Façade cladding
Fascias
Soffits
Single-skin panels
Sandwich panels

...à la carte.

exterior

®TRESPA

All the best qualities in one panel

Contents

General information.

Trespa Meteon® is

- a high-quality building product from Trespa International B.V.
- specifically developed for durable exterior cladding
- architecturally versatile
- technically advanced
- economical
- environmentally friendly

Product data Trespa Meteon.

Material properties Trespa Meteon			
Properties	**Value**	**Unit**	**Standard**
Physical properties			
Specific gravity	*≥ 1,350*	*kg/m³*	*ISO 1183*
Dimensional stability	*≤ 2.5*	*mm/m*	*--*
Water absorbtion	*≤ 1.0*	*% weight*	*EN 438*
Optical properties			
Colour stability	*4-5 (2,500 hrs; Xenon test)*	*Grey Scale*	*ISO 105 A02-93*
Mechanical properties			
Modulus of elasticity	*≥ 9,000*	*N/mm²*	*ISO 178*
Tensile strength	*≥ 70*	*N/mm²*	*ISO 527-2*
Flexural strength	*≥ 120*	*N/mm²*	*ISO 178*
Surface impact resistance	*≥ 40*	*N*	*EN 438*
Scratch resistance	*≥ 3.5*	*N*	*EN 438*
Thermal properties			
Thermal conductivity	*± 0.3*	*W/mK*	*DIN 52612*
Chemical properties			
SO_2-resistance	*4-5 (50 cycles; approx. 0.0067%)*	*Grey Scale*	*DIN 50018*
Fire behaviour			
Great Britain	*Type FR: Class 0*		*BS 476 Parts 6-7*
Fire classification	*Type Standard: Class 2/3*		*Building regulations*
Netherlands	*Type FR: Klasse 1*		*NEN 6065*
Brandklasse	*Type Standaard: Klasse 2*		*NEN 6065*
Germany	*Typ FR: Klasse B1*		*DIN 4102*
Baustoffklasse	*Typ Standard: Klasse B2*		*DIN 4102*
France	*Type FR: Classement M1*		*NF P 92-507-UNE 23727*
Réaction au feu	*Type Standard: Classement M3*		*NF P 92-507-UNE 23727*
Indice de fumée	*Type FR: Classement F1*		*NF X 10-702*
Toxicité des gaz de combustion	*Type Standard: Classement F1*		*NF X 70-100*

Application and delivery programme.

Unique and special

Trespa Meteon is a flat panel, based on thermosetting resins, homogeneously reinforced with wood fibres and manufactured under high pressure and at high temperatures, using a proprietary technology (EBC). The panels have an integrated decorative surface.
Trespa Meteon is used for façade cladding, fascias, soffits, balcony panels and balustrades, urban furniture, sandwich panels and a wide range of other exterior applications.
Trespa Meteon is highly suited for ventilated facade systems. These “breathing” or envelope systems offer possibilities for high insulation values, perfect building physics and contribute to a healthy indoor climate.
In Summer, excessive solar heat can be vented away through the ventilation between the panels and the insulation materials.

Trespa Meteon is available in more than 50 colours, with one or both decorative surfaces. The panels have a finely structured surface (satin). For high quality architectural applications Trespa developed an entire new concept: INSPIRATIONS. At the moment Trespa introduces five different kinds of façade cladding panels through Inspirations: Naturals, Metallics, Natural Prints, Gloss and Rock. Please contact Trespa for further information. The delivery programme of Trespa Meteon furthermore offers a standard type with black core and a fire retardant panel with brown core.

Trespa also offers Meteon corner profile elements that meet the same high standards of Trespa Meteon flat panels. They are available with double-sided colour and Satin structure. Standard corner profile element sizes: 3650 x 300 x 300, radius 20 mm. Standard corner profile element thicknesses: 8 and 10 mm.

Fabrication and installation of Trespa Meteon Metallics and Naturals.

Trespa Meteon Metallics and Naturals panels feature a directional coloured surface. In order to achieve te same orientation of the panels please take notice of the following points:

Optimizing

When optimizing Trespa Meteon Metallics and Naturals panels the direction should always be taken into account. Arrows on the back side of the fullsize panels have been applied by Trespa to indicate the direction the sheets have been produced (illustration 1)

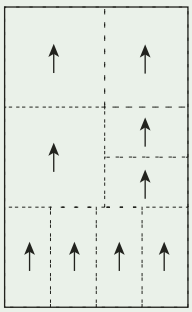


Illustration 1

Fixing

When cutting the sheets we advise you to temporarily mark the original production direction on the visible side of the individual panels. The fixing of the panels in the same direction wil be easier and this way there will be no undesirable colour distinction (illustration 2). All other instructions for processing and fixing are as standard Trespa Meteon panels.

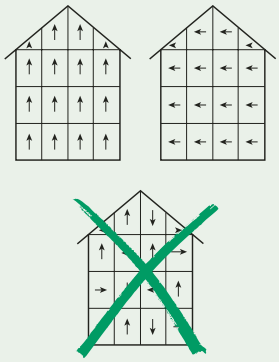


Illustration 2

Trespa Meteon Metallics and Naturals corner profiles

Corner profile and sheet lenghts have corresponding direction.

Ordering Trespa Meteon Metallics

The quantity of Trespa Meteon Metallics sheets required for a project should be ordered and supplied as a single instruction.

Service and guarantees.

Warrantees

Thanks to practical experience over many years and the high quality of Trespa Meteon panels, warrantees are available both for the product range in general and for specific projects. More information can be obtained from your local Trespa office or representative.

The technological quality.

Environmental considerations

Environmental considerations play a significant role in the development and manufacture of Trespa Meteon. Panels consist of approximately 70% softwood fibre and 30% thermosetting resin. The wood fibre comes from fast-growing pine wood from European production forests. Overall some 85% of the used raw materials are rapidly renewable. In addition up to 10% of residual materials from production are recycled to produce new Trespa construction panels.
Trespa International was one of the first producers of panel material to be certified according to ISO 14001, awarded by Lloyd's Register. The ISO 14001 standard describes the steps required for setting up, implementing, maintaining and improving a completely integrated environmental management system.

At end of their life cycle Trespa Meteon panels can be thermally recycled with energy recovery locally in an industrial incinerator as they contain no heavy metals, halogens or biocides.
Trespa International is able to provide information about the characteristics of Trespa Meteon, its safety and effect on the environment – and has available full product Life Cycle Analyses (LCAs).

Building certificates

All major European certification institutes which form the "European Union of Agrément (UEATC)" have certified both Trespa Meteon and its recommended fixing systems. Certificates are issued by amongst others: KOMO; DIBt; BUtgb; BBA; CSTB and TORROJA.

The technical quality.

Weather resistant

Trespa Meteon is extremely weather resistant. Neither sun, rain – including acid rain – nor moisture have any effect on the panel's surface or core. Both the UV resistance and colour stability are very high with a 4-5 classification on the International Grey Scale (ISO 105 A 02). Large or rapid temperature fluctuations from -20°C to +80°C do not affect the properties, stability or appearance of the panel. Colours will not change significantly for at least ten years, even under the most severe climatic conditions, or in heavily polluted industrial areas.

Easy to keep clean

The smooth panel surface has a closed non-porous structure, ensuring that practically no dirt accumulates. Neither the surface nor the sawn edges need to be painted or provided with a protective cover. Trespa Meteon is completely unaffected by household cleaning agents or strong organic solvents.

Vandalism

The favourable combination of flexural strength and elasticity make the panel material highly impact resistant. It is therefore highly suitable for application in environments that are exposed to vandalism.

Graffiti can easily be removed without altering the properties of Trespa Meteon.

Safe fire behaviour

In a fire, Trespa Meteon does not melt, drip or explode and retains its stability for a long time.
Key European testing bodies have awarded Trespa Meteon FR grade the most favourable classifications for organic material fire behaviour.

FAÇADE APPLICATIONS.

Ventilated façade cladding.

The load-bearing structure of a building with an exterior insulation layer can be simply protected from weather influences by Trespa façade cladding.

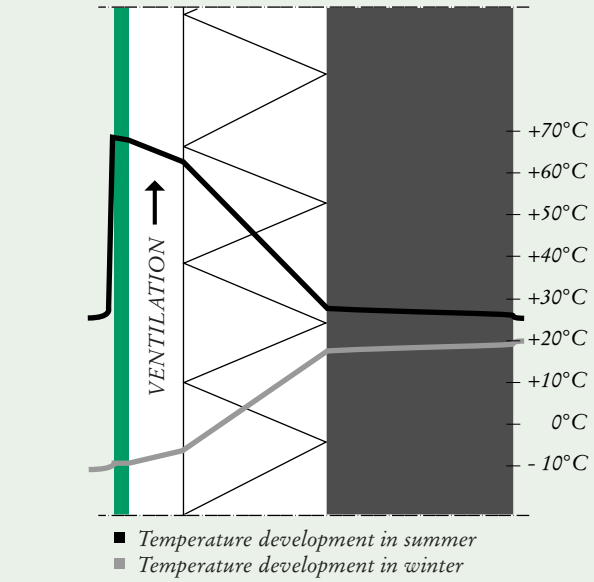
A ventilated cavity between the façade cladding and the insulation layer prevents rainwater from penetrating and diffuses water vapour from the inside to the outside.
The presence of ventilation prevents damp from accumulating behind the panels. The subframe will not be affected or rot and the insulation material is prevented from getting wet.

Good ventilation demands that there are openings in the upper and lower edges of the façade cladding. These are also necessary at the upper and lower edges of window and door openings.

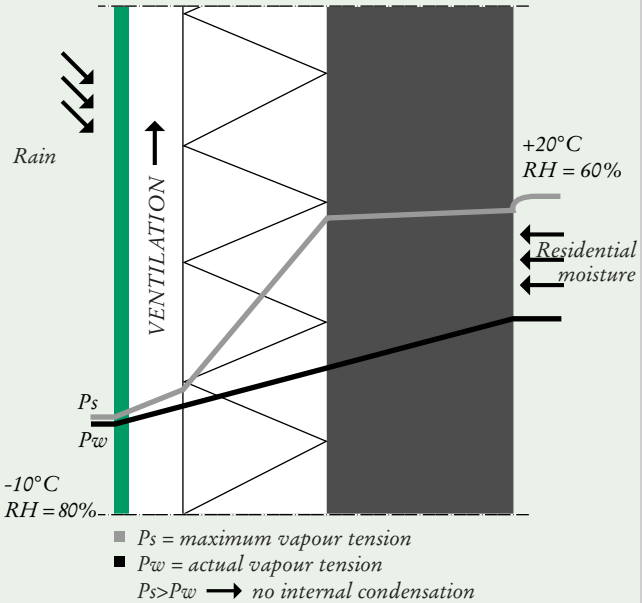
Joint profiles usually have an aesthetic function and are able to limit the amount of moisture that penetrates. However, these profiles are not essential to guarantee the water tightness of the façade. Moisture that penetrates is discharged through the ventilated cavity.

A ventilated façade has the following physical and structural advantages:
- No moisture problems in the façade structure as a result of internal condensation or rain penetration.
- Movement of the main load-bearing structure is kept to a minimum by low temperature fluctuations.
- Local cold bridges are kept to a minimum because the load-bearing structure is insulated on the outside.

TEMPERATURE DEVELOPMENT IN SUMMER AND WINTER



MOISTURE LOADS ON FAÇADE STRUCTURE

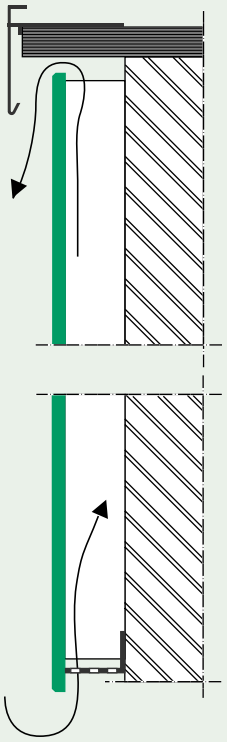


Ventilation.

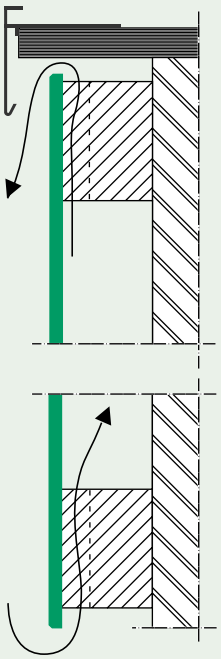
Good ventilation of the Trespa façade cladding may be obtained by following the guidelines listed below:

- A continuous ventilated cavity of at least 20 mm should be present behind the façade cladding to prevent damage to the façade as a result of condensation in the cavity and/or rain penetration.
- Ventilation openings may be reduced locally to 5 mm.
- The upper and lower sides of the façade cladding and door and window openings should have ventilation openings that are in direct contact with the outside air.
- On the one hand the size of the ventilation opening is determined by the height of the façade cladding, and on the other hand by local circumstances. Every linear metre should have at least:
  - 20 cm^2/m of ventilation for façade cladding heights up to 1 metre;
  - 50 cm^2/m of ventilation for façade cladding heights exceeding 1 metre.
- Ventilation openings that are larger than 10 mm should be made in such a way that insects and vermin cannot get behind the façade cladding.

BETWEEN THE VERTICAL BATTENS

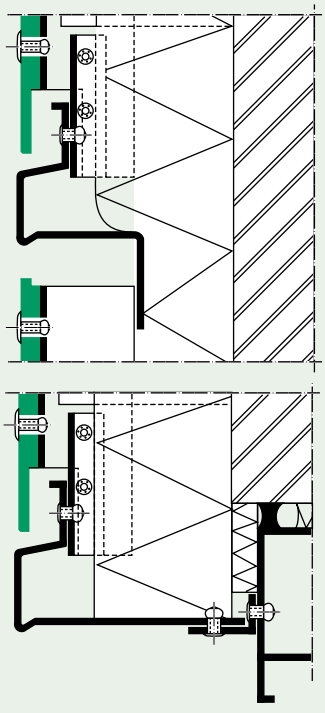


BETWEEN THE HORIZONTAL BATTENS



Fire precautions.

Movement of fire within the cavity and/or insulation materials can possibly take place for multi- storey façades. Proven systems are developed to prevent this.
These systems are constructed with incombustible insulation materials and continuous horizontal stainless steel fire breaks; Trespa panels contribute to the required resistance of fire breaking through.



Joints.

The following guidelines apply to joints and panel connections:

- The panels should be able to move 2.5 mm per metre in the length and the width. Therefore sufficient space should be allowed for around the panels.
- Panel, assembly and building tolerances play an important role in the joint details. The panels should also be able to move. Therefore a minimum joint width of 10 mm is required.
- The joints should be such that sufficient ventilation and/or drainage is ensured in order to prevent damage as a result of retained moisture.
- Insects and vermin may nestle behind the façade cladding. Joints that are larger than 10 mm should therefore be fixed with grilles, wire netting, etc.

OPEN JOINTS

The panel connections may either be open or sealed. If an open joint system is used for vertical and/or horizontal joints, specific attention should be paid to possible rain or moisture penetration. When the insulation becomes wet the insulation value decreases so no longer complies with standards. Moisture resistant insulation materials and subframes are therefore required.
A vapour open foil can be used as a second water barrier.

CLOSED JOINTS

Tongued-and-grooved and halved joints

With a minimum of 8 mm thick panel it is possible to have tongue-and-grooved joints on vertical edges or halved joints on the horizontal edges. This effects a closed joint system. The minimum dimensions for the joints are:

- groove: 2.2 x 15 mm for closed aluminium tongues
  (panel thickness ≥ 8 mm)
  3.2 x 15 mm for Trespa tongues
  (panel thickness ≥ 10 mm)
- tongue: 2 x 30 mm for aluminium tongues
  3 x 30 mm for Trespa tongues
- height of halved joint: 20 mm

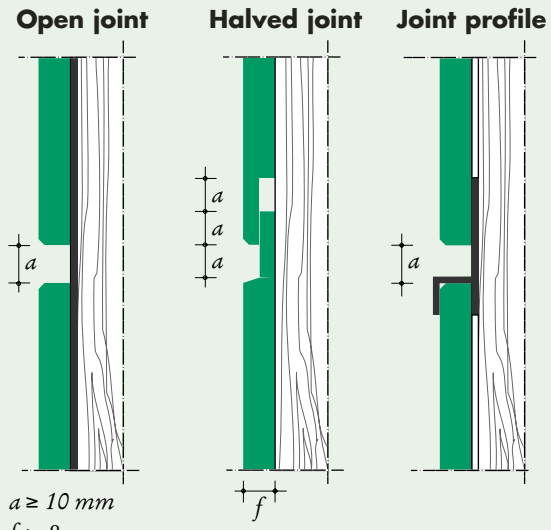
Joint profiles

Joints may be closed by fixing metal, plastic or rubber profiles. The profiles should not impede the movement of the panels and should be fixed free of tension.

Mastic joints

Mastic joints impede the movement of the panels and may lead to excessive dirt on the panel edges. This type of joint sealing is therefore specifically not recommended.

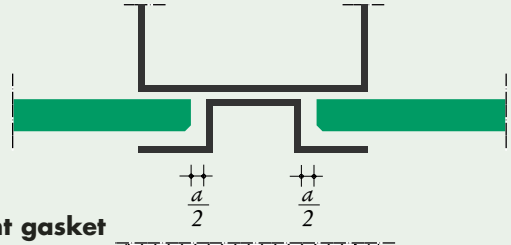
HORIZONTAL JOINTS



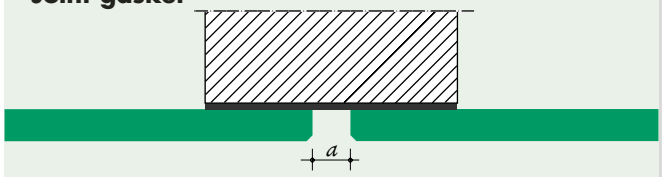
a ≥ 10 mm
f ≥ 8 mm

VERTICAL JOINTS

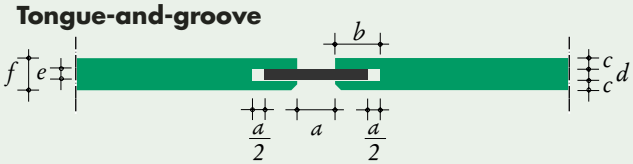
Omega profile



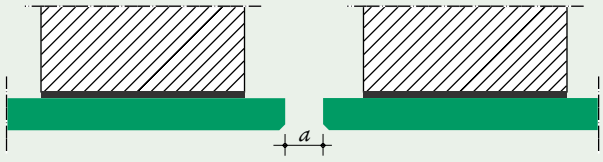
Joint gasket



Tongue-and-groove



Open joint

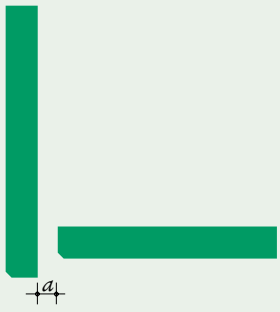


a ≥ 10 mm *c ≥ 2.9 mm* *e ≥ 2 mm*
b ≥ 15 mm *d ≥ 2.2 mm* *f ≥ 8 mm*

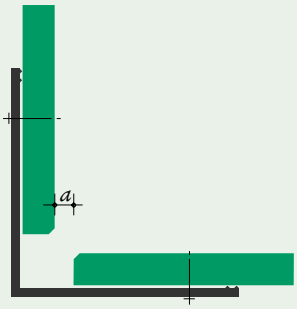
Corner solutions.

Panel connections at the corners of buildings may have either open or closed joints. Panels from 8 mm thickness are suitable for a fixed corner connection where a metal corner profile is fixed to the back of the panel with screws or inserts. Special allowances should be made for the differences in length.
If one of the panels is then not able to move in one or more directions the width of the section in question may not exceed 300 mm. The delivery programme offers a Trespa corner profile element which can be used for a smooth corner detail.

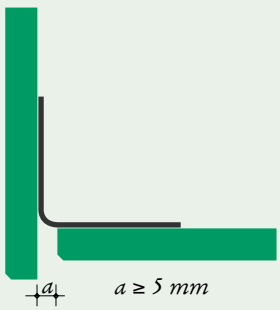
Open corner



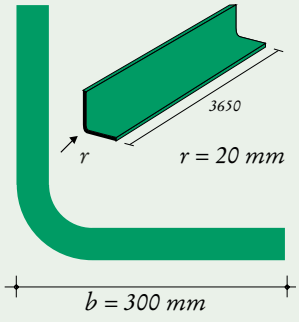
Corner profile



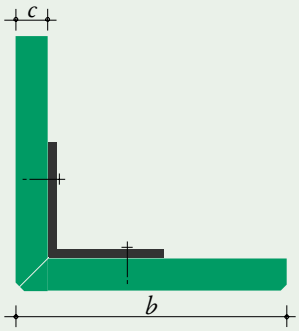
Joint gasket



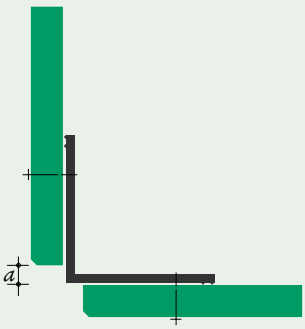
Trespa corner profile element



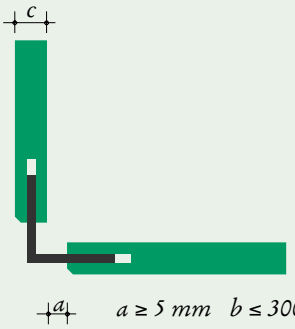
Fixed corner



Corner profile



Tongue-and groove



FIXING SYSTEMS.

General guidelines façade cladding.

The following aspects should receive attention when a façade construction consisting of Trespa panels, subframes and fixings are dimensioned:

- The panels should be suitable for use as self-supporting, façade cladding.
- When combined with the subframe the panel strength and rigidity should be sufficient to withstand normal loads such as wind, dead weight and/or impact, without being damaged.
- The façade cladding should not have a structural function.
- If heavy objects are to be suspended from the panels, additional facilities are usually required.
- The maximum permissible impact loads on the panels and subframes can be determined by means of specific tests (usually the sandbag swing test).
- Trespa Meteon Metallic panels feature a directional coloured surface. See page 6 for further information.

General guidelines fixing systems.

Trespa is assembled with corrosion resistant fixings on a suitable subframe in such a way that the panels are not under tension and are able to move freely. When determining the subframe the following should be kept in mind:

- wind loading
- the maximum fixing centres for the panels
- the required ventilation provisions
- unimpeded movement of the panels
- the available panel dimensions
- thickness of insulation material used, if any
- the anchoring possibilities in the structural (wall) construction
- legal requirements

Fixing

Trespa panels may be fixed by the means given below. Variations and combinations of the methods are optional. The details in this brochure give the principles of the fixing systems and do not refer to trade names. Treating of panel edges is not required as shown in the details.

• fixed visibly with screws

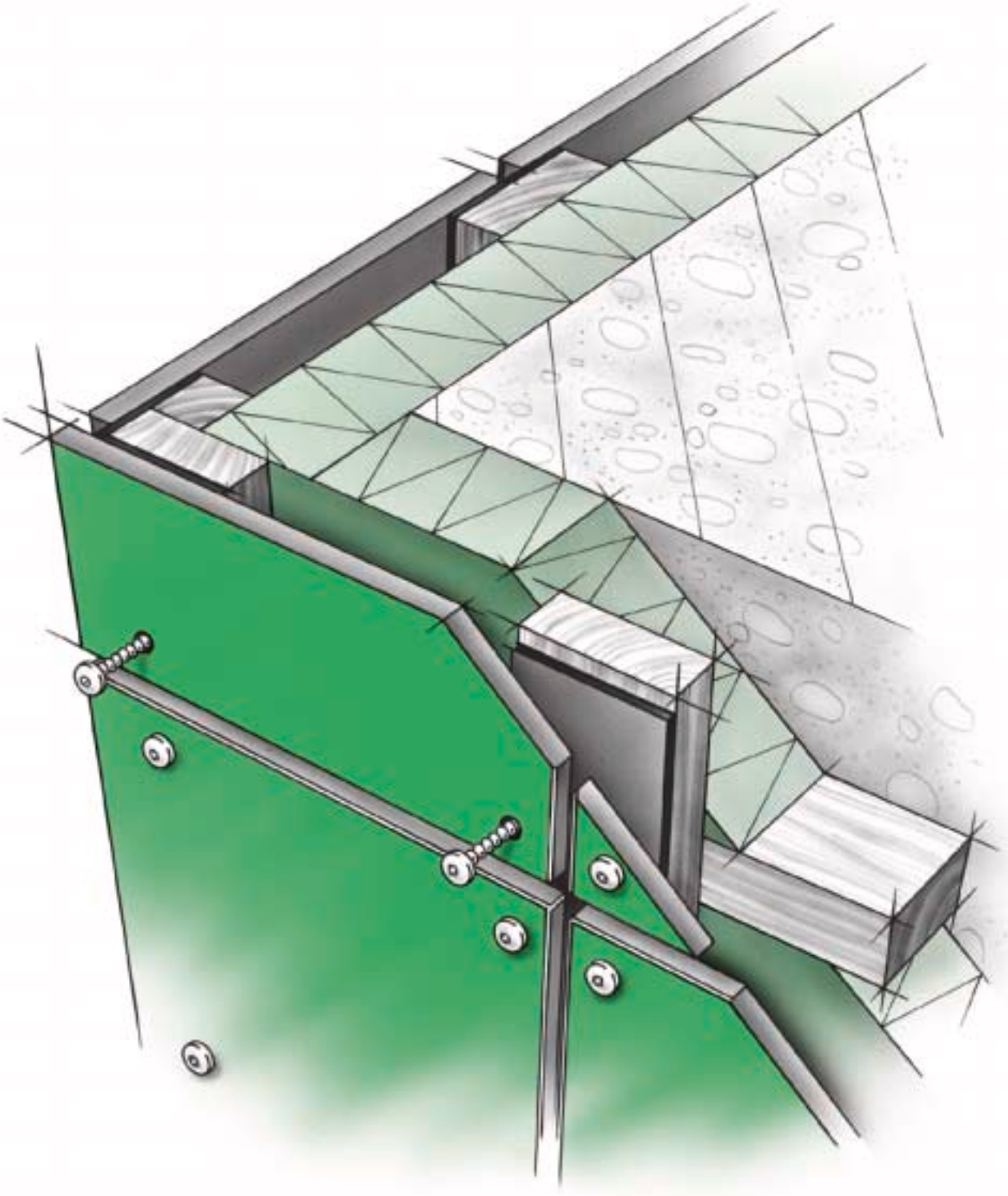
• fixed visibly with rivets

• invisible fixing with screws or (conical) inserts

• invisible fixing with adhesive and screws

• single-skin panel in frame

• sandwich panel in frame



TS150: Visible fixing with screws on a timber subframe.

Panels with a thickness of 6 mm or more can be fixed onto a timber subframe. This subframe must consist of battens of sufficient strength and permanent durability.*
Powdercoated screws or plastic cover caps are available in all standard Trespa colours.

** See chapter 'Standards'*

General

Joints: at least 10 mm
Panel thickness: from 6 mm

Fixing centres and edge clearances

a = horizontal fixing centre (see table)
b = edge clearance
- minimum 20 mm
- maximum 10 x panel thickness

c = vertical fixing centre (see table)

*maximum fixing centres (in mm)**	*panel thickness (in mm)*			
	6	*8*	*10*	*13*
2 fixings in one direction	*450*	*600*	*750*	*950*
3 or more fixings in one direction	*550*	*750*	*900*	*1,200*

** See also chapters 'Deflection' and 'Wind loads'*

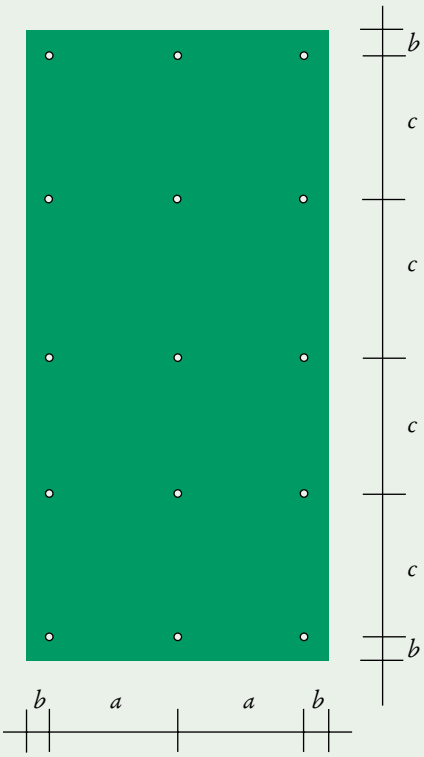
Fixing detail

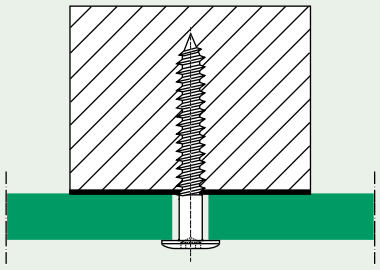
Fast fixing screw for Trespa for 6 mm to 10 mm panels.

Diameter of the hole for all fixing points:
- 8 mm for fast fixing screw for Trespa
- shank diameter of the screw + 3 mm for other screws

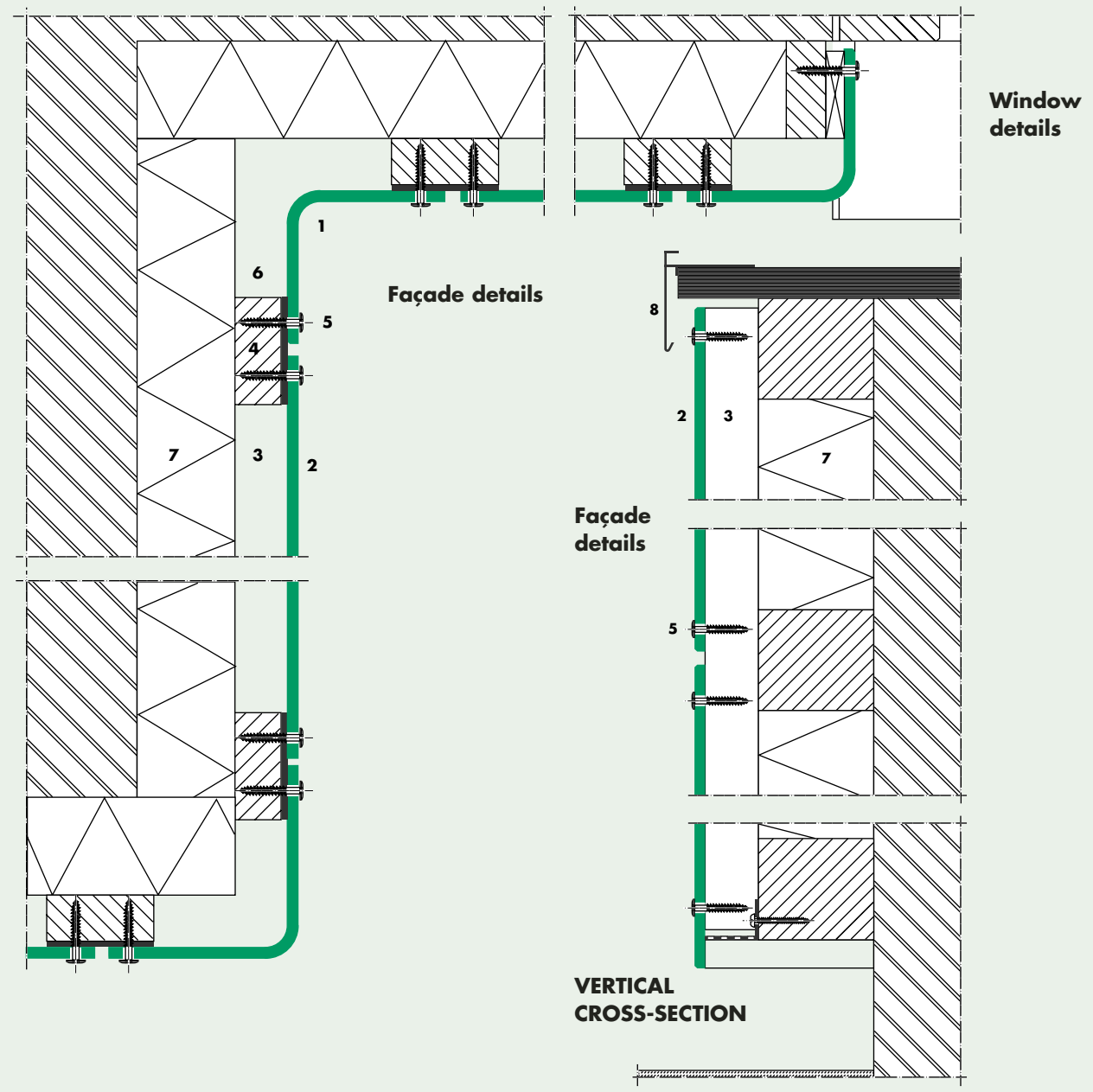
Timber battens should be at least:
- 34 x 75 mm for joints between two panels
- 34 x 45 mm for inner and end battens

Screws should be centered in the holes and not be overtightened.





TS150: Visible fixing with screws on a timber subframe.

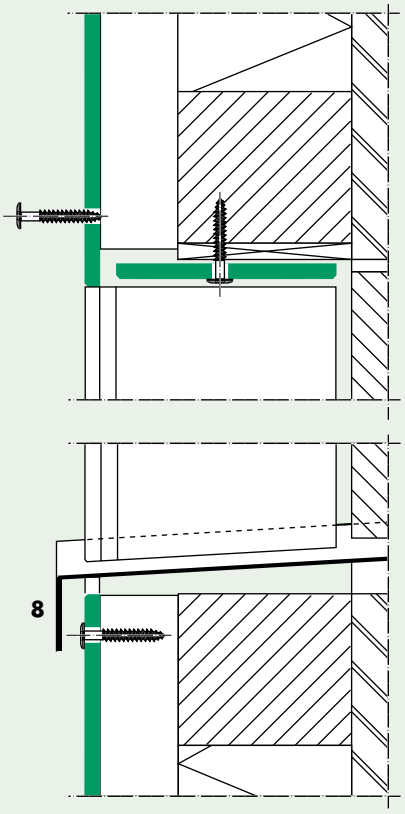


1. Trespa Meteon corner profile
2. Trespa Meteon panel
3. Cavity
4. Timber batten
5. Trespa 'fast fix' screw
6. Gasket
7. Insulation
8. Coping profile

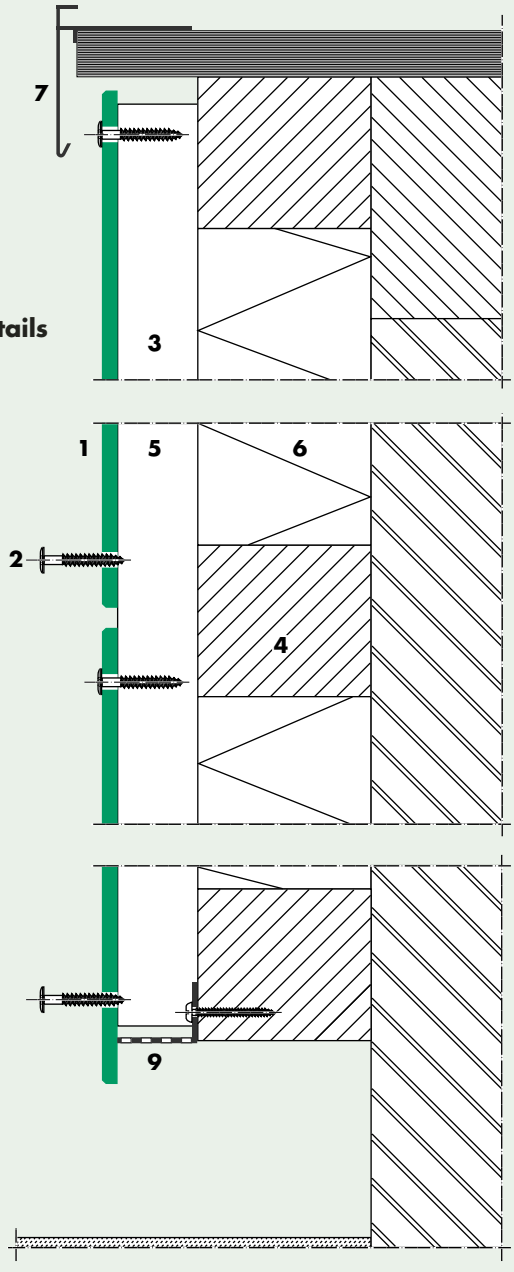
TS150: Visible fixing with screws on a timber subframe.

VERTICAL CROSS-SECTION

Window details



Façade details

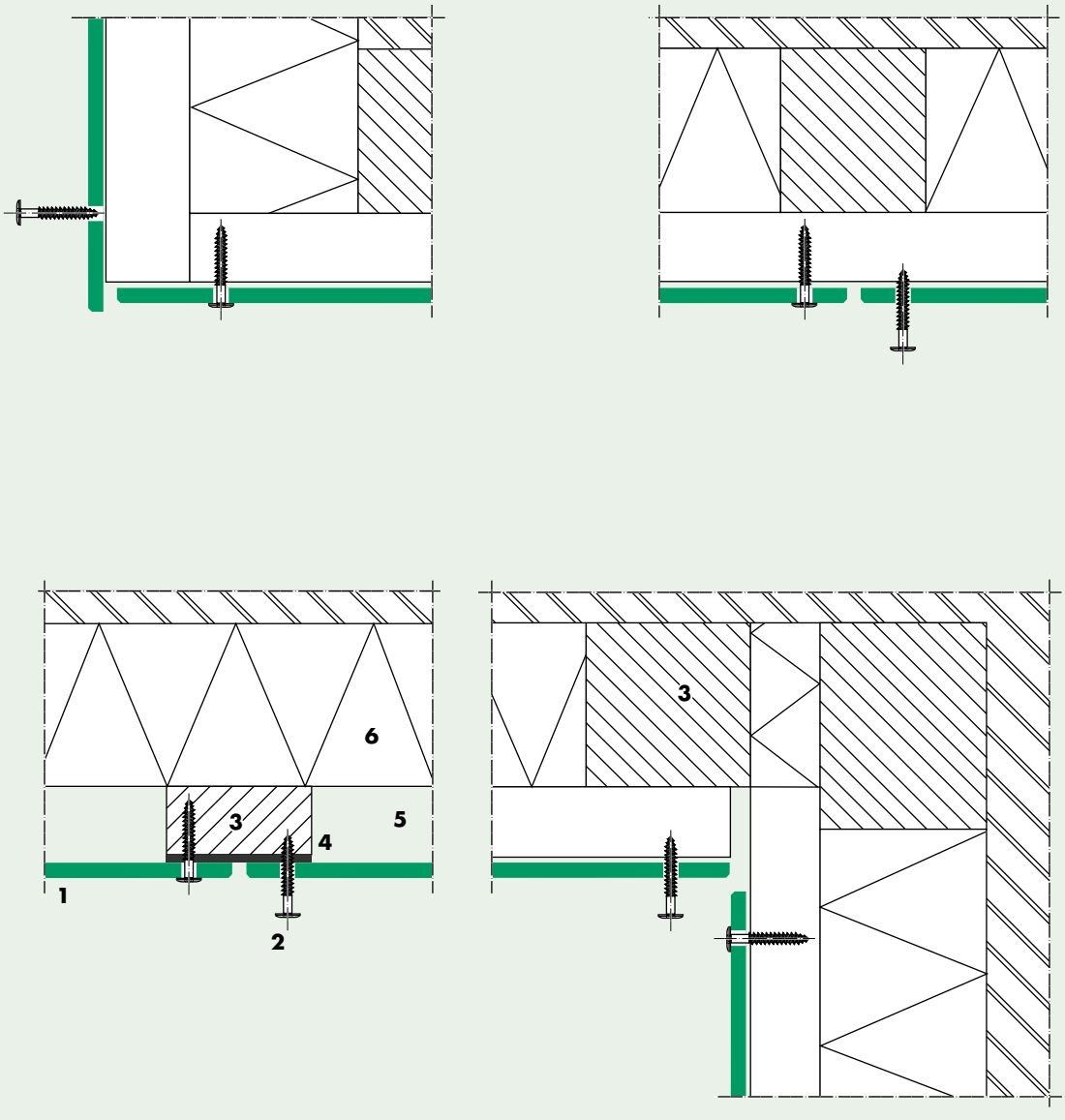


1. Trespa Meteon panel
2. Screw (in the same colour as the panel)
3. Vertical batten
4. Horizontal batten
5. Cavity
6. Insulation
7. Coping profile
8. Sill
9. Ventilation profile

TS150: Visible fixing with screws on a timber subframe.

VERTICAL CROSS-SECTION

Soffit details



1. Trespa Meteon panel
2. Screw (in the same colour as the panel)
3. Horizontal batten
4. Gasket
5. Cavity
6. Insulation

TS700: Visible fixing with blind rivets on an aluminium subframe.

Panels that are of minimum 6 mm thickness may be fixed with rivets. The subframe should preferably consist of vertical profiles which are fixed to the structure with special wall brackets.* Horizontal and/or vertical adjusting tolerances are essential.

** See chapter 'Standards'*

General

Joints: at least 10 mm
Panel thickness: from 6 mm

Fixing centres and edge clearances

a = horizontal fixing centre (see table)
b = edge clearance
- minimum 20 mm
- maximum 10 x panel thickness

c = vertical fixing centre (see table)
x = maximum 3050 mm
y = maximum 3050 mm
◎ = fixed point in panel centre
○ = sliding point

*maximum fixing centres (in mm)**	*panel thickness (in mm)*			
	6	*8*	*10*	*13*
2 fixings in one direction	*450*	*600*	*750*	*950*
3 or more fixings in one direction	*550*	*750*	*900*	*1,200*

** See also chapters 'Deflection' and 'Wind loads'.*

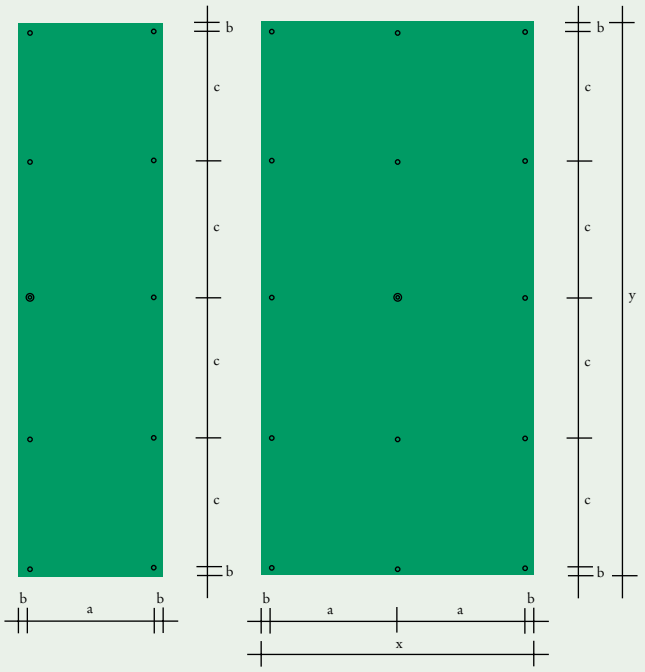
Fixing detail

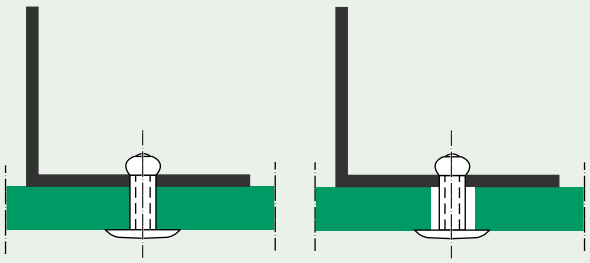
Diameter of the hole:
- fixed point = 5.1 mm
- sliding points = 10 mm

If the fixed point cannot be placed at the centre of the panel, 2 fixed points may made next to each other. The associated diameter of the hole should then be 1 mm larger than the rivet diameter.

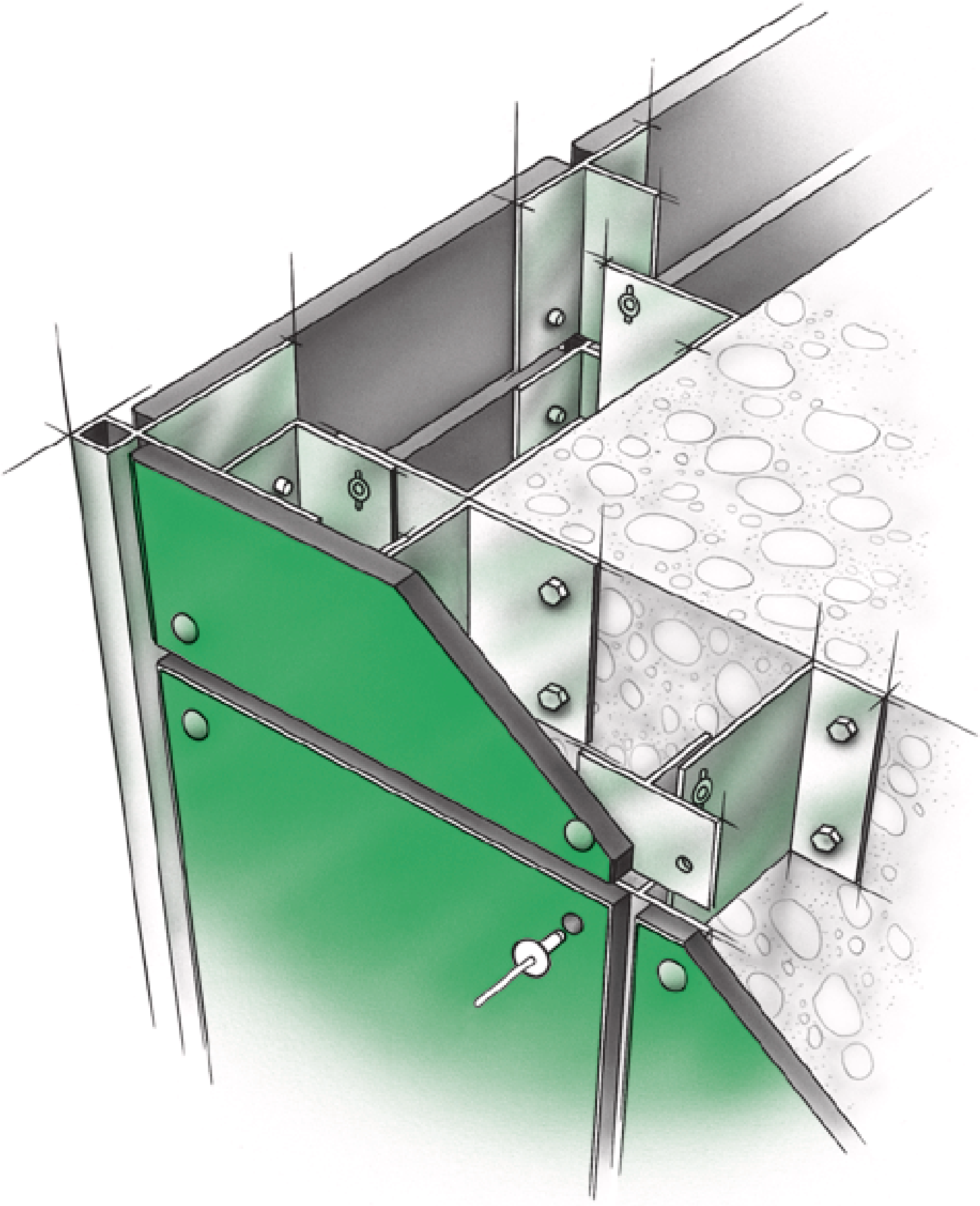
A neoprene gasket of 1.5 mm thickness on the subframe can also be used when the fixed point is not in the centre of the panel.

The rivet head should be 0.3 mm free from the panel surface by using a special tool.



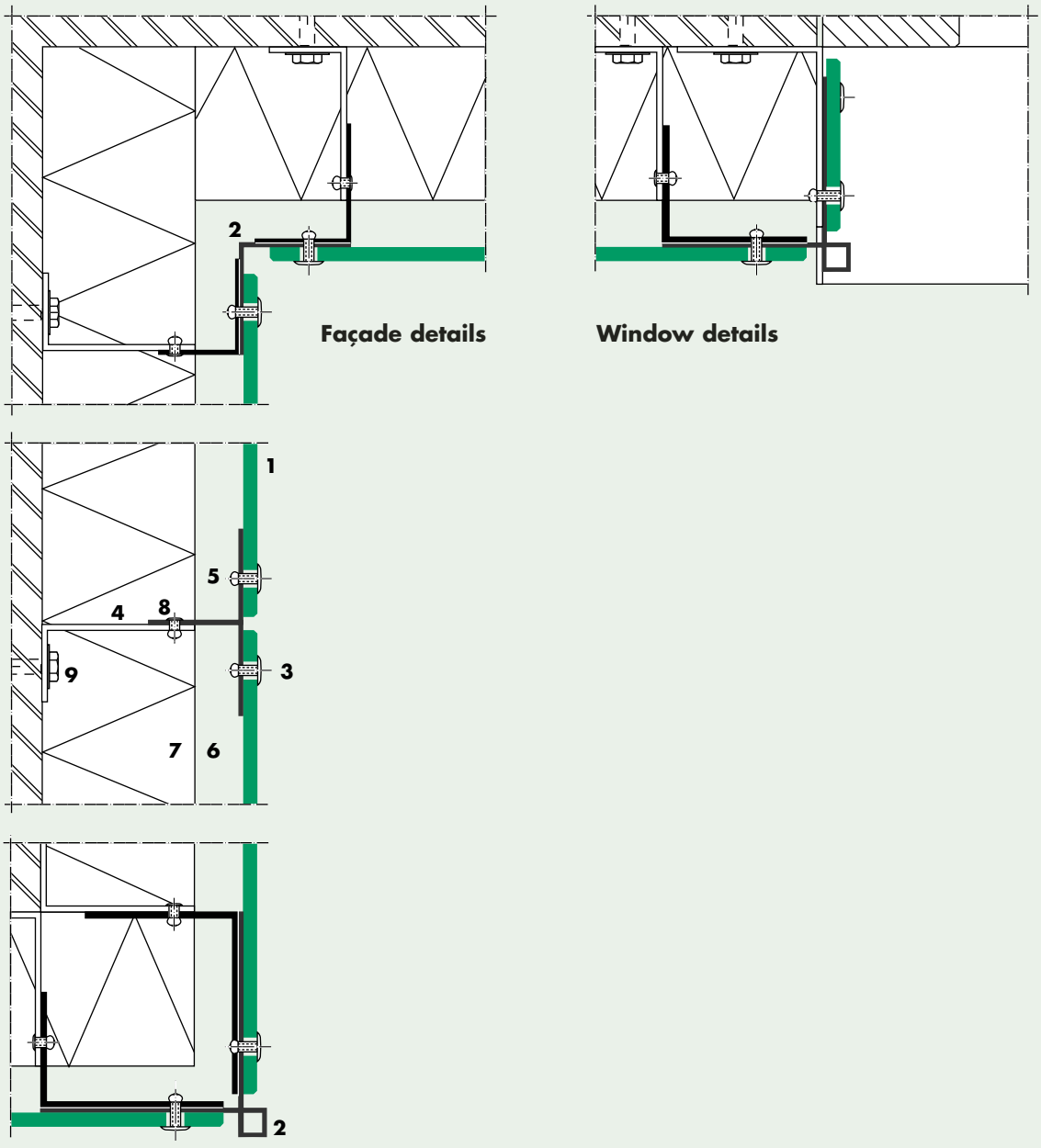


Fixing point **Sliding point**



TS700: Visible fixing with blind rivets on an aluminium subframe.

HORIZONTAL CROSS-SECTION

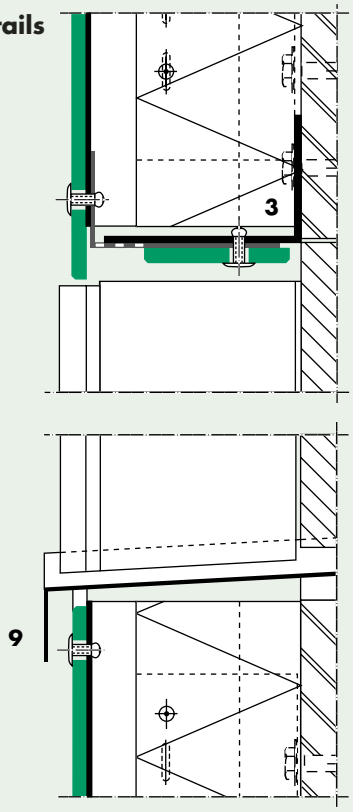


1. Trespa Meteon panel
2. Aluminium corner profile
3. Aluminium rivet (with coloured head)
4. Aluminium L-profile
5. Aluminium T-profile
6. Cavity
7. Insulation
8. Aluminium rivet
9. Anchor bolt

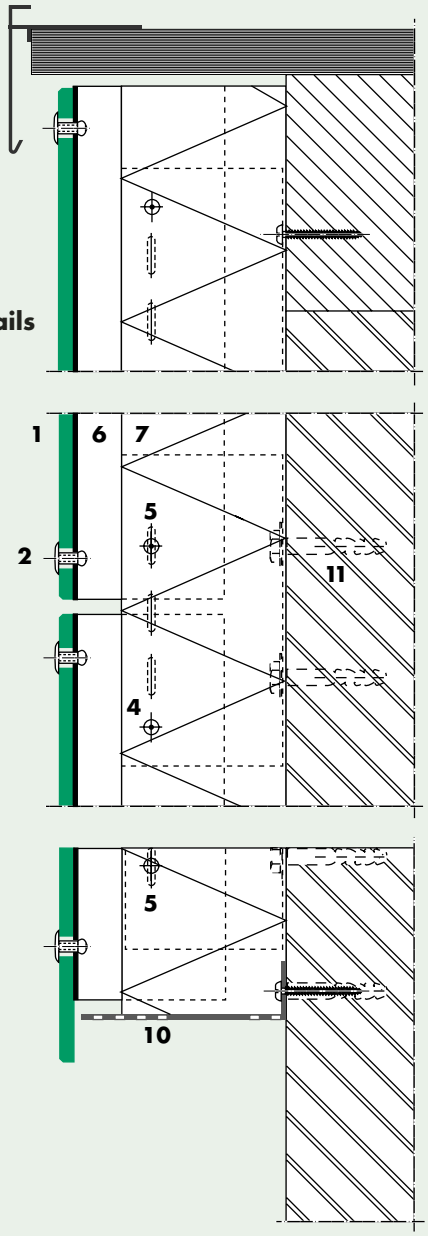
TS700: Visible fixing with blind rivets on an aluminium subframe.

VERTICAL CROSS-SECTION

Window details



Façade details

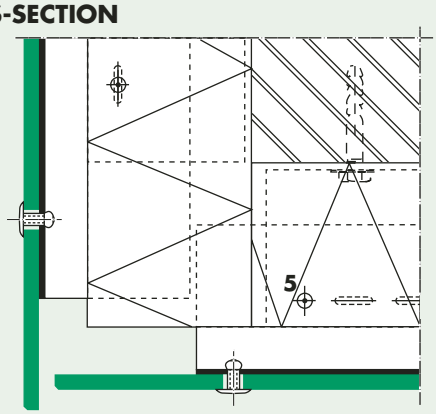


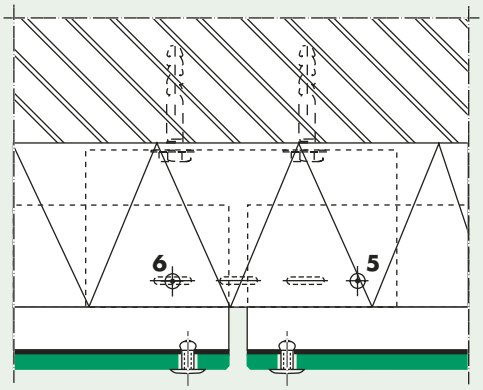
1. Trespa Meteon panel
2. Aluminium rivet (with coloured head)
3. Aluminium L-profile
4. Fixed point
5. Sliding point
6. Cavity
7. Insulation
8. Coping profile
9. Sill
10. Ventilation profile
11. Anchor bolt

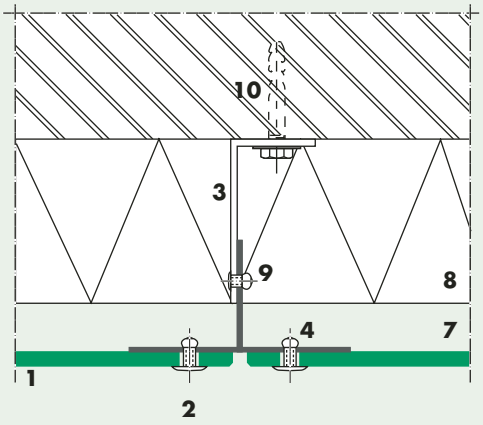
TS700: Visible fixing with blind rivets on an aluminium subframe.

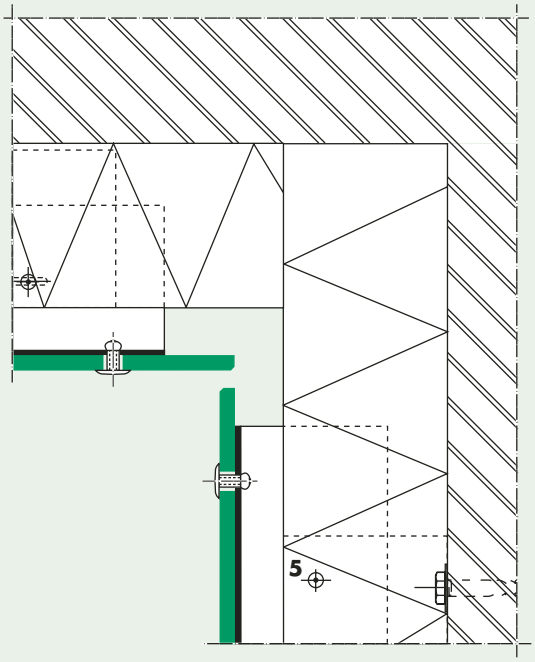
VERTICAL CROSS-SECTION

Soffit details

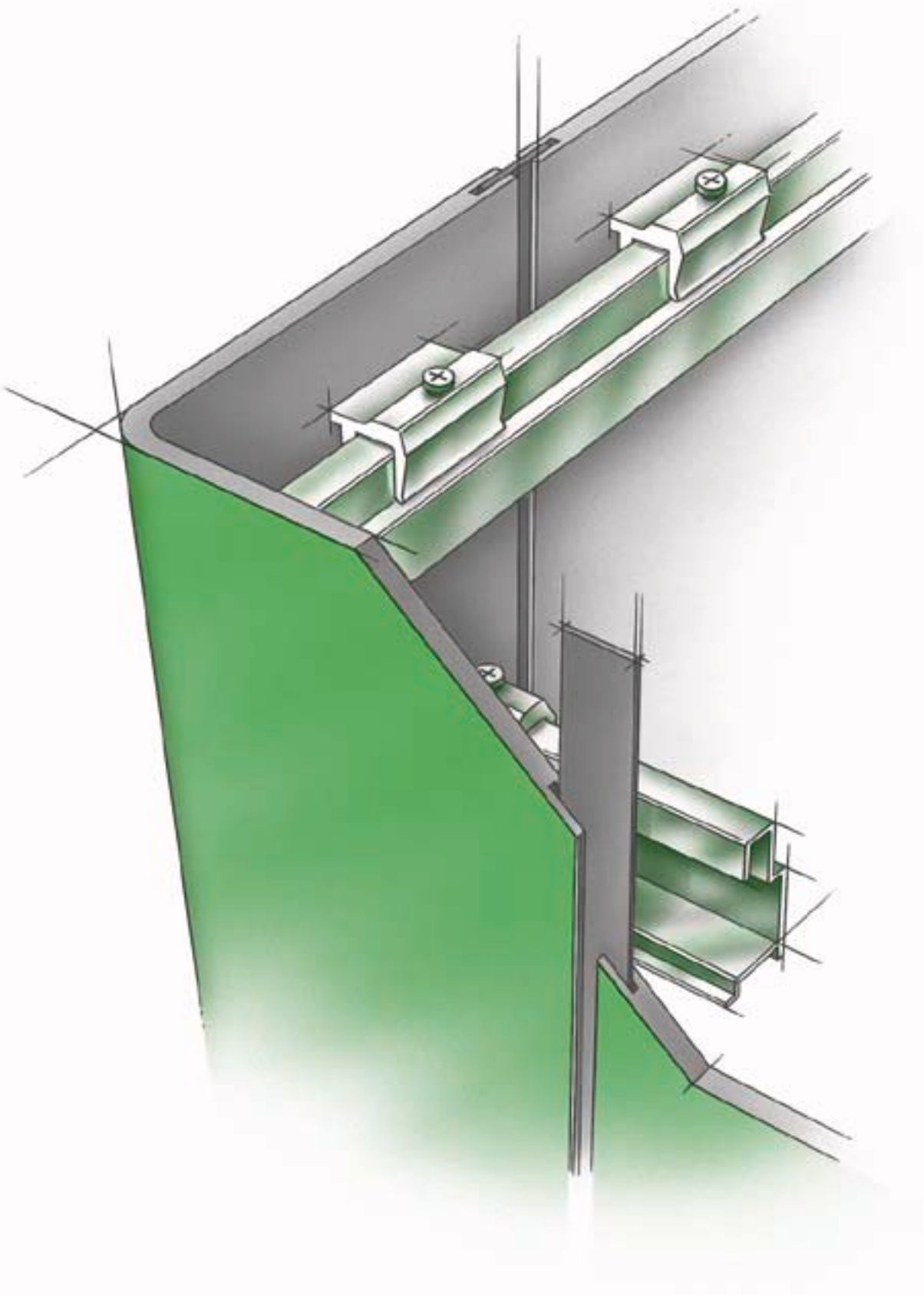






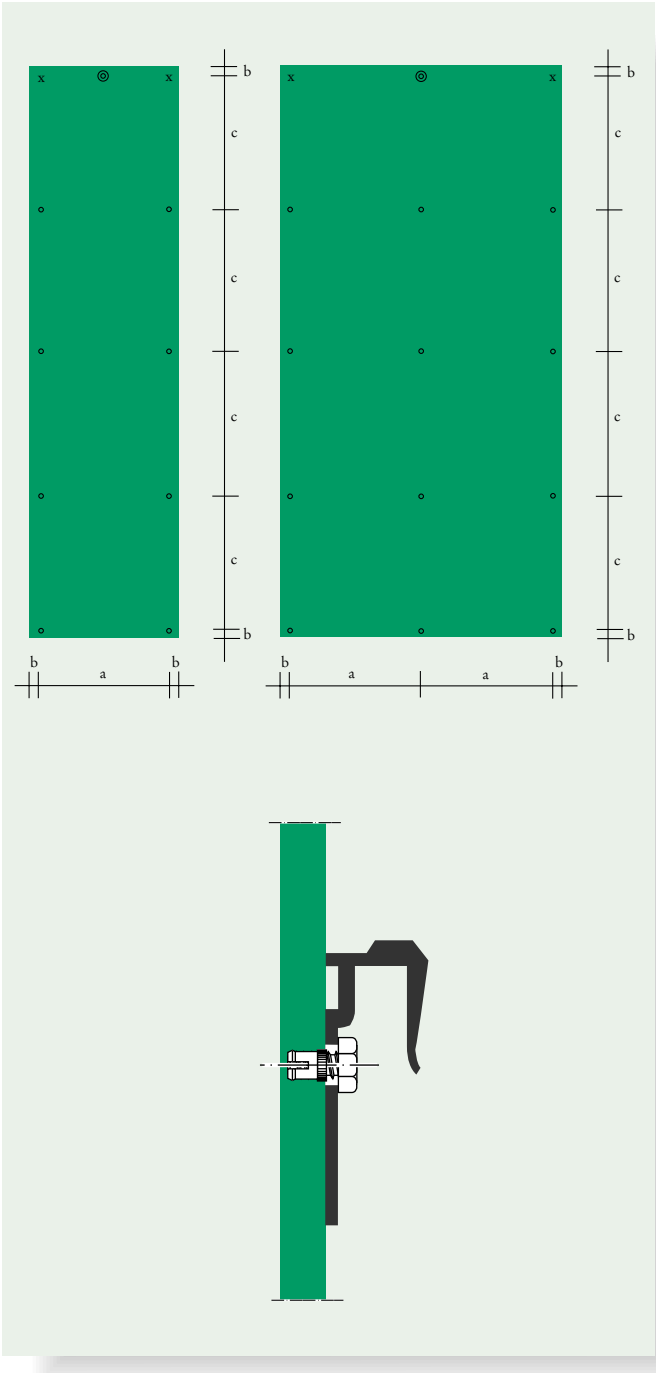


1. Trespa Meteon panel
2. Aluminium rivet (with coloured head)
3. Aluminium L-profile
4. Aluminium T-profile
5. Fixed point
6. Sliding point
7. Cavity
8. Insulation
9. Aluminium rivet
10. Anchor bolt



TS200: Invisible fixing with screws or inserts.

Panels of minimum 8 mm thickness may be fixed invisibly by fixing metal hanging brackets with inserts or screws to the back of the panel. Invisible fixings for 8 mm panels are possible to a limited extent. The panels are fixed to metal subframe.
Each panel has two adjusting points and a fixed point at the top; so adjusting is possible and unwanted movement of the whole panel can not happen.



General

Joints: at least 10 mm
Panel thickness: from 8 mm
Shortest panel leg of assembled corner panels may not exceed 300 mm if not, a fixed point in the angle is necessary.

Fixing and edge clearances

a = horizontal fixing centre (see table)
b = edge clearance
- minimum 80 mm
- maximum 10 x panel thickness

c = vertical fixing centre (see table)
◎ = fixed point
× = adjusting point
○ = sliding point:
Lower brackets fixed higher at such a level as to facilitate downward panel movement (2.5 mm/m[1])

*maximum fixing centres (in mm)**	*panel thickness (in mm)*		
	8	*10*	*13*
2 fixings in one direction	*600*	*750*	*950*
3 or more fixings in one direction	*750*	*900*	*1,200*

** See also chapters 'Deflection' and 'Wind loads'.*

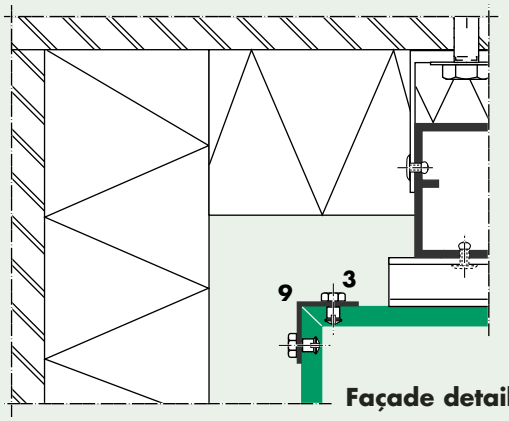
Fixing detail

Fixing method (see also chapter 'Accessories')
- straight insert
- thread cutting screw
- conical insert

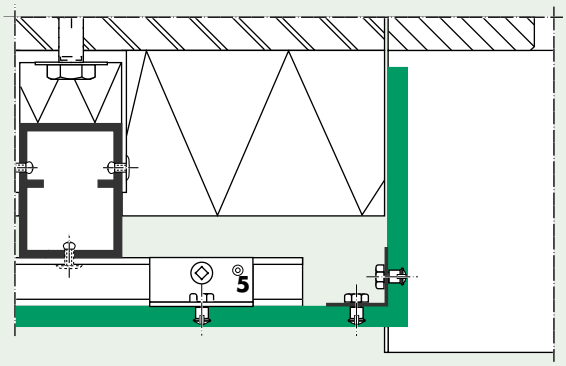
Remaining panel thickness: at least 2.5 mm.
Anchoring depth: panel thickness - 3 mm.

TS200: Invisible fixing with screws or inserts.

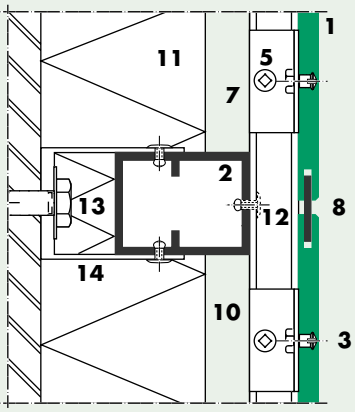
HORIZONTAL CROSS-SECTION

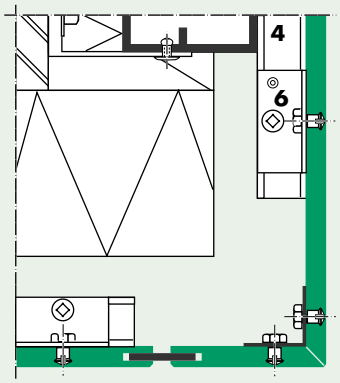


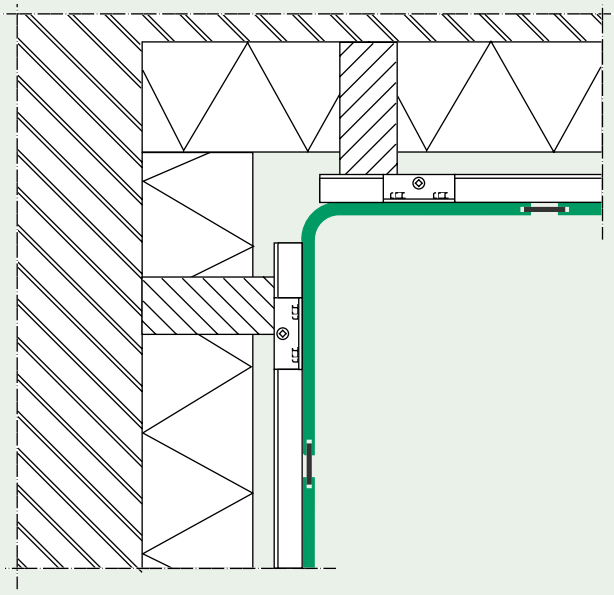
Façade details



Window details





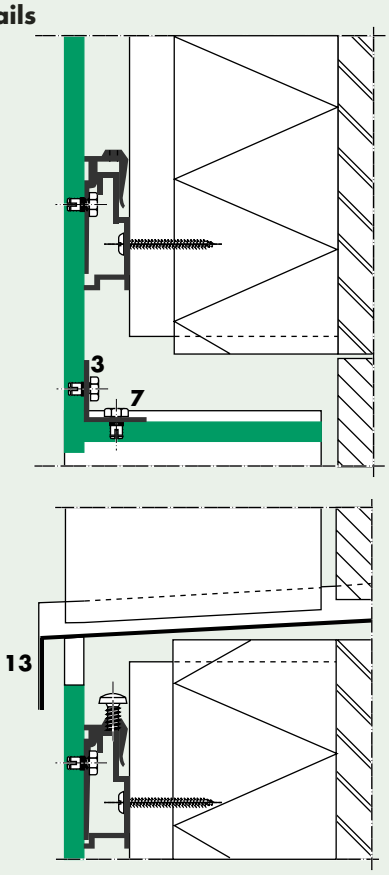


1. Trespa Meteon panel
2. Aluminium profile
3. Insert
4. Aluminium rail
5. Adjusting screw
6. Fixed point
7. Aluminium bracket
8. Trespa tongue
9. Aluminium angle
10. Cavity
11. Insulation
12. Aluminium rivet (with coloured head)
13. Anchor bolt
14. Aluminium wall bracket

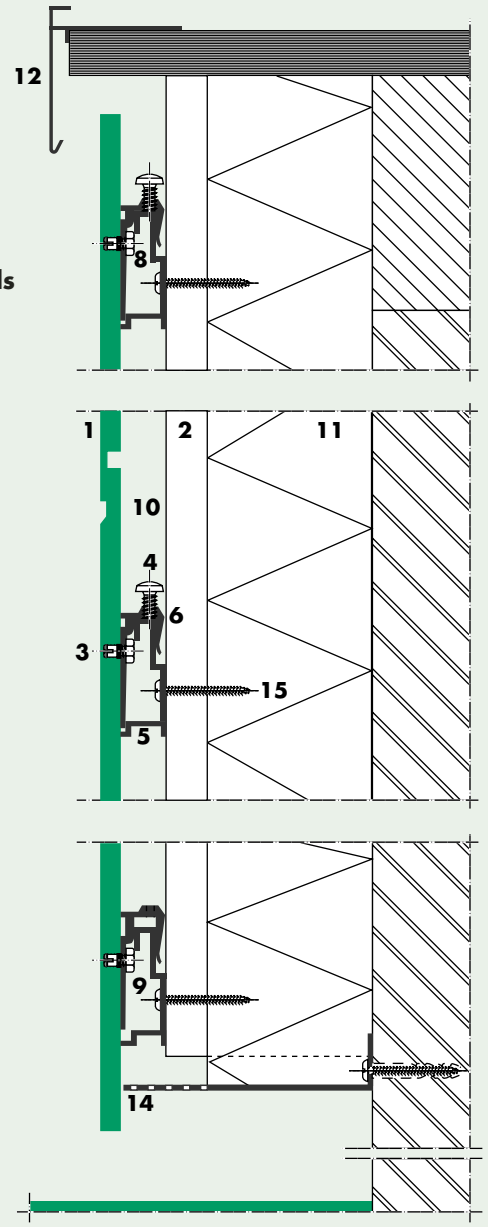
TS200: Invisible fixing with screws or inserts.

VERTICAL CROSS-SECTION

Window details



Façade details

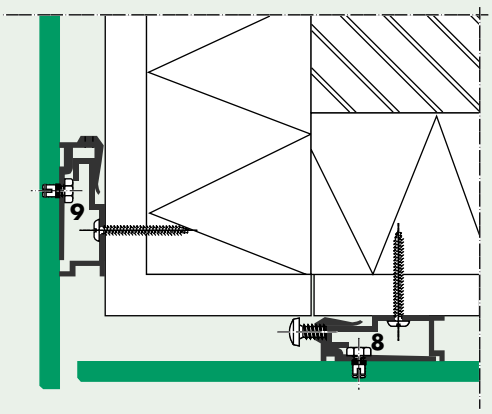


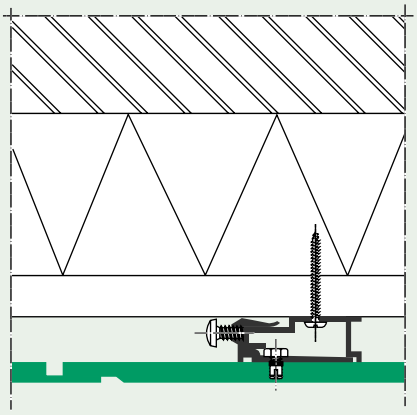
1. Trespa Meteon panel
2. Vertical batten
3. Insert
4. Adjusting screw
5. Aluminium rail
6. Aluminium bracket
7. Aluminium angle
8. Fixed point
9. Sliding point
10. Cavity
11. Insulation
12. Coping profile
13. Sill
14. Ventilation profile
15. Wood screw

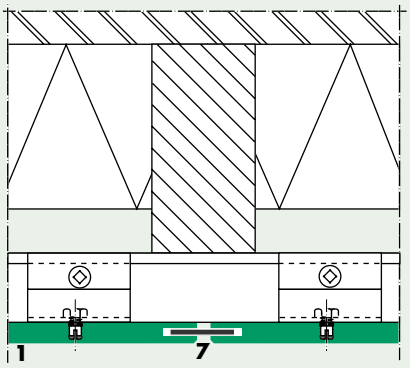
TS200: Invisible fixing with screws or inserts.

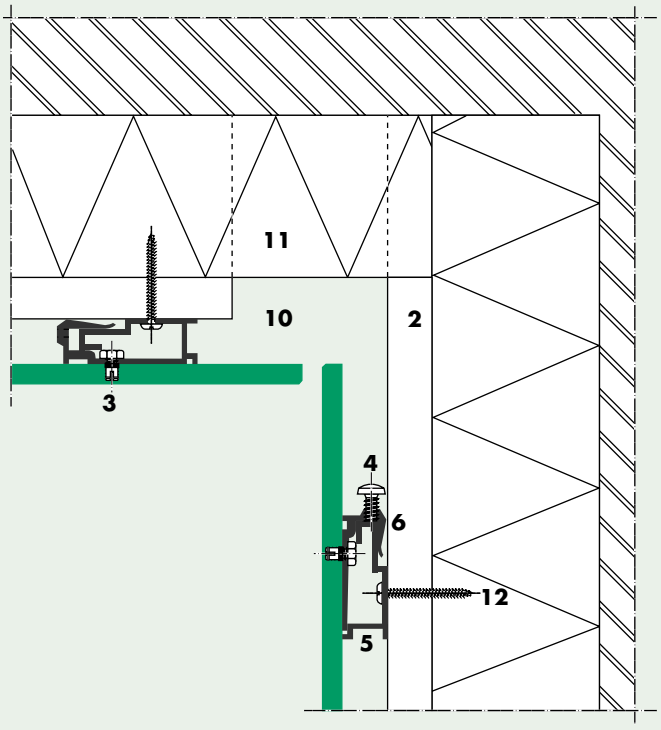
VERTICAL CROSS-SECTION

Soffit details







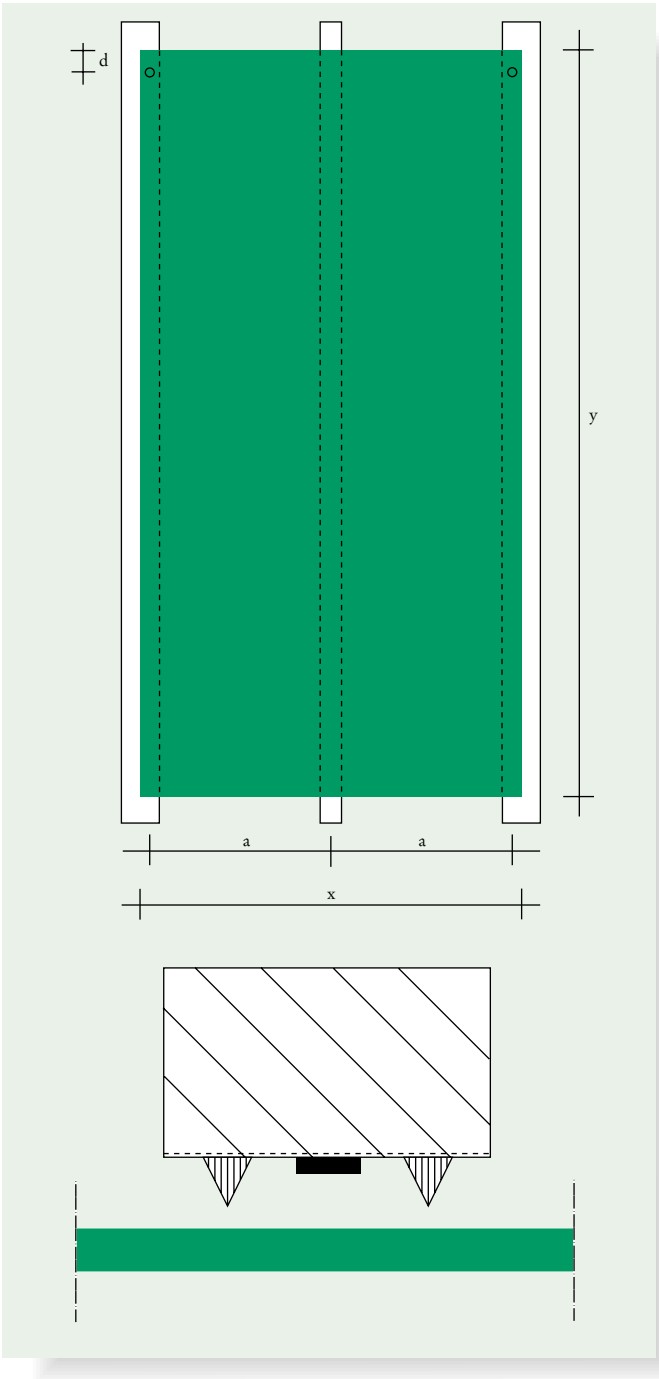


1. Trespa Meteon panel
2. Vertical batten
3. Insert
4. Adjusting screw
5. Aluminium rail
6. Aluminium bracket
7. Trespa tongue
8. Fixed point
9. Sliding point
10. Cavity
11. Insulation
12. Wood screw

TS400: Invisible fixing with adhesive and screws.

The effectiveness of an adhesive fixed panel is determined mainly by the weather conditions at the time of fixing. Damp, cold and/or dusty conditions may have a negative effect. Fixing the Trespa panels to wood or metal subframes is therefore only possible when:

- for reasons of safety two screws or rivets are fixed to the top edge of every panel
- the maximum specified panel dimensions have not been exceeded so that the panels are able to move freely
- the bonded joint is made vertically
- the guidelines specified by the adhesive manufacturers and advised by Trespa are adhered to



General

Joints: minimum 10 mm
Panel thickness: from 6 mm
Panel dimensions: maximum length 2550 mm,
maximum surface 2.5 m^2.

Fixing and distances from the edge

a = horizontal fixing centre (see table)
d = edge clearance: minimum 20 mm
x = panel width
y = panel height

*maximum fixing centres (in mm)**	*panel thickness (in mm)*		
	6	*8*	*10*
2 fixings in one direction	*450*	*600*	*650*
3 or more fixings in one direction	*550*	*650*	*650*

** See also chapters 'Deflection' and 'Wind loads'.*

Fixing detail

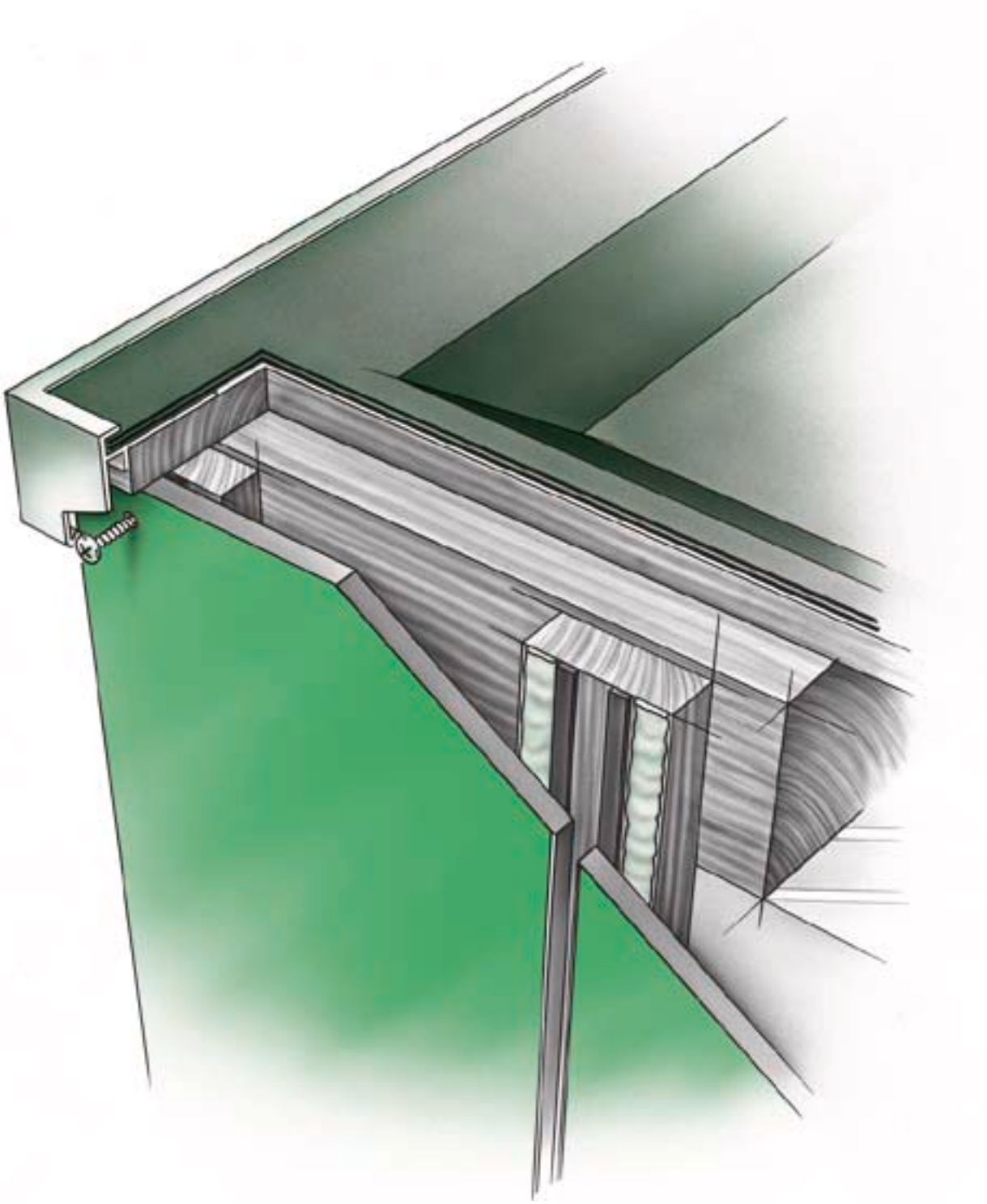
At least two mechanical fixings (screws) in the upper edge of the panel

Diameter of the hole for the screws:

- 8 mm for fast fixing screw for Trespa
- shank diameter of the screw + 3mm for other screws

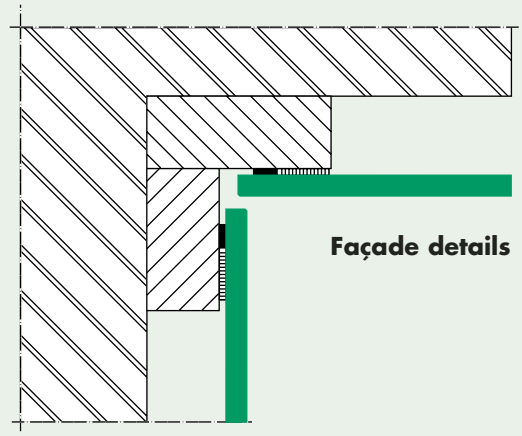
Planed timber battens minimum:

- end battens: 45 x 28 mm
- intermediate battens: 55 x 28 mm
- intermediate panel jointing battens: 85 x 28 mm

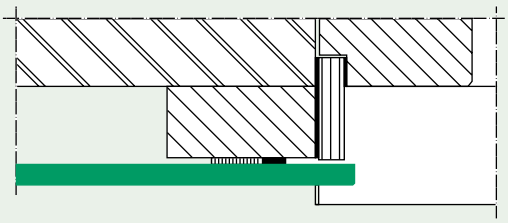


TS400: Invisible fixing with adhesive and screws.

HORIZONTAL CROSS-SECTION

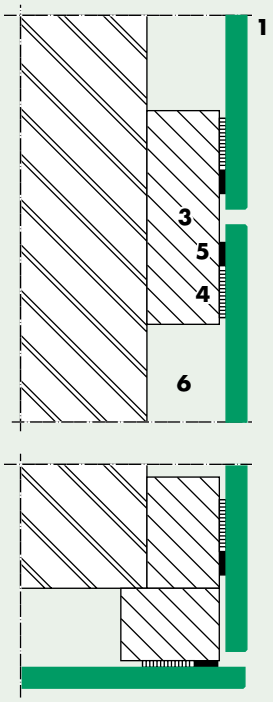


Façade details

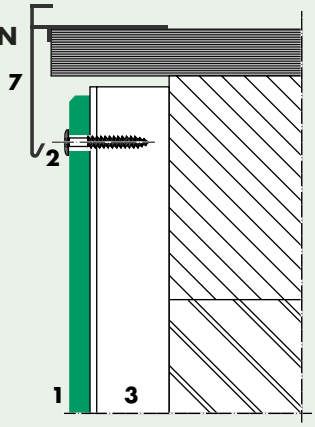


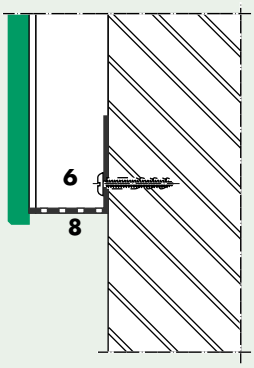
Window details

VERTICAL CROSS-SECTION



Façade details





1. Trespa Meteon panel
2. Screw (in the colour of the panel)
3. Vertical batten (planed)
4. Adhesive bead
5. Double-sided adhesive tape
6. Cavity
7. Coping profile
8. Ventilation profile

TS300: Blind fixing using profiled edges

8, 10 and 13mm thick panels can be installed by fitting their specially grooved horizontal edges into continuous aluminium TS-300 rails.
The horizontal aluminium TS-300 rails can be fixed to a vertical timber or aluminium support construction.
The grooved horizontal edges enable the panels to be attached to the aluminium rails, while hiding the rails from sight.
The TS-300 fixing method is typically suited to install large uninterrupted façade surfaces with horizontal lines.

General

Joints: 10 mm
Panel thicknesses: 8, 10 and 13mm

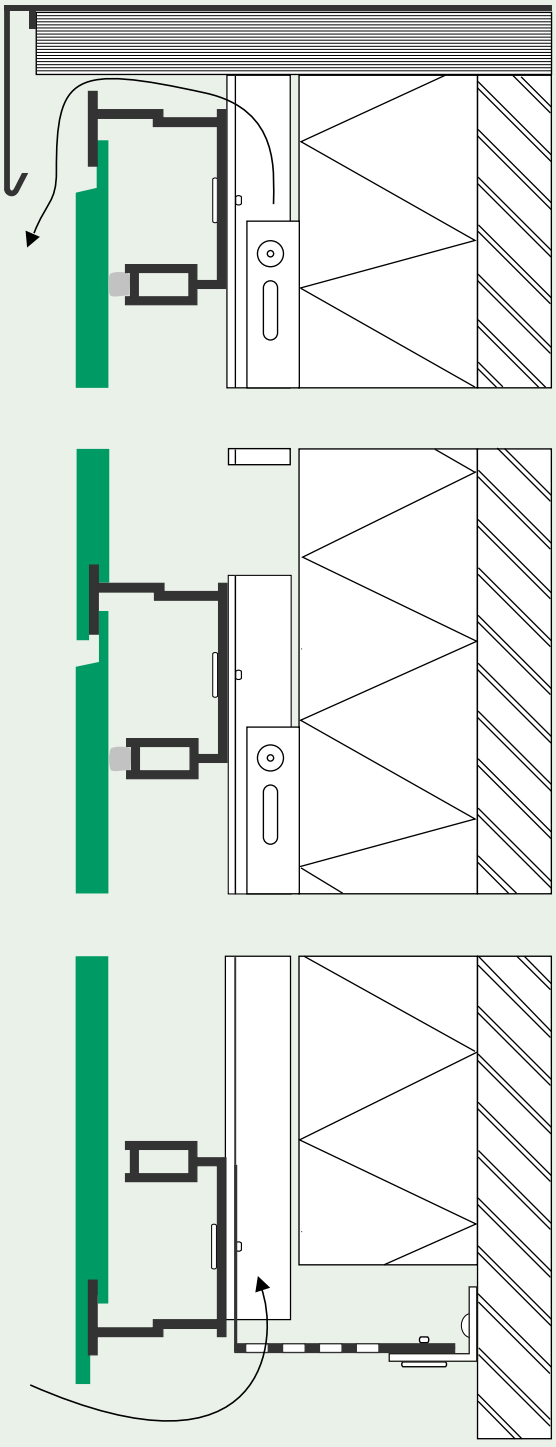
Panel size

The TS-300 fixing method can only be used for single-field spans. As a result, the maximum panel height is limited as indicated in the table below. The maximum panel width is 1500 mm.

Panel thickness	*Maximum panel height (in mm)**
8 mm	*600 mm*
10 mm	*750 mm*
13 mm	*900 mm*

* Also see the chapters on 'Deflection' and 'Wind Loads'

TRESPA SYSTEM 300



TS650: Blind fixing with clips (Sidings)

8mm thick Trespa panels have a groove in their bottom edge enabling them to be attached using special stainless steel fixing clamps.
The panels are installed from the bottom upwards, with the first line of clamps being fixed to adjusting blocks or to an 8mm thick adjusting batten (see details). The panels in the top row are screwed at their top edge.

General

Joints: minimum 10mm
Panel thickness: 8mm

Fixing and edge distances

The panel overlap is approx. 25 mm.
The panel height can vary from 200 to 300 mm; the max. panel length is 3650 mm. The horizontal clamp fixing distance is max. 600 mm centre-to-centre.

Max. building height 8 m:

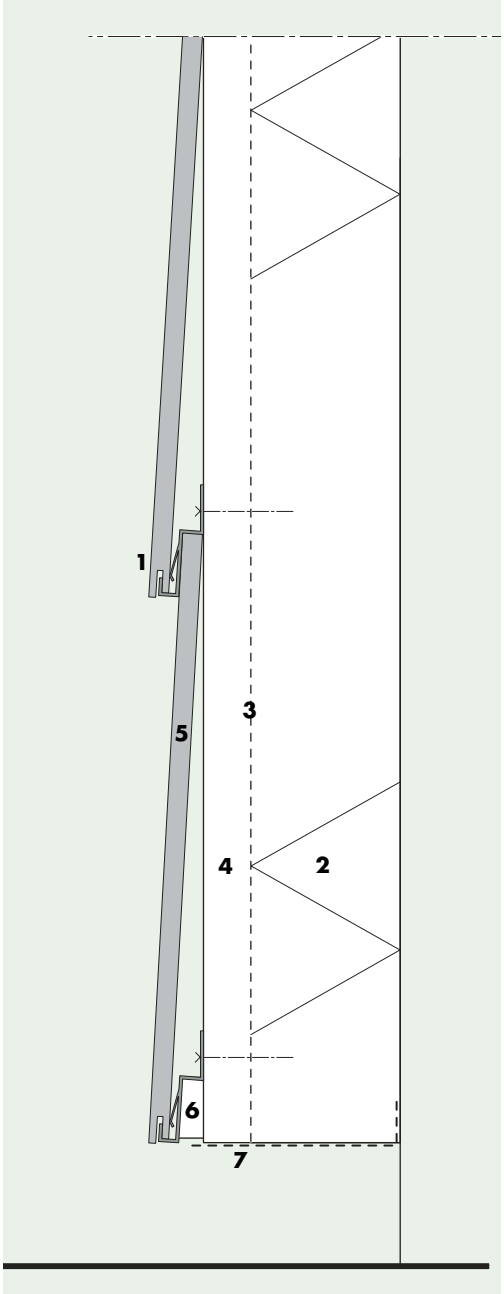
Panel thickness	*Hor. fixing distance*	*Panel height*
8 mm	*600 mm*	*200 - 300 mm*

Fixing detail

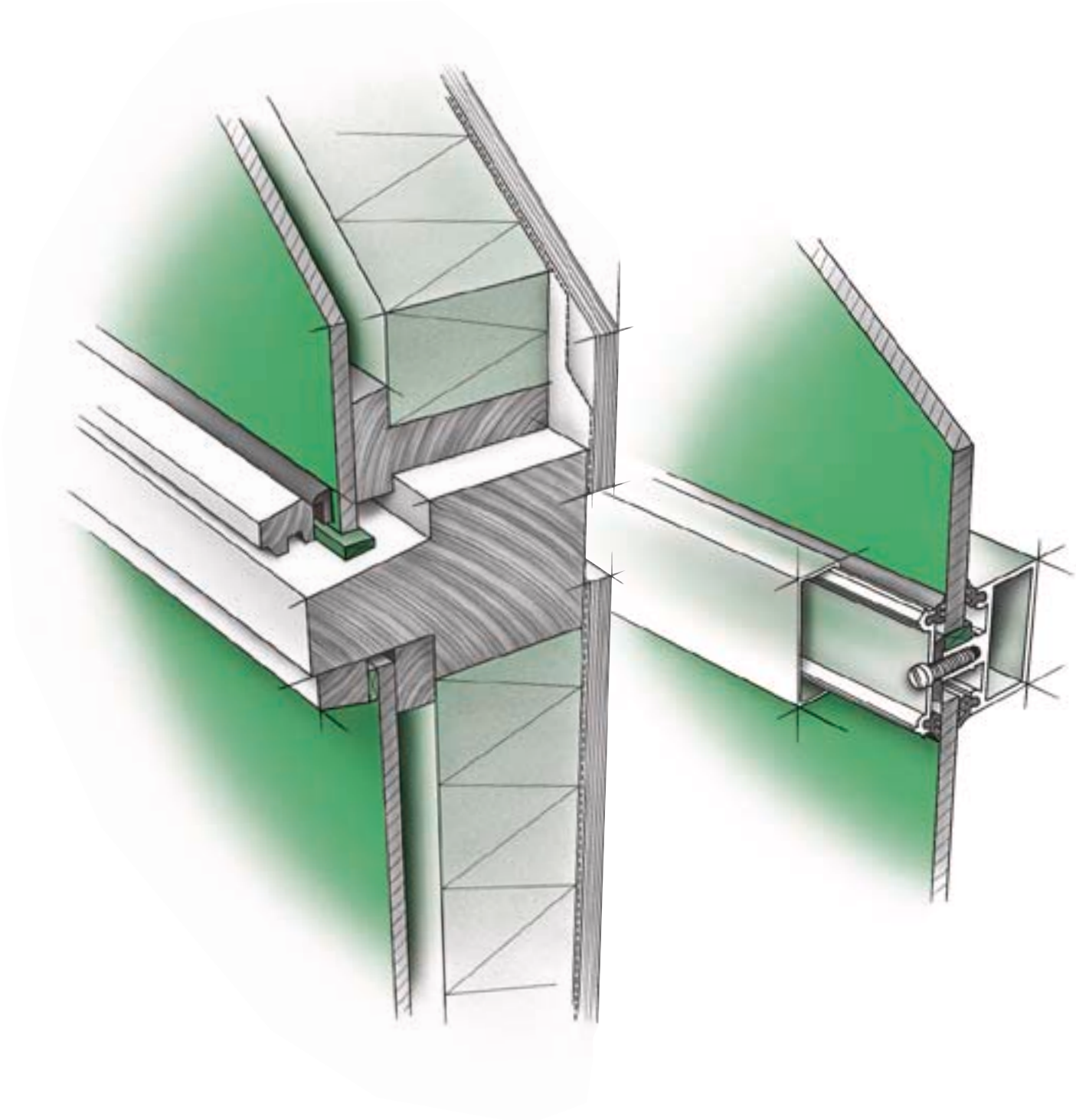
The Trespa panels are fixed to vertical timber battens with centre-to-centre distances of max. 600 mm. The minimum batten width at the joints must be 75 mm. A width of 50 mm is sufficient for the other battens.

Every panel is secured in the centre once to prevent it shifting horizontally.

VERTICAL CROSS-SECTION



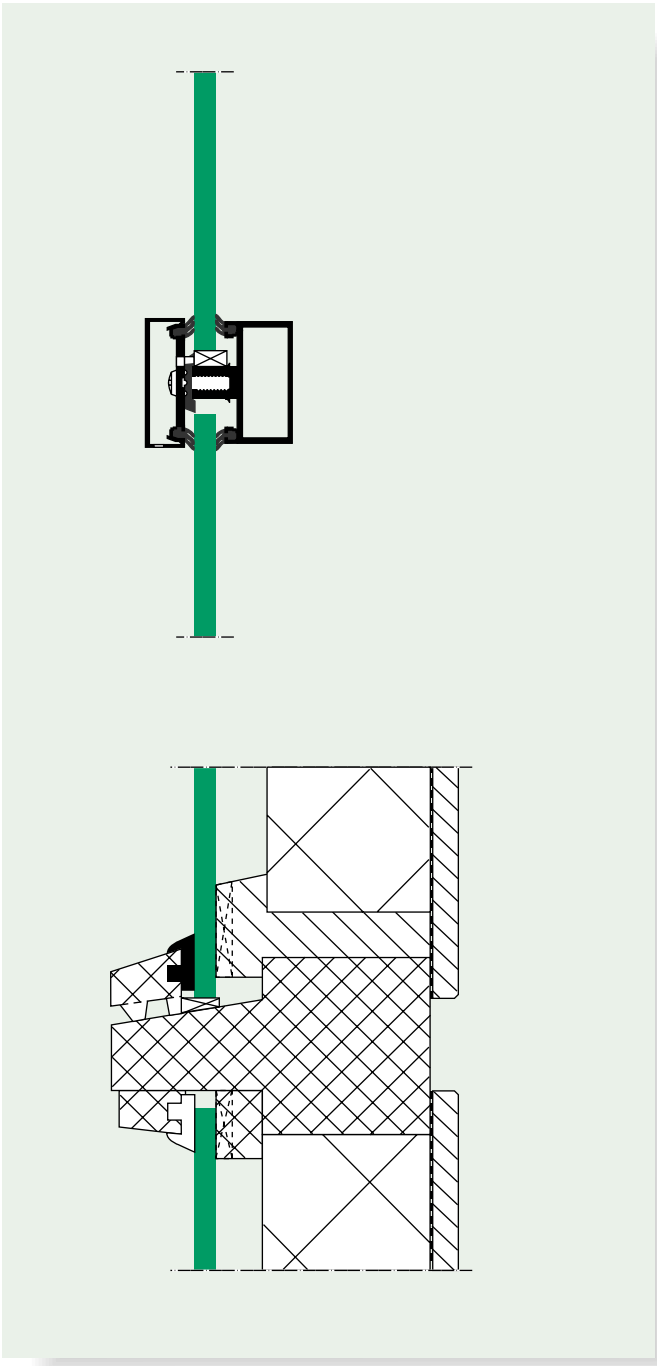
1. Stainless steel clamp screwed onto timber
2. Thermal insulation
3. Breather foil
4. Ventilated cavity
5. Trespa 8 mm
6. Adjustment block thickness 8 mm
7. Ventilation strip



PANELS IN FRAMES.

Single-skin panels in frames.

Panels with a thickness from 6 mm can be placed into wood, metal and plastic frames. Single-skin panels are suitable for insulated as well as non-insulated walls. Ventilation behind the panel is always required. Therefore, cavities are made in the lower and upper horizontal profile. Water drains are also necessary in the lower horizontal profile. Durable EPDM gaskets close the gap between profile and panel, mastic and tape are not allowed for this.



General

Panel thickness: from 6 mm
Panel edge: 6 mm free from the frame at three sides

Fixing centres

x = smallest panel span
y = largest panel span

maximum spans x (in mm)

relation $\frac{y}{x}$	*panel thickness (in mm)*			
	6	*8*	*10*	*13*
1.0	*620*	*830*	*1,040*	*1,350*
1.2	*580*	*780*	*970*	*1,260*
1.4	*550*	*730*	*910*	*1,190*
1.6	*520*	*690*	*860*	*1,130*
1.8	*490*	*660*	*820*	*1,070*
2.0	*470*	*630*	*780*	*1,020*
≥2.5	*450*	*600*	*750*	*980*

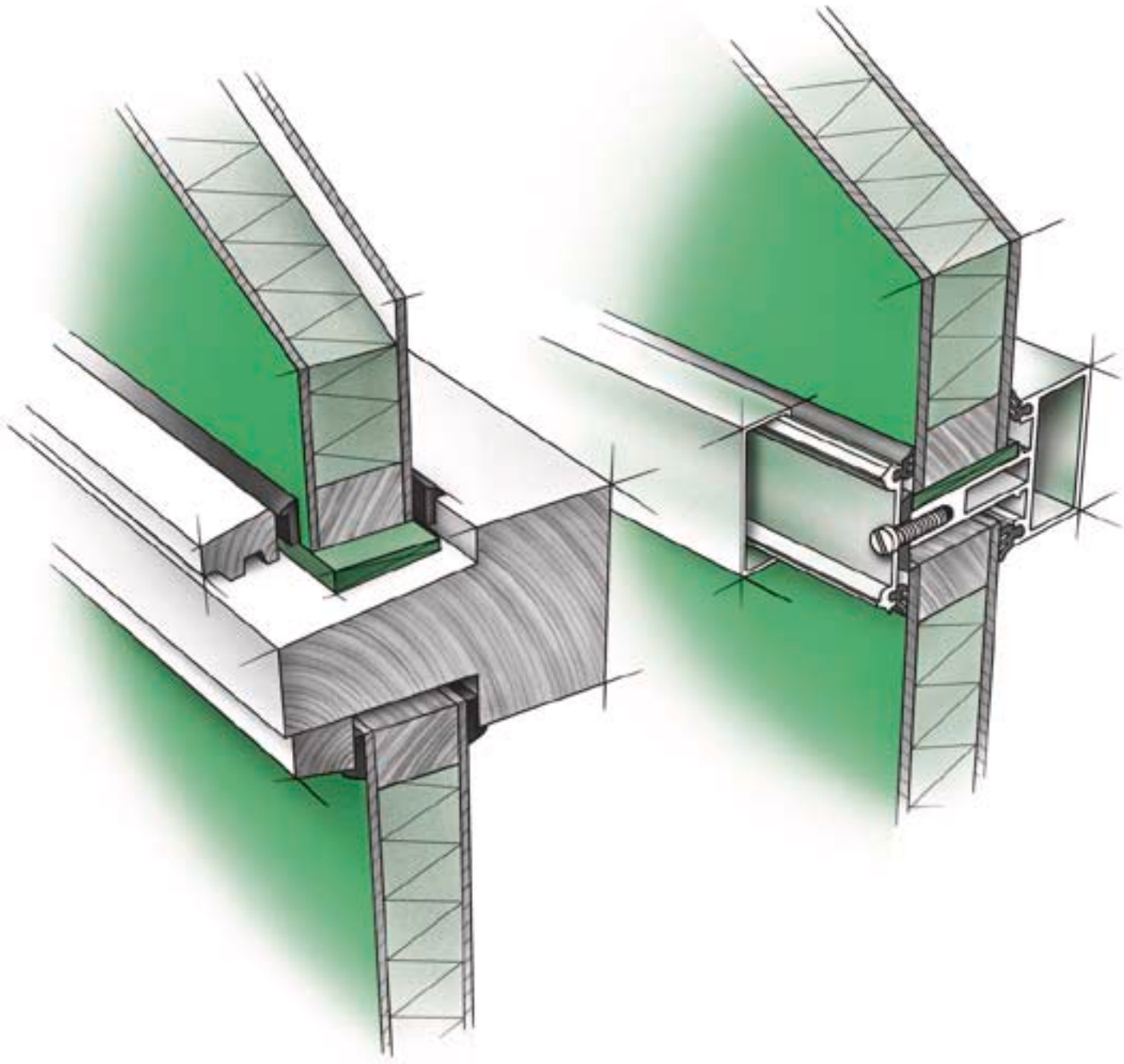
Fixing detail

Groove in profile: 20 mm deep

EPDM gasket: minimum 4 mm after installation

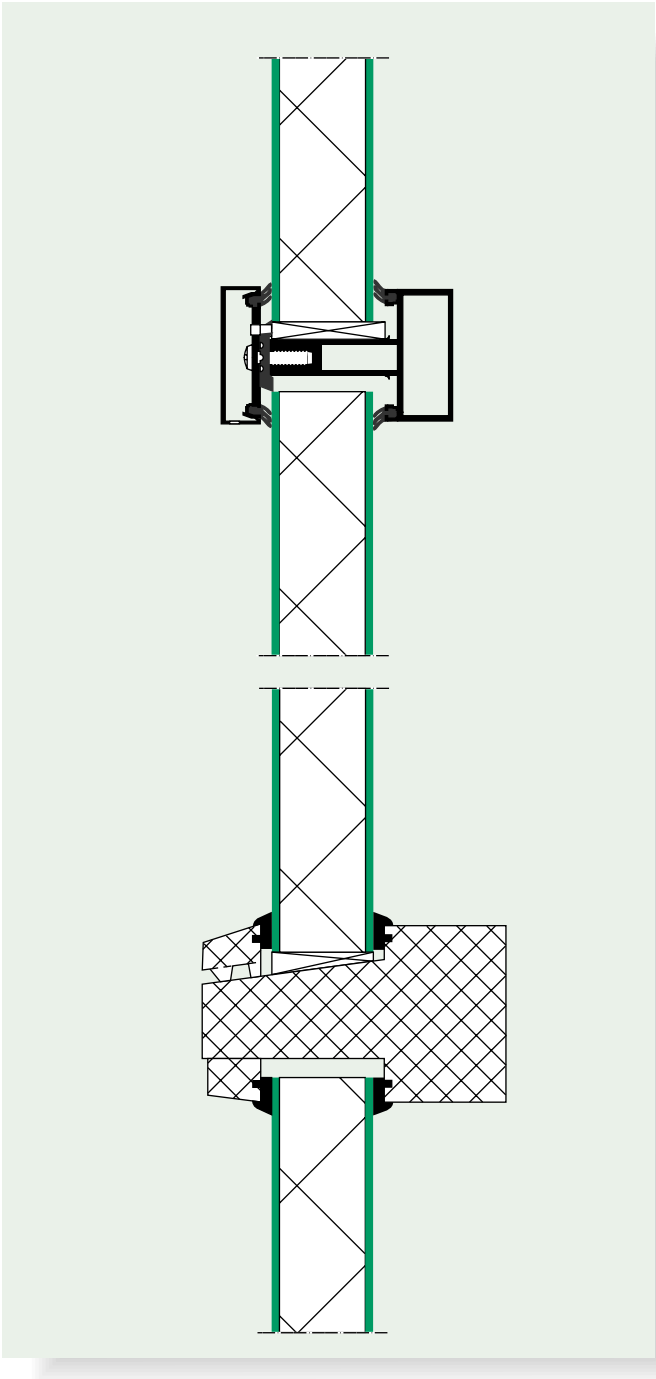
Water drains / ventilation horizontal profiles:
- hole diameter 8 mm
- slotted holes 5 x 25 mm; total 20 cm^2/m^1

Two supports per panel: minimum 5 x 50 mm



Sandwich panels in frames.

Trespa sandwich panels are composed of a core of insulating material and Trespa sheets glued on both sides. Panels can be placed into wood, metal and plastic frames. Sandwich panels are very suitable for thermal insulation, fire retardant and acoustical use. Water drains are necessary in the lower horizontal profile always. Durable EPDM gaskets close the gap between profile and panel; mastic and tape are not recommended for this.



General

Panel thickness: minimum 16 mm
Panel edge: 6 mm free from the frame at three sides

Composition: 3mm Trespa decor; PUR or PS as insulation
Maximum spans on request

Total thickness (mm)	*U-value with PUR-insulation (λ = 0.030 W/mK)*
16	1.91
21	1.45
26	1.17
31	0.98
36	0.84
46	0.66
56	0.54
66	0.46

Fixing detail

Groove in profile: 20 mm deep

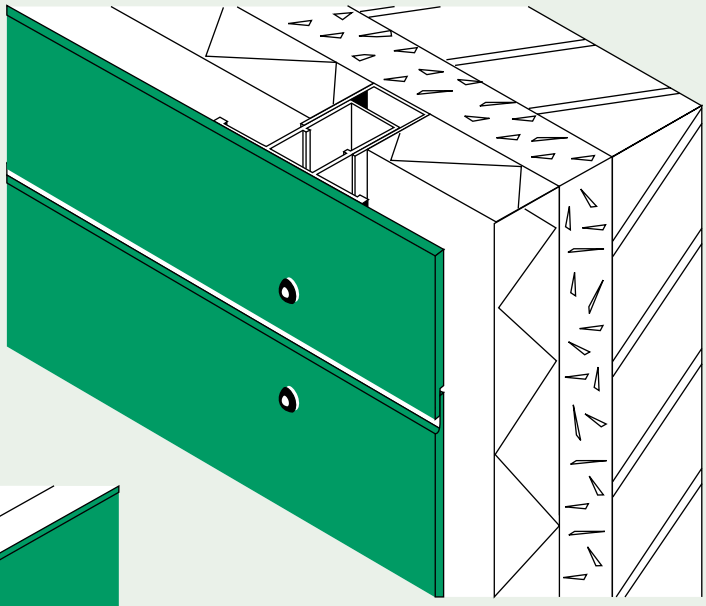
EPDM gasket: minimum 4 mm thickness after installation

Water drains horizontal profiles:
- hole diameter 8 mm
- slotted holes 5 x 25 mm

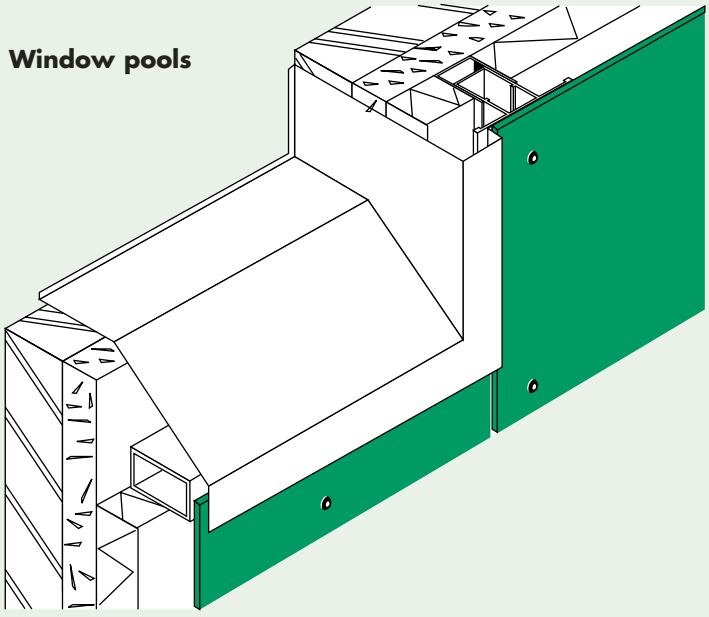
Two supports per panel: minimum 5 x 50 mm

System 700 for overcladding.

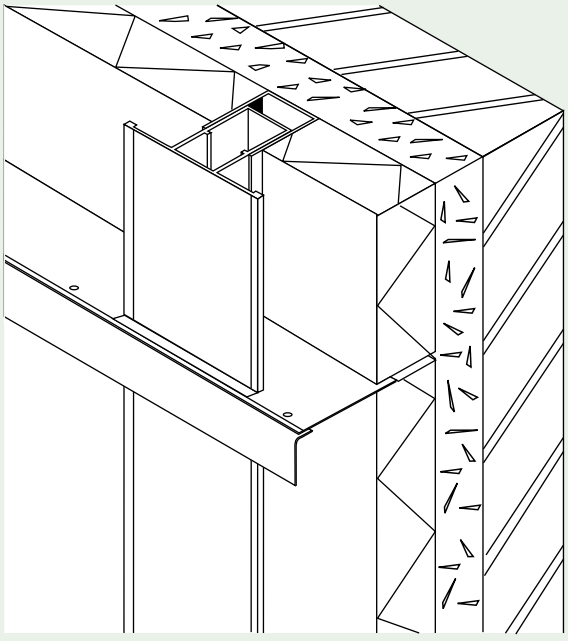
Horizontal joint with rebated panels



Window pools



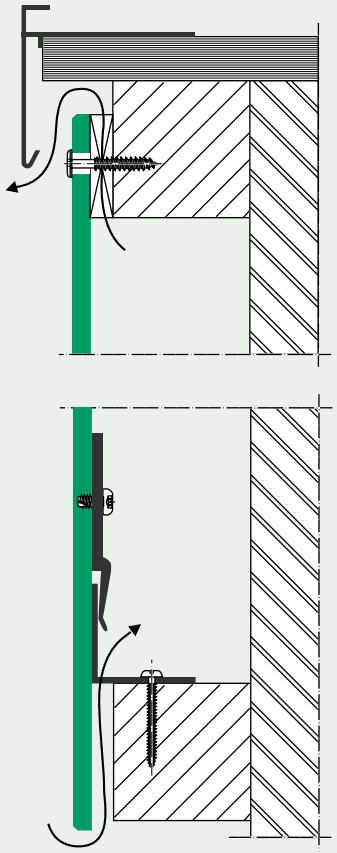
Fire break



SPECIAL FIXINGS.

Special fixings.

FASCIAS



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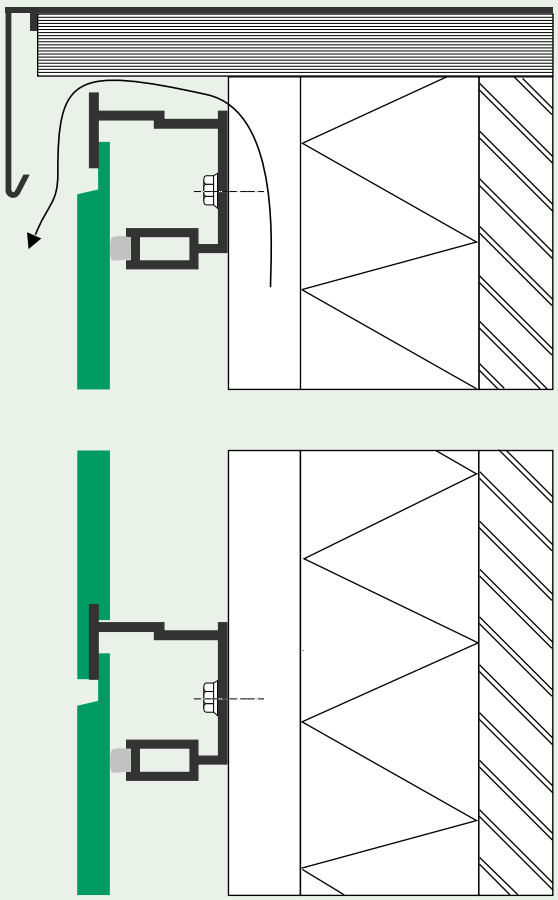
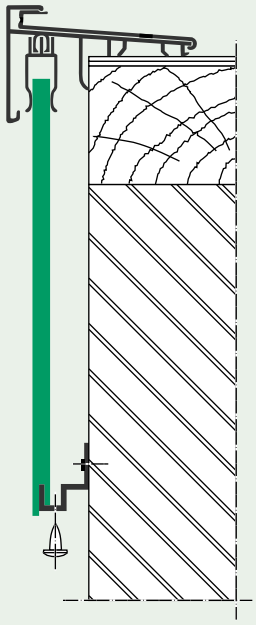
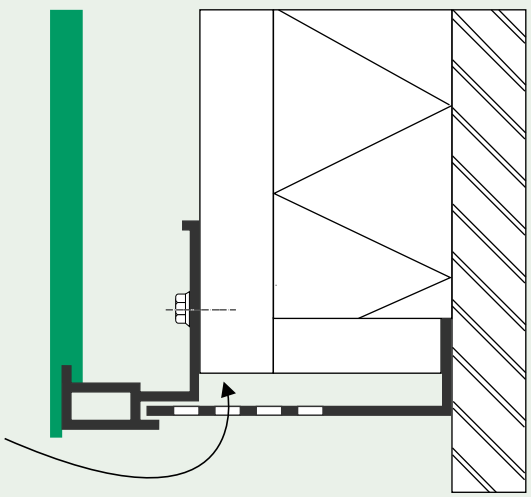


COMPRIAL





BUILDING REGULATIONS.

Standards.

The Building Regulations 1991

A1;	Loading
A3 & A4;	Disproportionate collapse
B1;	Means of escape
B4;	External fire spread
C4;	Resistance to weather and ground moisture
D1;	Cavity insulation
E1;	Airborne sound (walls)
F1;	Means of ventilation
F2;	Condensation
L;	Conservation of fuel and power
K2;	Protection from falling
REG 7;	Materials and workmanship

BS 476;	Fire tests on building materials and structures.
Part 6.	Method of test for fire propagation for products
Part 7.	Method for classification of the surface spread of flame of products

BS 4471;	Sizes of sawn and processed softwood
BS 5268;	Structural use of timber. Part 5. Code of practice for the preservative treatment of structural timber
BS 6180;	Protective barriers in and about buildings
BS 6206;	Impact performance requirements for flat safety glass and safety plastics for use in buildings
BS 8200;	Design of non-loadbearing external vertical enclosures of buildings

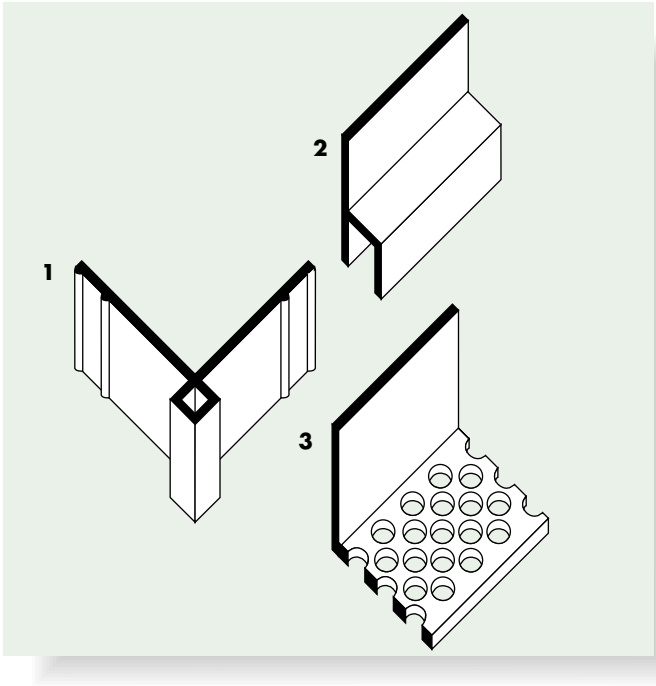
CP3, Chapter V; Part 2: Basic data for the design of buildings.

PD 6484;	Commentary on corrosion at bimetallic contact and its alleviation

Auxiliary profiles.

Auxiliary profiles are available to close the joints in between the Trespa panels. The most common are pictured below. The profiles can be supplied by third parties in various colours and dimensions. The addresses of suppliers will be supplied on request.

1. Plastic or aluminium corner profile
2. Plastic or aluminium H profile for horizontal joints (please note that dirt marks are easily made)
3. Plastic or metal ventilation profile



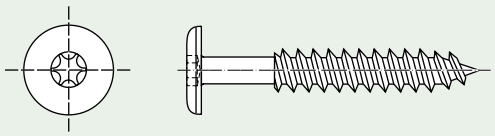
Fixings.

Visible fixing

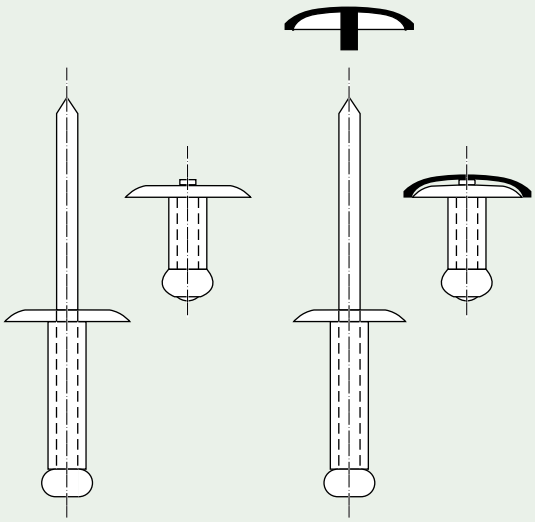
1. Fast fixing screw for Trespa, stainless-steel, for 6 mm to 10 mm panels
- Material: A2 or A4
- Diameter: 4.8 mm
- Length: minimum 36 mm
- Head diameter: 12 mm
- Head height: 2.5 mm
- Hole diameter: 8 mm
- Available in all Trespa Meteon colours
- For use of other screws keep minimum 4 mm for diameter and 35 mm for length

2. Aluminium or stainless steel blind rivet for panel thicknesses from 6 mm
- Material: AlMg5 or A2 or A4
- Diameter: 5 mm
- Head diameter: 14 mm (with cap in Trespa Meteon colours: 16 mm)
- Head diameter: 16 mm on request (in Trespa Meteon colours)
- Hole diameter: 10 mm
- Length: panel thickness + subframe + 5 mm minimum

Fast fixing srew for Trespa



Blind rivet



Fixings.

Invisible fixing:

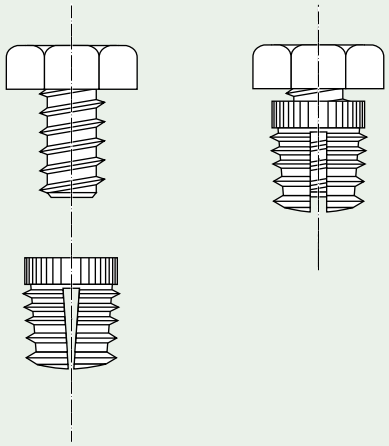
1. M6 straight insert for panel thickness of 10 mm and more
- Material:
  Insert: brass
  Srew: A2 or A4
- Diameter:
  Insert: 8.0 mm
  Screw: M6
- Length:
  Panel thickness 10: 7.5 mm
  Panel thickness 13: 10.5 mm
- Hole diameter: 8.0 mm
- Hole depth: special drill with depth stop

2. Thread cutting screw for panel thickness of 8 mm and more
- Typ: EJOT PT S 60xL
- Material: A4
- Diameter: 6.0 mm
- Length:
  Panel thickness 8 : 9.5 mm
  Panel thickness 10: 11.5 mm
  Panel thickness 13: 14.5 mm
  (inclusive 5 mm for bracket thickness)
- Hole diameter: 4.9 mm (DF-core)
- Hole diameter: 5.3 mm (kraft-core)
- Hole depth: special drill with depth stop
  Panel thickness 8 : 5.5 mm
  Panel thickness 10: 7.5 mm
  Panel thickness 13: 10.5 mm

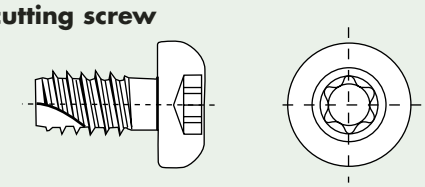
3. Stainless-steel conical screw insert
- Typ: Keil Hinterschnittdübel M6
- Material: A4
- Hole depth:
  Panel thickness 8 : 5 mm
  Panel thickness 10: 7 mm
  Panel thickness 13: 10 mm
- Hole diameter: 7 mm/9 mm
  to be drilled with a special machine and drill

4. Stainless-steel conical rivet insert
- Typ: Fischer - Zykon - Panelanchor FZP
- Material: A4
- Hole depth:
  Panel thickness 8 : 5 mm
  Panel thickness 10: 7 mm
  Panel thickness 13: 10 mm
- Hole diameter: 9 mm/11 mm
  to be drilled with a special machine and drill

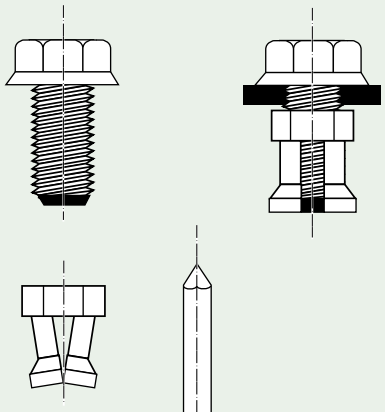
Straight insert



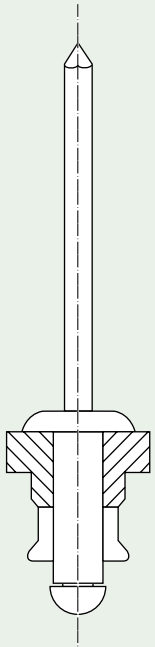
Thread cutting screw



Conical screw insert



Conical rivet insert



Deflection.

The maximum flexure (f) limit, measured at the horizontal surface of a façade panel between two fixing points (L), has been laid down. A minimum (wind) load should be taken into account to prevent the façade structure from not being strong enough.

Façade cladding flexure:
$f \leq L/200$

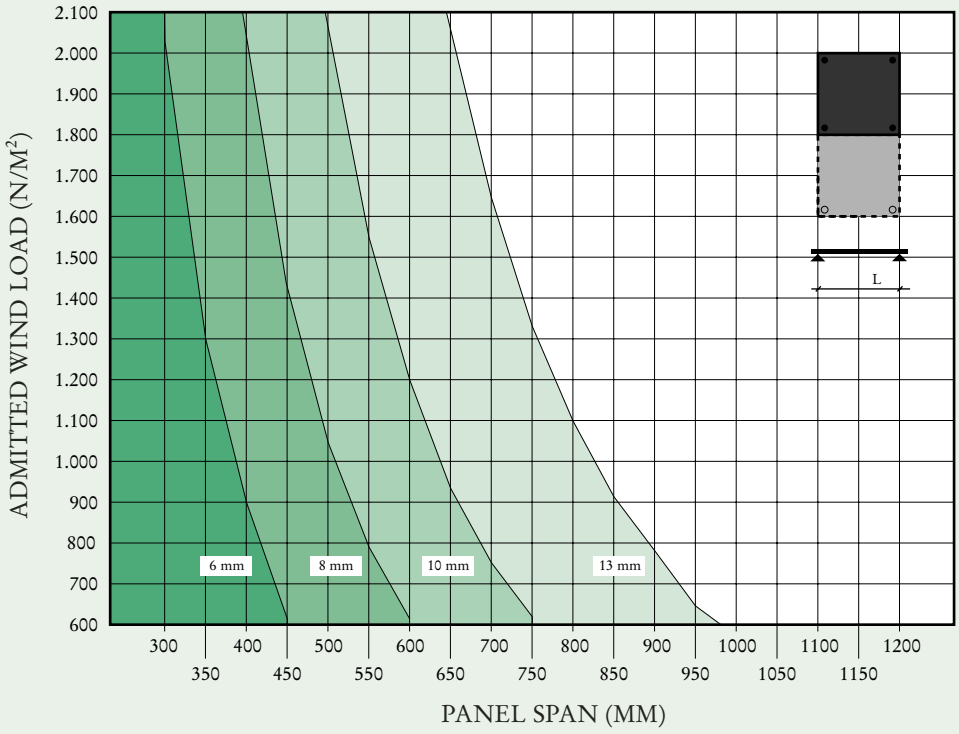
Wind loads may be multiplied with 0.70 for calculating panel deflections, with respect to a minimum (wind) load of $p \geq 600\ N/m^2$.

Four sided supported panels:

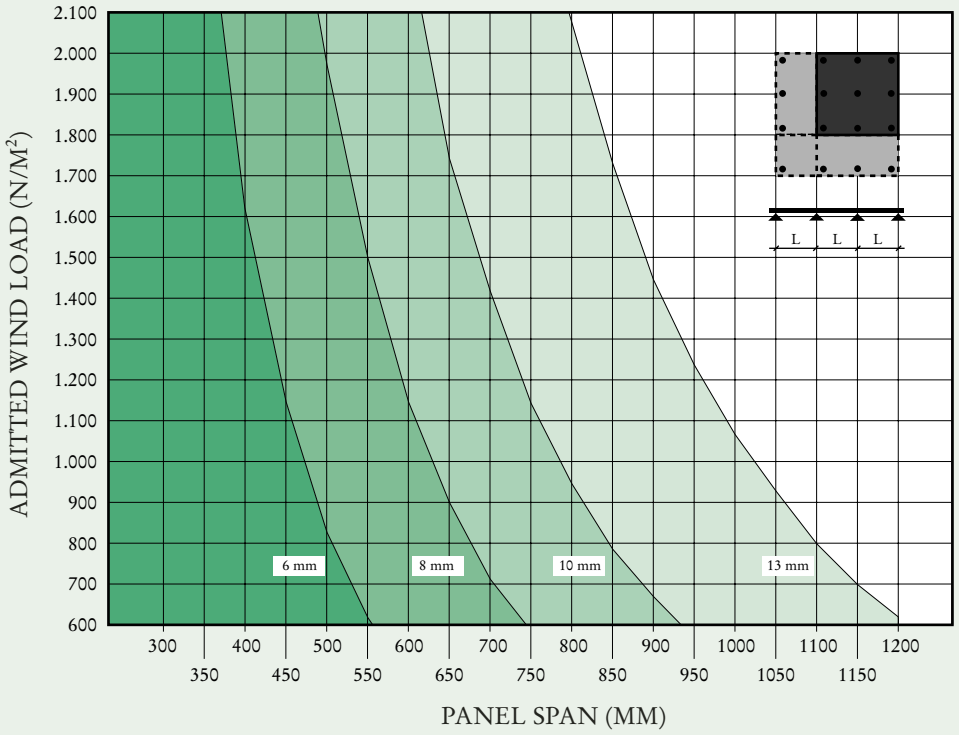
The graphs can be used for determining the thickness of a four sided supported panel. Determining the thickness, the shortest panel length (lx) may be multiplied by correction factors below after reading the graph:

Relation $\frac{ly}{lx}$	*correction factor for lx*
1.0	*1.4*
1.2	*1.3*
1.4	*1.2*
1.6	*1.15*
1.8	*1.10*
2.0	*1.05*
≥ 2.5	*1.0*

DEFLECTION FOR 2-SUPPORTS (f=L/200)



DEFLECTION FOR MORE THAN 2-SUPPORTS (f=L/200)

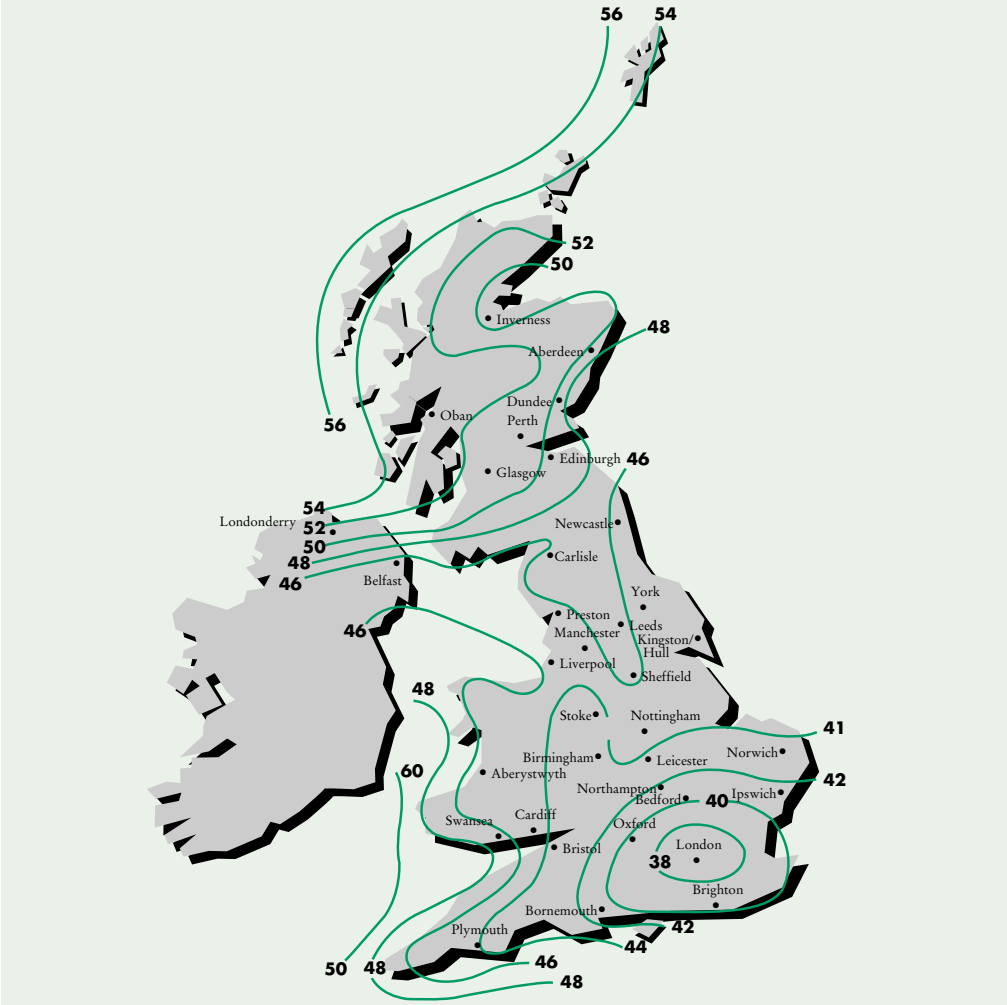


Wind loads and load bearing.

Wind loads:

$Pw = c * v^2 / 1.6$

p = wind pressure
c = pressure coefficient
v = wind speed



Load bearing:

Load bearing of panels, supports and fixings included, has to take place in such a way that maximum loads do not exceed admitted strengths.

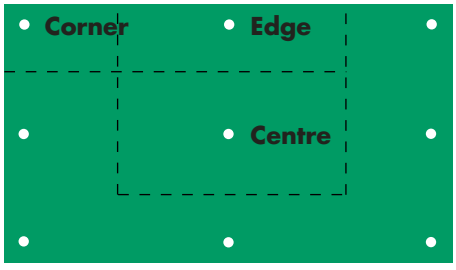
The weight of a panel will be spread over several fixings and can be ignored in the calculation when a minimum (wind) load of 600 N/m2 is respected.

Visible fixing:

Maximum admittable pull-out strength for visible fixing with srews and rivets, depending on fixing position in panel:

Pull-out strength	*Fixing position in panel*		
Panel thickness	*centre*	*edge*	*corner*
6 mm	*480N*	*300N*	*240N*
8 mm	*500N**	*500N**	*430N**
10 mm	*500N**	*500N**	*500N**

** maximum pull-out strength for pine wood respectively aluminium rivet*
- including safety factor = 3; for screw, rivet and Trespa panel
- safety factor = 4 for pull-out strength in wood



Blind fixing:

Maximum admittable pull-out strength for blind fixing with inserts.

panel thickness	*Pull-out strength*		
	straight insert	*thread cutting screw*	*conical insert*
8 mm	*250N*	*350N*	*300N*
10 mm	*350N*	*650N*	*400N*
13 mm	*550N*	*1150N*	*950N*

- including safety factor = 3; for insert and Trespa panel
- including excentricity factor = 2; for brackets (leverage effect)

Note

Note

Note

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Quality.

Design à la carte.

Trespa International BV

Trespa International BV specializes in high quality panel material for façade cladding and interior use. Trespa has both the expertise and the means to develop products for specific segments of the market. Trespa is continually looking for ways to protect the environment even more effectively.

Four perfect product lines

Production of the façade cladding material Trespa Meteon is based on unique, patented techniques, which guarantee excellent weather resistance and colourfastness. Trespa Athlon, which offers you outstanding moisture resistance along with scratch and wear resistance, is particularly suitable for interior use. Trespa Virtuon is aesthetically pleasing and the perfect product for interior applications where durability, hygiene, cleanability are required. And Trespa TopLab *PLUS*, highly resistant to chemicals and designed for use as laboratory worktops, completes the product programme.

Trespa guarantees quality of both products and services. We offer our customers optimal technical support as well as straightforward documentation. Proof of this approach is the award of the ISO 9001 and ISO 14001 certificates.

Whatever your requirements, Trespa offers a full support service. Please contact us for further information.

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All information is based on our current state of knowledge. It is intended as information concerning our products and their application possibilities, and is therefore not intended as any form of guarantee with regard to any specific product characteristic.

Colours
The colours in this document are printed, and therefore, may vary slightly from the original Trespa panel colours with respect to gloss, colour shades and surface texture. Original samples are available on request.

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U001

Zandbeek Communication Group (NL) 0405/3.000

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