For STONEPANEL SKY: use internally or externally limited to a height of 28 m for the following:					
Trade names	**Stone**	**Origin**	**Formats (mm)**	**Mass (kg)**	**Thicknesses (mm)**
Stonepanel Nilo	Limestone rock	Xinmi, Henan	600 x 200	8.8	20 - 40
Stonepanel Nilo Antique	Limestone rock	Xinmi, Henan	600 x 200	7.5	30 - 35
Stonepanel Calcaire Cupableu	Limestone	Jining, Shandong	600 x 200	8.8	30 - 40
Stonepanel Grès Blanc	Sandstone	Zuoquan, Shanxi	600 x 200	8.8	30 - 40
Stonepanel Marina	Sandstone	Zhangjiakou, Hebei	600 x 200	10.5	30 - 50
Stonepanel Multicolor	Slate	Xiyu, Yi, Hebei	610 x 152 600 X 200	7.5 9.4	20 - 40
Stonepanel Multicolor Lame Fine	Slate	Xiyu, Yi, Hebei	600 x 200	9.4	30 - 45
Stonepanel Nordic	Limestone rock	Louzishui, Fangshan, Beijing; Xushui, Hebei; Xi, Hebei	600 x 200	9.6	30 – 50
Stonepanel Sylvestre	Granite gneiss	Neiqiu, Lincheng Xingtai, Hebei	600 x 200	10.5	30 – 50
Stonepanel Sylvestre Antique	Granite gneiss	Neiqiu, Lincheng Xingtai, Hebei	600 x 200	7.5	30 – 35
Gneiss XXL	Granite gneiss	Neiqiu Lincheng, Hebei	600 x 300	14.1	30 – 50
Stonepanel Orient	Quartzize	Louzishui, Fangshan, Beijing	610 x 152 600 x 200	7 8.8	20 - 40
Stonepanel Sahara	Gneiss	Neiqiu, Lincheng Xingtai, Hebei	600 x 200	10.5	30 – 50
Sahara XXL	Gneiss	Zhao, Lincheng Xingtai, Hebei	600 x 300	14.1	30 – 50
Stonepanel Ardoise Noire	Slate	Shaodong, Yi, Hebei	600 x 200	8.8	20 - 40
Stonepanel Jet Noir Lames Fines	Slate	Xiayunling, Fangshan, Beijing	610 x 152 600 x 200	7.7 8.8	20 - 45
Stonepanel Saint Yrieix	Gneiss	Saint-Yrieix La Perche, Limoges	600 x 200	10	20 – 40
Stonepanel Infercoa	Slate	Vila Nova de Foz Côa, Guarda	600 x 200	10	20 - 40
Stonepanel Sabbia	Travertine	Western Anatolia, Turkey	600 x 200	10	20 – 40
Stonepanel Sálvora	Slate	Galicia, Spain	600 x 200	10	20 – 40
Stonepanel Doré	Quartzize	Minas Gerais, Brazil	600 x 200	10	20 - 40

Table 3 – Physical characteristics of the natural stones

Stones	**Origin of the stones**	**Apparent volumetric mass**	**Open porosity**	**Bending resistance under centred load**	**Water absorption by capillarity of masonry elements (perpendicular)**	**Bending strength under centered load after 24 cycles freeze/thaw**
		NF EN 1936	**NF EN 1936**	**NF EN 12372**	**NF EN 772-11**	**NF EN 12371+12372**
Saint Yrieix gneiss	Saint-Yrieix La Perche, Limoges	2495 kg/m3	4.2%	19.6 MPa	51 g/(m2·s0,5)	18.0 MPa
Sylvestre	Neiqiu, Lincheng Xingtai, Hebei	2605 kg/m3	1.2%	10.0 MPa	2 g/(m2·s0,5)	12.8 MPa
Sahara	Neiqiu, Lincheng Xingtai, Hebei	2774 kg/m3	0.5 %	19.6 MPa	1 g/(m2·s0,5)	18.9 MPa
Ardoise Noire	Shaodong, Yi, Hebei	2820 kg/m3	0.7%	39.6 MPa	1 g/(m2·s0,5)	37.2 MPa
Nilo	Xinmi, Henan	2575 kg/m3	2.5%	23.1 MPa	2 g/(m2·s0,5)	23.5 MPa
Cupableu	Jining, Shandong	2755 kg/m3	0.5 %	15.5 MPa	1 g/(m2·s0,5)	13.3 MPa
Grès Blanc	Zuoquan, Shanxi	2592 kg/m3	2.4%	13.2 MPa	6 g/(m2·s0,5)	11.7 MPa
Marina	Zhangjiakou, Hebei	2337 kg/m3	6.0%	14.0 MPa	7 g/(m2·s0,5)	12.6 MPa
Multicolor	Xiyu, Yi, Hebei	2704 kg/m3	2.1%	29.6 MPa	4 g/(m2·s0,5)	22.2 MPa
Nordic	Louzishui, Fangshan, Beijing; Xushui, Hebei; Xi, Hebei	2764 kg/m3	0.7%	28.3 MPa	4 g/(m2·s0,5)	22.9 MPa
Orient	Louzishui, Fangshan, Beijing	2657 kg/m3	0.4%	17.5 MPa	0 g/(m2·s0,5)	16.5 MPa
Ardoise Infercoa	Vila Nova de Foz Coa, Guarda	2757 kg/m³	0.4%	56.9 MPa	0.4 g/(m2·s0,5)	56.3 MPa
Sabbia	Turkey	2400 kg/m³	3.1 %	9.1 MPa	1.86 g/(m2·s0,5)	9.1 MPa
Sálvora	Spain	2718 kg/m³	2.6%	13.6 MPa	3.71 g/(m2·s0,5)	18.8 MPa…
Doré	Brazil	2637 kg/m³	0.4%	29.4 MPa	9.54 g/(m2·s0,5)	30.4 MPa

2.4.2. Mortars

The mortars used for glueing in the STONEPANEL or STONEPANEL SKY process must have a valid "QB" certificate.

For installation on internal walls, a C2 or C2-S1/S2 mortar must be used.

For installation on external walls, a C2-S1/S2 mortar listed below must be used.

Mortar	Company
TECHNOSTAR	SIKA Italia
572 PROLIFLEX XL	PAREXGROUP
KERABOND T + ISOLASTIC	MAPEI France
PRB COL MONOFLEX HP	PRB

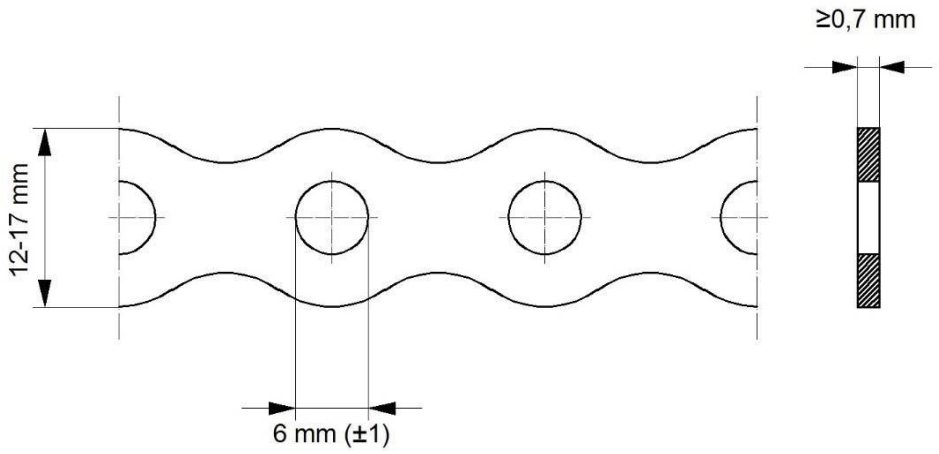
2.4.3. Safety element for installing STONEPANEL SKY

- Perforated stainless steel strip (figure 3).

Characteristics

- Type of steel: AISI 316 (1.4401) or AISI 304 (1.4301)
- Minimum thickness (mm): ≥ 0.7
- Width (mm): 12 - 17
- Hole diameter (mm): 6 ± 1

Figure 3 – Safety element: perforated strip



2.4.4. Dowels

The dowels must be adapted to the nature of the load-bearing support and benefit from a European Technical Assessment.

2.4.5. LD profile

L-shaped metal profile with wings of various dimensions:

- internal use: galvanised steel profile,
- external use: stainless steel profile,

2.4.6. Mastics

Polyester resin-based mastics:

- REMBER-QUICK Q651,
- MASILLA TIXO COLORES,
- COLLE MASTIC POLYESTER, Abrasifs France.

2.5. Production and storage

The natural stone slabs are manufactured in a factory in China (Xifan city, Yixian county, Hebei province).

The natural stone slabs of the Saint Yrieix reference are manufactured in a factory in France (Carrière de Bord, St Yrieix le Perche).

The natural stone slabs of the Infercoa, Sabbia and Sálvora references are manufactured in a factory in Portugal (Vila Nova de Cerveira).

The checks on the constituents are as follows:

- sand: grain size and humidity (each delivery)
- cement: supplier certificate with each delivery (mechanical resistance and visual inspection)
- glue: supplier certificate with each delivery (dry extract and pH)
- superplasticizer: supplier certificate with each delivery (solid content and pH)
- mesh: supplier certificate with each delivery (dimensions, density and resistance)
- stones: identity tests and aptitude tests according to standard NF B 10-601
- metal anchor: supplier's certificate with each delivery (chemical composition) Paste

checks are carried out with each mix.

Finished products are subject to the following checks:

- appearance (each part)
- dimensions (each part)
- adhesion between stone and mortar (5 monthly tests in the factory, 5 tests per container in France and Portugal) The

elements are stored in bulk in covered premises (China) and on film-wrapped pallets (France and Portugal).

2.6. Installation

2.6.1. Pre-treatment (figures 4a and 4b)

Before the implementation of the STONEPANEL/STONEPANEL SKY process, an initial horizontal substrate must be made with a stainless steel or galvanised profile (galvanised profile only on internal walls) or temporary wedging when laying the 1st row (wedging removed after setting of the mortar).

Figure 4a – External installation with a metal profile

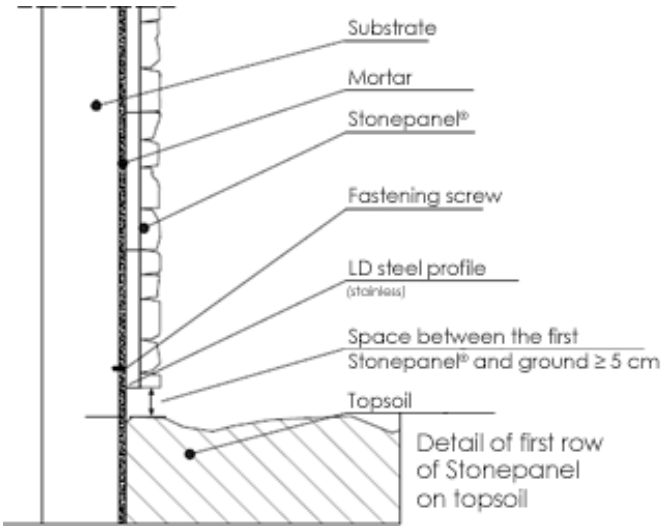
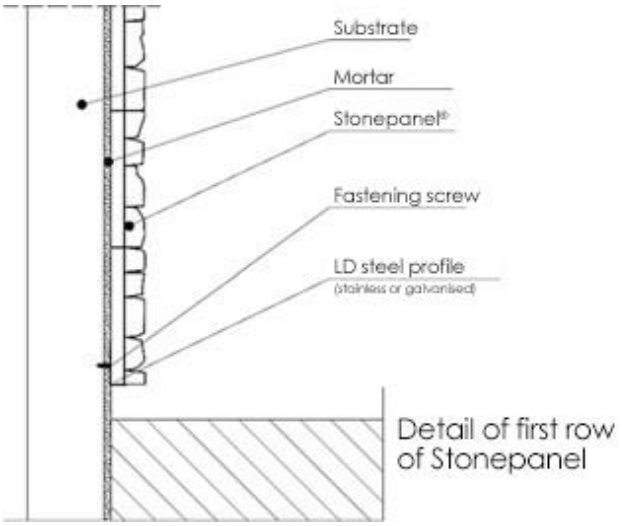


Figure 4b – Internal installation with a metal profile



2.6.2. Installation of the STONEPANEL system

2.6.2.1. Determination of the substrate and possible preparation

The general provisions for determination of the substrate and its preparation are the same as for direct glueing (see Technical specifications of NF DTU 52.2 A1 (P61-204-1-1-1 and P61-204-1-1-2)).

2.6.2.2. Implementation of the STONEPANEL element (figures 5a and 5b)

The STONEPANEL element is fitted in accordance with the provisions of the Technical specifications of NF DTU 52.2 A1 (P61-204-1-1-1 and P61-204-1-1-2):

- Internally, the installation is carried out using double glueing with a C2 "QB" adhesive mortar using a U8 spatula so as to respect a consumption of 3.5 to 4 kg of powder per m²,
- Externally, the installation is carried out using double glueing with a C2-S1/S2 "QB" adhesive mortar using a U8 spatula so as to respect a consumption of 3.5 to 4 kg of powder per m²,

  In the case of the Saint Yrieix, Infercoa, Sabbia, Sálvora and Doré finishes, more glue will be required due to the relief of the surface to be glued.
- Staggered joints are used for the fitting.
- Special pieces are available for corners.

There must be a space between the last STONEPANEL row and the ceiling.

Figure 5a – Installation of STONEPANEL on external walls

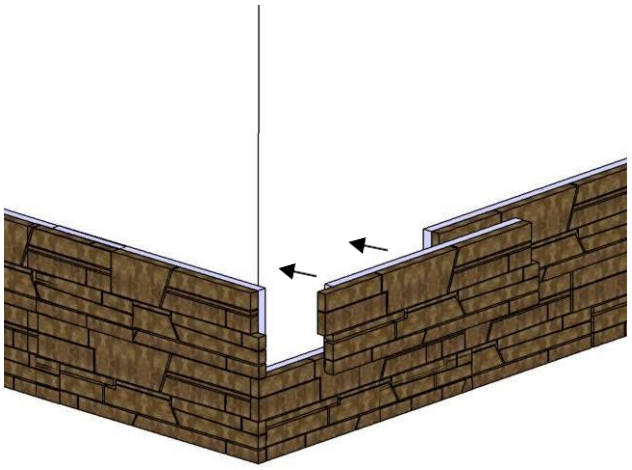
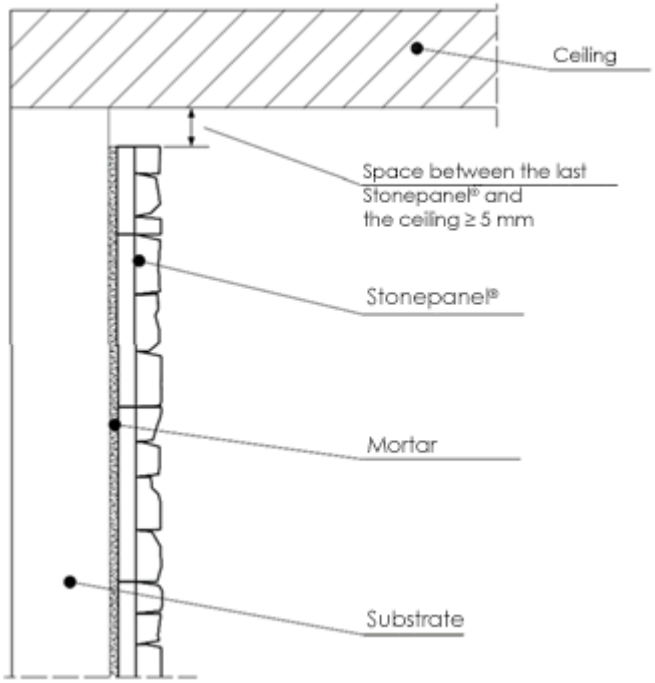


Figure 5b – Installation of STONEPANEL on internal walls



2.6.2.3. Grouting

This process does not require joints between the elements.

2.7. Installation

2.7.1. Determination of the substrate and possible preparation

The general provisions for determination of the substrate and its preparation are the same as for direct glueing (see Technical specifications of NF DTU 52.2 A1 (P61-204-1-1-1 and P61-204-1-1-2)).

Choice of dowel

To install the STONEPANEL SKY element, the choice of fixing dowels must be determined taking into account the action of the wind in depression (external walls) and the resistance of the dowels in the substrate in question depending on the type of substrate. An example of a suitable dowel is TAPCO TC 6/30 x 60.

The admissible load of the dowels is equal to 1/K times the characteristic resistance indicated in the European Technical Assessment of the dowel relating to the application of the process where:

K = 1.75 in comparison to normal wind

and K = 3 in comparison to strong wind

2.7.2. Installation of the STONEPANEL SKY element with perforated strip (figure 6)

- Cut a length of safety tie and bend the tie in the middle, pass the tie through the ring of the STONEPANEL SKY element.
- Fit the STONEPANEL SKY element in accordance with the provisions of the Technical specifications of NF DTU 52.2 A1 (P61-204-1-1-1 and P61-204-1-1-2), supplemented as follows:
  - Fitting is carried out using C2-S1 mortar, set out in § 2.4.2, with double glueing using a U8 spatula.

    In the case of the Saint Yrieix, Infercoa, Sabbia, Sálvora and Doré finishes, more glue will be required due to the relief of the surface to be glued.
- Mark the location of the fastening and drill it
- Install the dowel suited to the type of substrate.
- Fit the safety tie.
- Staggered joints are used for the fitting.

Figure 6– STONEPANEL SKY: installation of the safety element



2.7.3. Treatment of special points

2.7.3.1. Internal corners

The STONEPANEL/STONEPANEL SKY elements are cut to the dimensions necessary to form an abutment (figure 7).

Figure 7 – Use of an internal corner



2.7.3.2. External corners

2.7.3.2.1. External corners with STONEPANEL/STONEPANEL SKY continuity

External corners are managed:

- either by using corner elements (figure 8a),
- or by using preformed corners (figure 8b), limited to a height of 2.50 m,
- or by sawing a corner using the STONEPANEL/STONEPANEL SKY element (figure 8c).

Figure 8a - External corners with STONEPANEL/STONEPANEL SKY continuity - corner elements

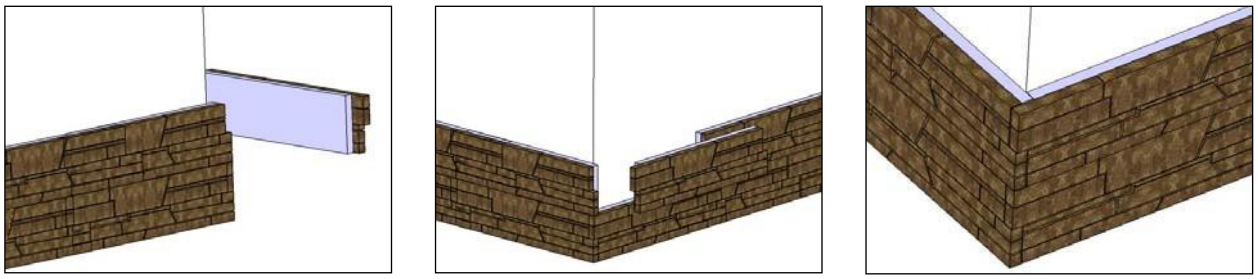


Figure 8b - External corners with STONEPANEL/STONEPANEL SKY continuity - preformed corners

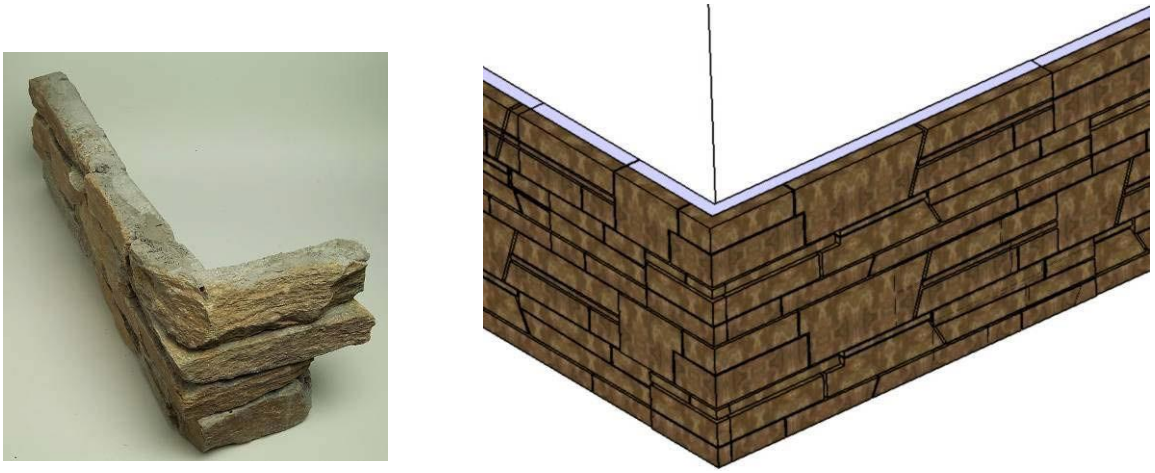
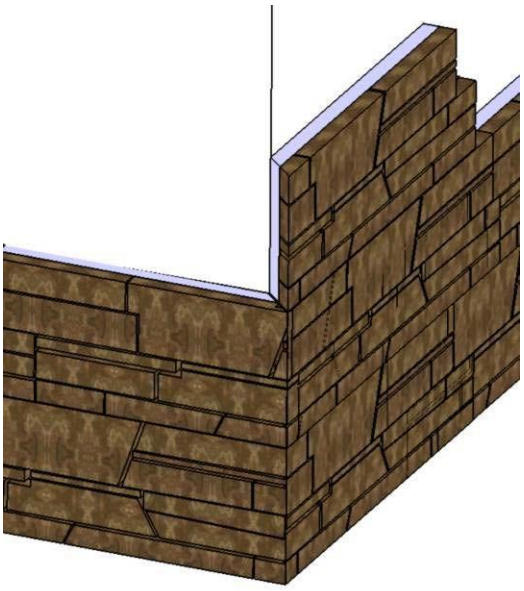


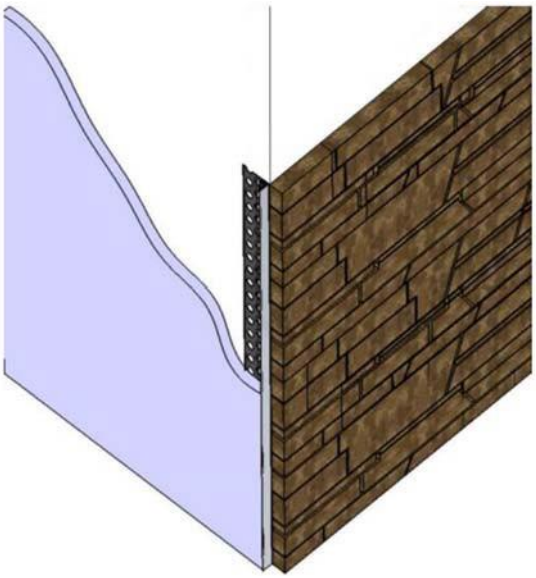
Figure 8c - External corners with STONEPANEL/STONEPANEL SKY continuity - sawing of a STONEPANEL/STONEPANEL SKY element



2.7.3.2.2. External corners without STONEPANEL/STONEPANEL SKY continuity

When STONEPANEL/STONEPANEL SKY is installed on a single gable, a suitable corner profile must be used for the external corner (figure 9).

Figure 9 - External corners without STONEPANEL/STONEPANEL SKY continuity - case of a single gable



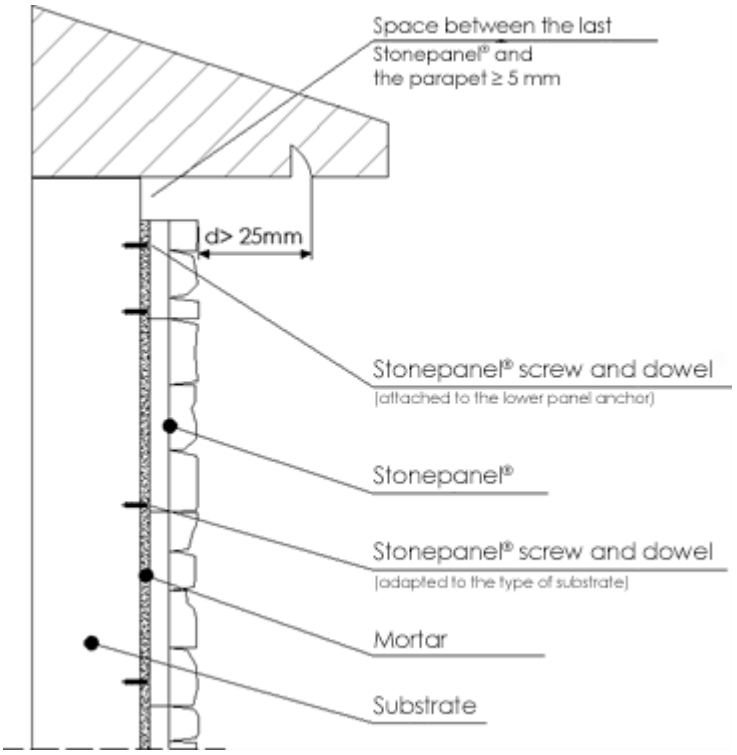
2.7.3.3. Installation of the last row of Stonepanel Sky

- Cut the top part of the Stonepanel Sky element according to the desired height.
- Cut a length of safety tie and bend the tie in the middle, pass the tie through the lower ring of the STONEPANEL SKY element.
- Mark the location of the fastening on the wall and drill it.
- Fit the dowel adapted to the type of substrate and fit the safety tie with a stainless steel flat-head screw.
- The STONEPANEL SKY panel on the last row is installed as in the current part.

2.7.3.4. Upper edges - Parapet top

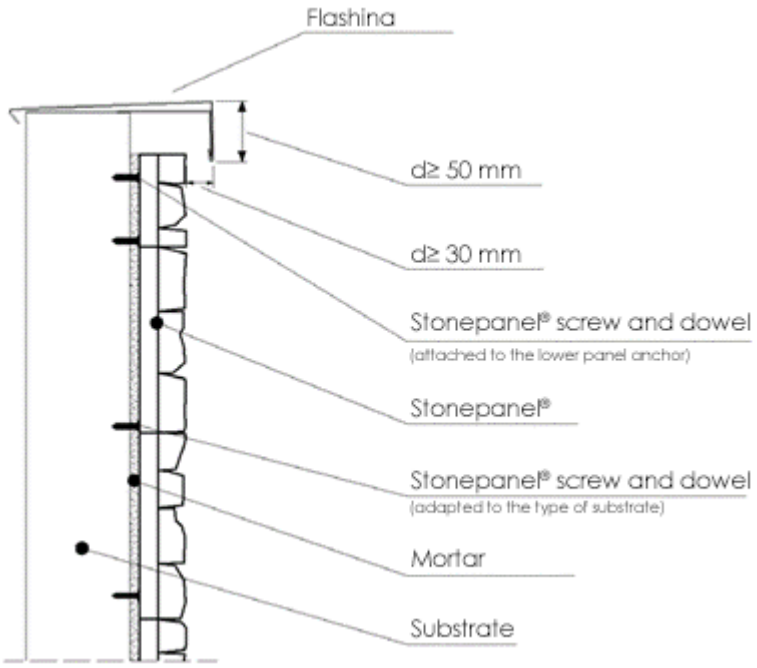
The upper edges must be protected by a cornice, strips or flaps (figure 10).

Figure 10 – Top edges



The parapet top must be protected with flashing which is freely expandable (figure 11).

Figure 11 – Parapet top

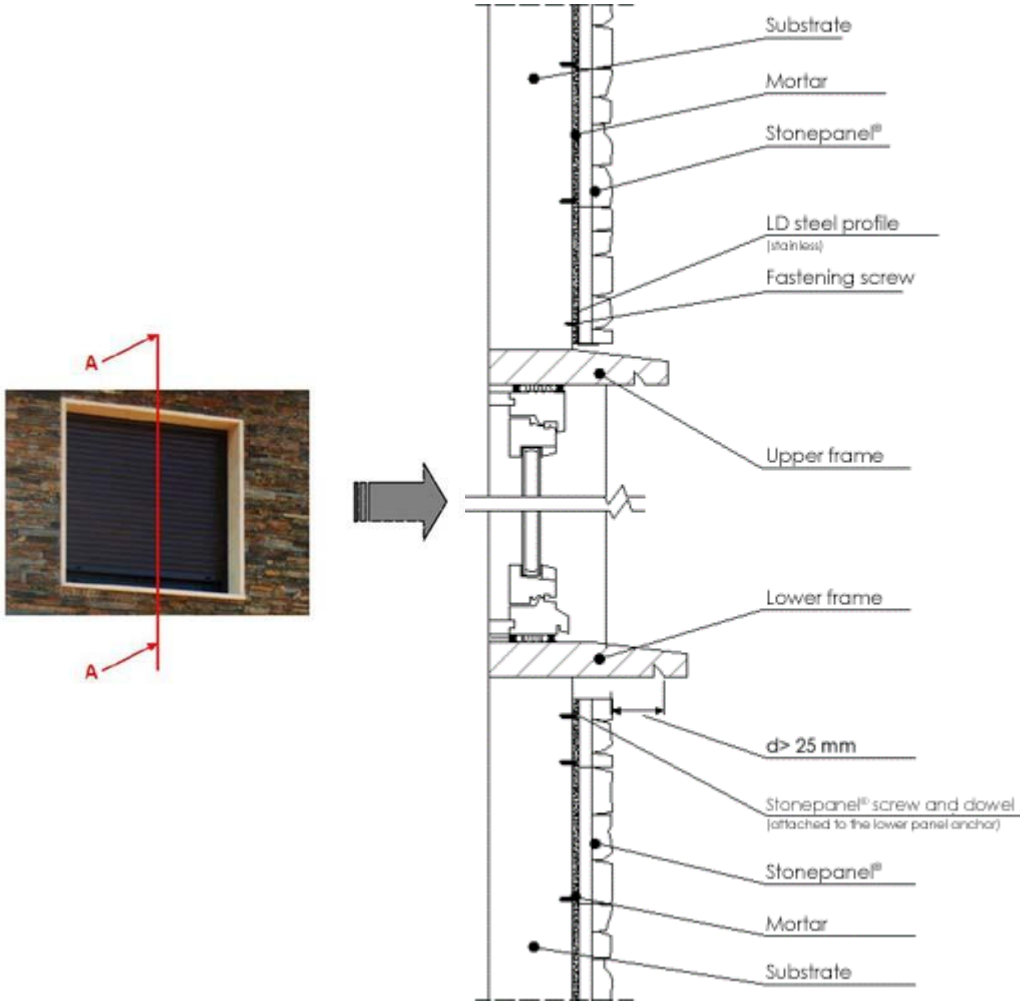


2.7.3.5. Windows

Windows will be managed using:

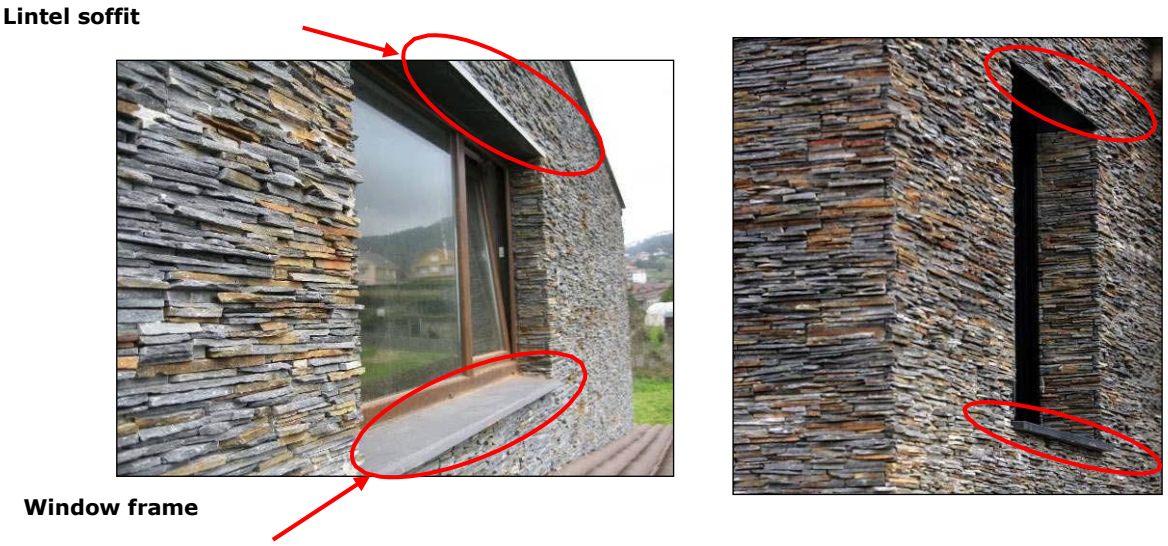
- either a window frame (figure 12),

Figure 12 – Window frames



- or a window sill and a lintel soffit (figure 13).

Figure 13 – Windows



2.7.4. Grouting

This process does not require joints between the elements.

2.7.4.1. Expansion joint

This is a completely reserved space, filled during finishing work with a putty that does not stain the covering elements. A stainless metal profile or a PVC profile with a compressible and UV-resistant filling can also be used.

They are arranged approximately every 60 m² (which corresponds to horizontal joints at most every 6 m and vertical joints at most every 10 m).

2.7.5. Repairs (figures 14a and 14b)

In an element becomes detached:

- The detached STONEPANEL SKY is removed along with any traces of glue on the substrate.
- Fitting of the new STONEPANEL SKY element is carried out using C2-S1 mortar, set out in 2.2, with double glueing using a U8 spatula.
- Cut a length of safety tie and bend the tie in the middle, pass the tie through the lower ring of the STONEPANEL SKY element.
- Mark the location of the fastening on the wall and drill it.
- Fit the dowel adapted to the type of substrate and fit the safety tie with a stainless steel flat-head screw.
- The new STONEPANEL SKY element is fitted.

Figure 14a - Repair

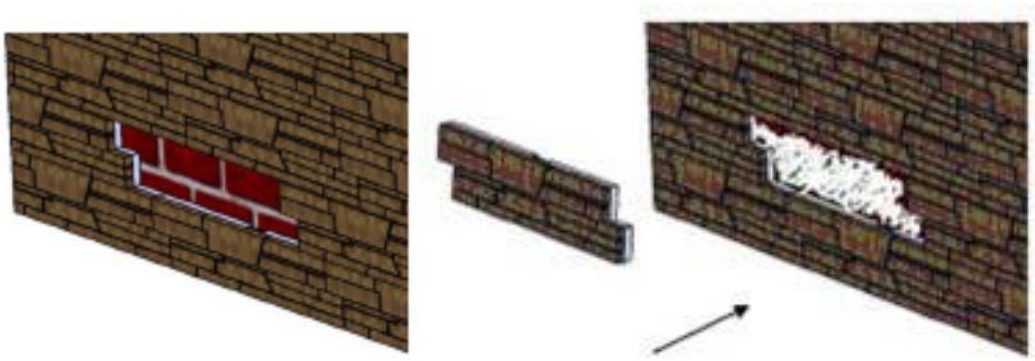
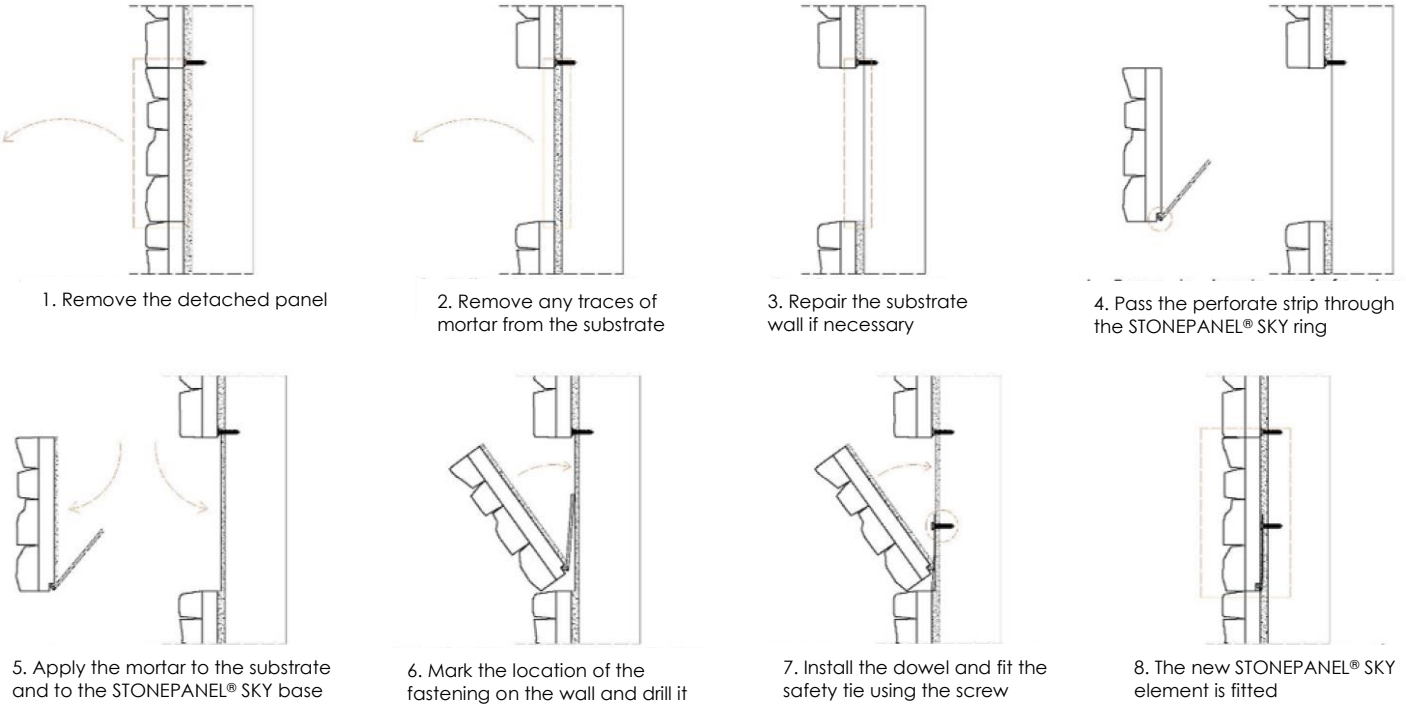


Figure 14b – Installation with bottom tie



2.8. Technical assistance

CUPA PIERRES DISTRIBUTION provides staff training and/or on-site start-up assistance to users who request it, in order to share the specific provisions for implementing the product.

Note: This assistance cannot be assimilated either to the design of the structure, or to the acceptance of the substrates, or to any verification of the installation rules.

2.9. Experimental results

Tests have been performed at the CSTB, test reports no. DEIS/R2EM 17-081 and DSR/SOLS 20-053:

- Mechanical resistance of the mounting,
- Mechanical resistance of the safety tie,
- Durability tests after the action of water,
- Durability tests after the action of frost.

- Seismic test: RE CSTB no. MRF 14-26043712 of 8 July 2014 and MRF 19-26079937 of 4 June 2019.

- European fire reaction classification report no. RA18-0226 of 11 October 2018.

2.10. References

2.10.1. Environmental data[1]

The STONEPANEL - STONEPANEL SKY process is not the subject of an Environmental Product Declaration (EPD). Therefore, no specific environmental performance can be claimed. Data from the EPD is notably used to calculate the environmental impacts of the structures in which the processes in question are likely to be integrated.

2.10.2. Other references

Product launch: October 2006 in France and January 2005 in Spain. Size of the sites:

of the sites: several thousand m² in France.

1 Not examined by the Specialist Group in the context of this opinion.