

Façade panels for interior cladding on a wooden supporting structure

1 General

These application instructions are specifically intended for the fastening of EURO PANELS OVERSEAS N.V. façade panels as decorative interior wall cladding on a wooden supporting structure. A number of basic principles are given that must be adhered to. For variations or additional advice one can always contact EURO PANELS OVERSEAS N.V..

2 Cladding material

The following EURO PANELS OVERSEAS N.V. products are treated in this document.

• ETER-COLOR INTERIOR	8 mm
• OPERAL	9 mm
• TEXTURA	8 mm
• NATURA	8 mm
• NATURA PRO	8 mm
• PICTURA	8 mm

Product data and processing information can be found in the product information sheets, available from EURO PANELS OVERSEAS N.V..

When sawing NATURA and NATURA PRO, the sawed edges must be impregnated with LUKO (a transparent impregnating agent) to minimize local colour differences due to moisture absorption.

3 Area of application¹

These instructions apply for inner wall coverings not exposed to wind loads.

Should a considerable wind load nevertheless be able to occur (e.g. large open windows) one must follow the instructions for façade cladding.

The horizontal centre to centre distance between the supporting laths is determined by the occurring load with a safety factor. The occurring load is determined by the area of application:

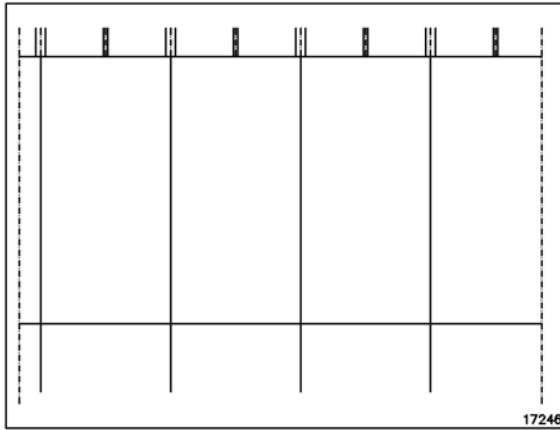
- area of application I: private use
- area of application II: public use.

¹ These instructions are only valid for applications in Europe, for applications outside this territory the Technical Service Centre of EURO PANELS OVERSEAS N.V. should be consulted.

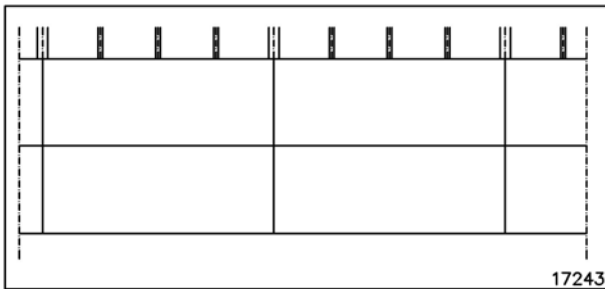
Façade panels for interior cladding on a wooden supporting structure

4 Patterns with panels

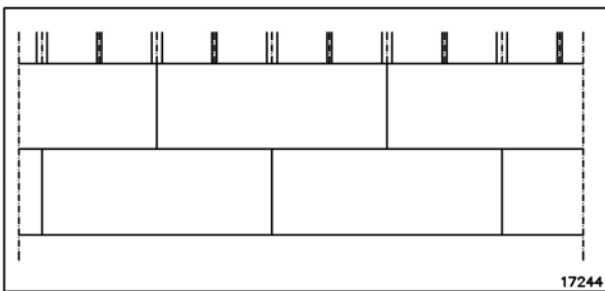
The following patterns are possible. For aesthetic reasons, use rectified panels only.



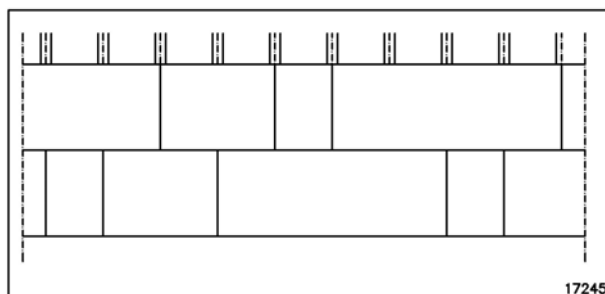
Straight pattern
with vertical panels



Straight pattern
with horizontal panels



Semi pattern
with horizontal panels

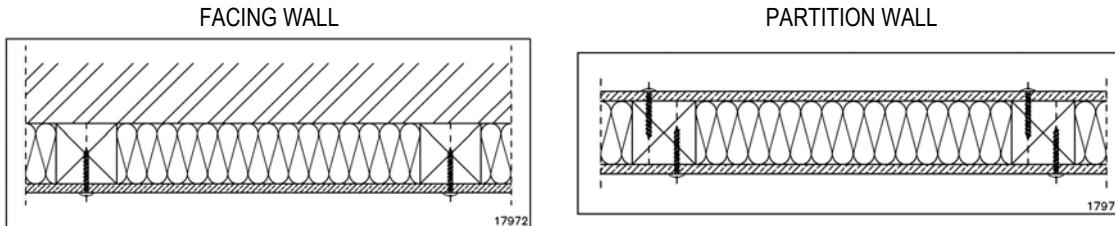


Free pattern
with horizontal panels

Façade panels for interior cladding on a wooden supporting structure

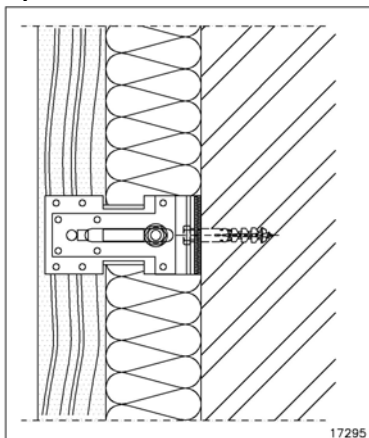
5 Supporting structure

The EURO PANELS OVERSEAS N.V. façade panels are fixed on a skeleton of wooden supporting laths. The wall front or partition wall must be constructed according to the rules of good workmanship.



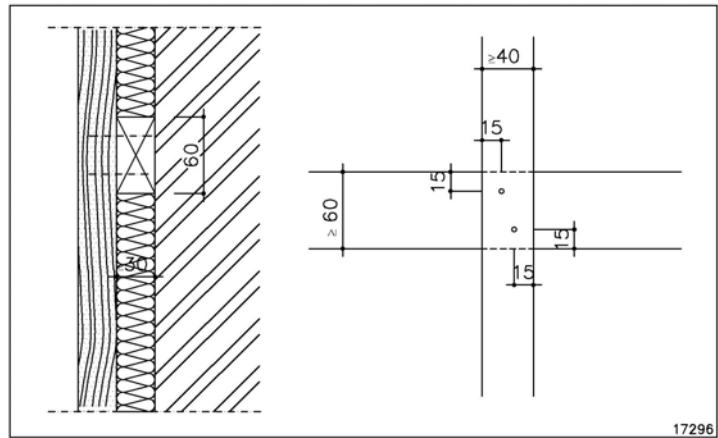
Facing walls are fixed on wooden supporting laths which are fixed at a certain distance on the back construction by means of adjustable brackets or horizontal wooden cross laths.

Adjustable bracket



minimum thickness supporting lath: 50 mm

Horizontal wooden cross laths



minimum width horizontal cross lath: 60 mm
minimum thickness horizontal cross lath: 30 mm

The supporting structure and the back construction must be able to resist the forces that are exerted.

- maximum buckle under the influence of strain : $\leq \text{span}/300$
- safety factor calculation of strength : 3

The quality of the wood must suffice with regard to that described in the prevailing standards for this area of application. The wood must also be protected against being affected by fungi, etc. in accordance with the prevailing standard.

- minimum characteristic bending strength of wood : 18 N/mm²
- minimum average modulus of elasticity : 9000 N/mm²

The vertical wooden supporting laths are planed on one side and aligned in the same plane when placing to obtain sufficient evenness. The wood must also be sufficiently stable so that alignment is retained. A small expansion joint is left between the wooden supporting laths.

- maximum unevenness : $\leq L/1000$
- joint between supporting laths : $\geq 5 \text{ mm}$

Façade panels for interior cladding on a wooden supporting structure

The wooden supporting laths must be sufficiently wide for the correct fitting of the fastening accessories. At vertical joints it is recommended to use slightly wider wooden supporting laths than the minimum width to be able to accommodate tolerances in alignment (and therefore avoid "air screws").

Fastening	glue	screws
Minimal width supporting lath without joint	≥ 40 mm	≥ 40 mm
Minimal width supporting lath with joint	≥ 100 mm	≥ 90 mm
Advised width supporting lath with joint	100 mm	110 mm

The vertical supporting laths must be sufficiently thick to enable the correct application of the fastening accessories. The thickness of the wooden supporting lath is determined by the load occurring (area of application I or II), the centre to centre distance between the supporting laths and the span (e.g. height of the wall).

Fixing with adjustable brackets

- Minimum thickness of supporting laths : 50 mm
- Maximum distance between brackets : ≤ 1500 mm

Fixing on horizontal cross laths

Distance between horizontal cross laths	Minimum thickness of the vertical supporting laths
600 mm	≥ 30 mm
800 mm	≥ 35 mm
1000 mm	≥ 40 mm
1200 mm	≥ 45 mm
1500 mm	≥ 50 mm

APPLICATION PROCEDURE

The following procedure can be used for the fitting of large-size facade panels on a wooden supporting structure by means of adjustable brackets.

1. Check the straightness of the wooden laths
2. Use the facade cladding design plan to mark off the centre to centre distances between the supporting laths on the facade by means of a plumb-rule or a laser
3. Fit the adjustable brackets
4. Fit the supporting laths on the brackets
5. Align the supporting laths horizontally and vertically in a section by the gradual arrangement of the brackets (maximum unevenness is less than L/1000)
6. Fit the EURO PANELS OVERSEAS N.V. large-size facade panels. One starts at the top of and fits the panels using a metal lath with straight edge that are clamped on the supporting laths. Damaging the panel is avoided by assembling from top to bottom. Calibrated plates can be used to assemble the panels with the correct joint width. To obtain an attractive result it is best to minimise the tolerance of the vertical joints compared to the tolerance of the horizontal joints.
7. The calibrated plates have to be removed carefully, so that the sheet edges are not damaged.

Façade panels for interior cladding on a wooden supporting structure

6 Fixing method

6.1. Maximum distance between wooden supporting laths

The distance between the fixing accessories is determined by the charges that are exerted and the demand of dimensional stability.

- Maximum distance between the fixing accessories : 600mm

The horizontal centre to centre distance between the supporting laths is determined by:

- the width of the panel
- the maximum distance between the fixing accessories
- the distances from the edge of the fixing accessories (see below)
- the joint opening

Example (fixing with screws):

width of panel = 1220 mm, maximum distance between screws = 600 mm, distance from edge screws = 25 mm, joint opening = 10 mm

→→→centre to centre distance between supporting laths = $(1220+10)/2 = 615$ mm

→→→ distance between the screws = $(1220-2*25)/2 = 585$ mm ≤ 600 mm

6.2. Invisible fixing through gluing

6.2.1. Invisible fixing through bonding²

Bonding must always take place in accordance with the conditions of the supplier of the bonding system and under his supervision and guarantee conditions. Gluing on a metal supporting structure is a more durable method than gluing on a wooden supporting structure.

Whether panels can be glued or not depends on the chosen bonding system. The following table gives an overview of the different suppliers that have bonding systems for the indicated Euro Panels Overseas N.V. façade panels.

	Textura	Natura	Eter-Color Interior	Pictura	Natura Pro
Bostik	●	●		●	●
Innotec	●	●		●	●
Sika	●	●		●	●
Soudal		PA			
Tweha	●	●	●	●	●

PA= project advice

- Always consult the complete gluing advice of the manufacturer of the glue!
- An excellent quality of the glue can only be obtained by strictly following these instructions.
- Always work with certified products (KOMO, ATG or equivalent), tested on Euro Panels Overseas N.V. material.
- The above mentioned list is regularly subject to changes. Always consult the manufacturer of the glue to be informed on the latest updates.

Depending on the chosen bonding system it is possible that:

- The backside of the panel must be raised with sandpaper P80 on the spot of the adhesive bonding
- The supporting laths must undergo prior treatment with an adhesion primer. Hereby the supporting laths must suffice with regard to the requirements made for the application of the adhesion primer (e.g. maximal moisture level, prescribed wood preservation techniques).
- The façade panel must be cleaned and be given prior treatment with an adhesion primer.

A double-sided adhesive strip is applied as support for the façade panel during the hardening period of the glue, while also indicating the distance between the façade panel and the wooden supporting laths. The correct quantity of glue must be applied. The application of the façade panel requires the necessary precision.

Gluing always has to be done on multiple support structure, or in other words, gluing on a simple support structure is forbidden because of aesthetic reasons.

² The maximum height can be restricted by the conditions of the supplier of the glue or by prevailing legislation.

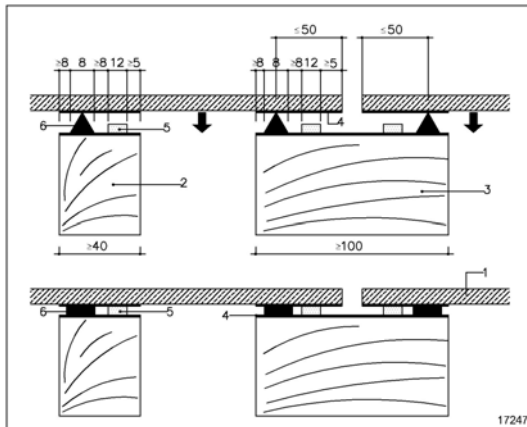
Façade panels for interior cladding on a wooden supporting structure

6.2.2. Edge distance

The following maximum edge distance must be respected.

- Maximum edge distance of the adhesive : 50 mm

The following schematic drawing illustrates the gluing procedure.



1. façade panel
2. supporting lath without joint
3. supporting lath with joint
4. adhesion primer
5. double-sided adhesive strip
6. glue

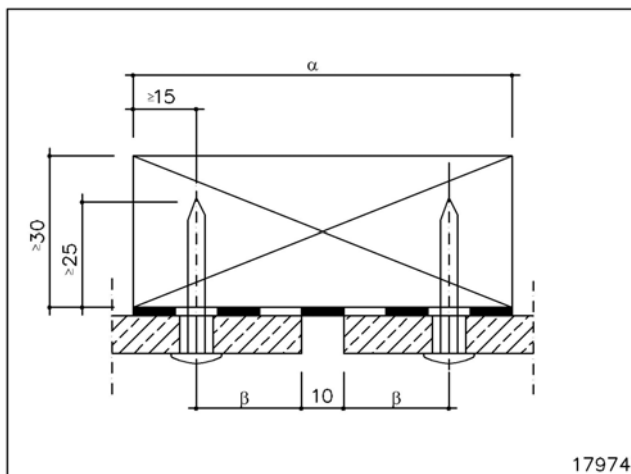
6.3. Visible fixing with screws for façade panels

6.3.1. Fixing method

The cladding panel is fixed by means of a stainless steel (quality A2, AISI 304) panel screw with coloured T20 TORX head to the wooden supporting laths.

The screws are inserted using an electric drill with a high quality bit suitable for the type of screw head. The screws must be inserted perpendicular to the panel surface, and may not be tightened to too firmly so that the free expansion of the panel is impeded. This is achieved by limiting the moment setting of the drill.

- minimum screw depth in supporting lath : 25 mm
- minimum distance from screw edge in supporting lath : 15 mm

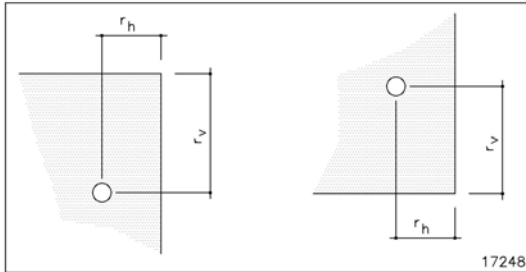


α	≥ 90
β	25

Façade panels for interior cladding on a wooden supporting structure

6.3.2. Edge distance

The following minimum and maximum distances from the edges must be respected. Drilling the holes can be done using a template.

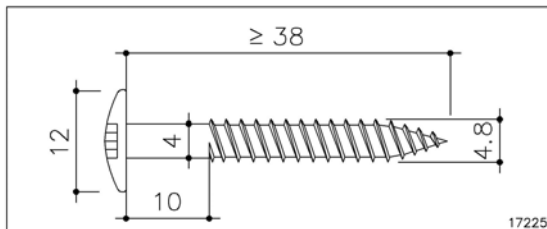


r_h	25-150
r_v	70-150

6.3.2. Types of screws

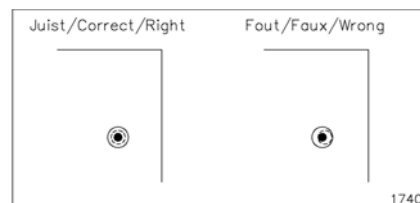
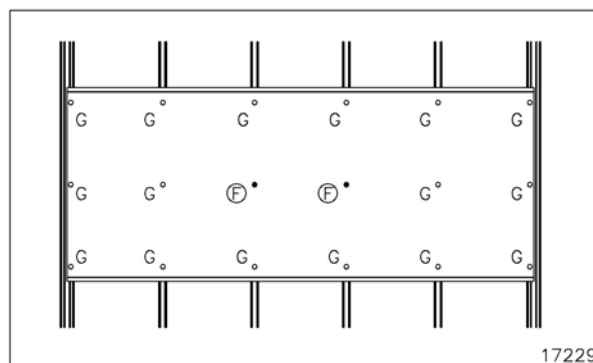
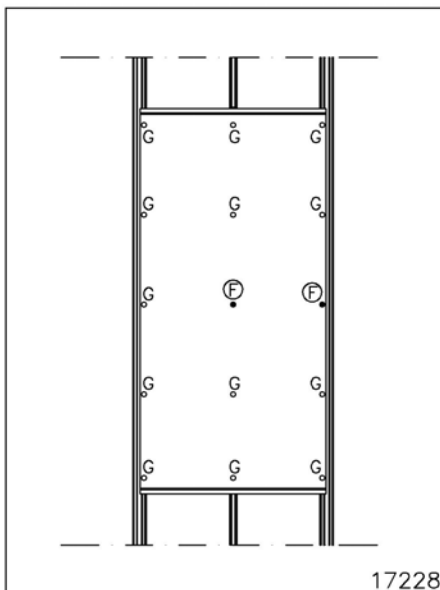
a. ETER-COLOR INTERIOR

The following design of the screw must be respected.



Holes for fixing points are pre-drilled in the panel. For each panel two fixed fastening points (F) located side by side are provided. All other pre-drilled holes are free fixing points to allow movements of the panel (G).

- diameter of fixed fastening point : 5 mm
- diameter of free fastening point : 8 mm

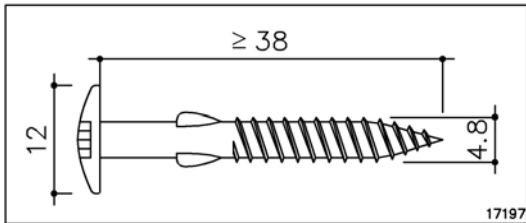


The screws must be applied in the centre of the pre-drilled holes.

Façade panels for interior cladding on a wooden supporting structure

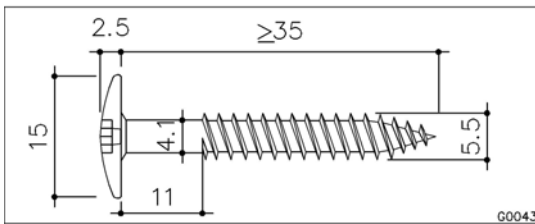
b. OPERAL

The following design of the screw must be respected. The screw is provided with a very sharp point and wings on the shaft so the pre-drilling of the sheet is not needed.



c. TEXTURA, NATURA

The following fixing instructions must be respected.

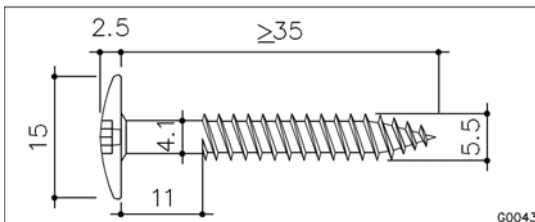


Holes for fixing points are pre-drilled in the sheet. Only pre-drilling with special fibre cement drills in hard metal.

- diameter fixing point: 6 mm

d. PICTURA, NATURA PRO

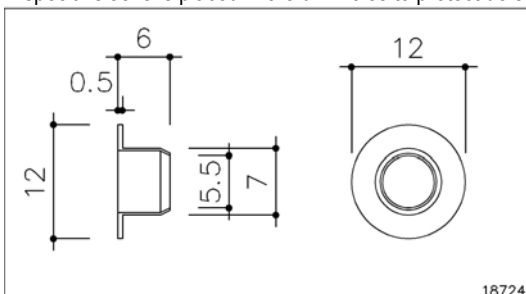
The following fixing instructions must be respected.



Holes for fixing points are pre-drilled in the sheet. Only pre-drilling with special fibre cement drills in hard metal.

- diameter fixing point: 7 mm

A special sleeve is placed in the drill holes to protect de surface of the PICTURA panel



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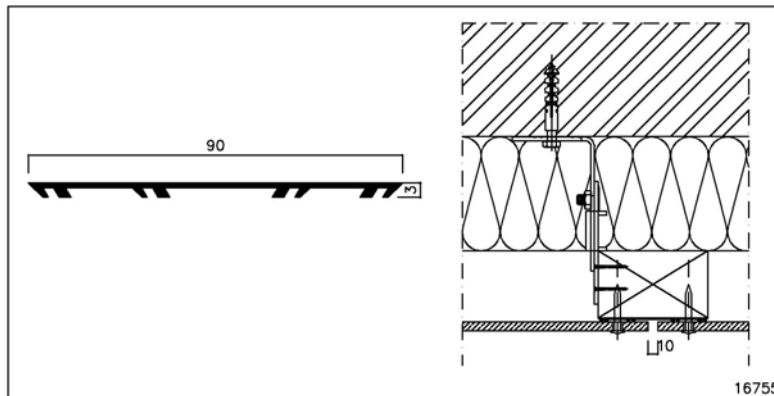
7 Joints

The façade panels are fixed with open joints to allow the free movement of the panel.

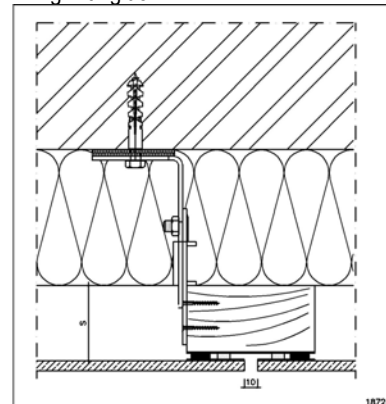
- joint width (horizontal/vertical) : 10 mm
- maximum thickness of underlying finishing profile : 0.8 mm

At the vertical joints, the supporting laths are covered with a UV-resistant EPDM joint profile provided with ridges. The joint sealing strip must always cover the wooden supporting lath over the complete width. An EPDM joint sealing strip is also applied on the centre support to obtain even spacing. One can also make use of a flat joint sealing strip in EPDM or black aluminium. The vertical joints can be finished with decorative covering sections in wood or aluminium.

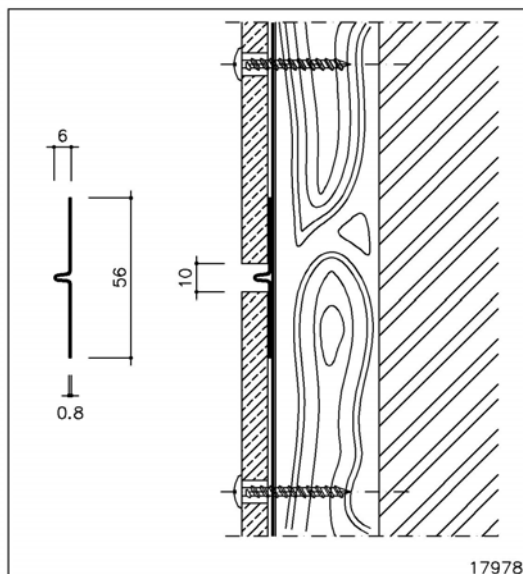
Fixing with screws



Fixing with glue



The horizontal joints can be finished with a black aluminium joint profile. This is particularly useful when the underlying insulation must be protected against the infiltration of rain. The part of the aluminium profile behind the panel may not be too thick to avoid tension. If this is the case, the wings of the profile must be wide enough for the fixing of the panel through the joint profile. The horizontal joint section is the same width as the panel so the vertical joint remains open. One can also make use of decorative horizontal joint sections. If necessary, the horizontal joints can be left open.



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8 Accessories³

The following accessories can be obtained from EURO PANELS OVERSEAS N.V..

Horizontal joint profile	Black coated aluminium	56 x 2500 mm
Outer corner profile	Black pvc	12 x 12 x 2500 mm
Outer corner profile	Anodised extruded aluminium	12 x 12 x 2500 mm
Outer corner profile	Black coated aluminium	15 x 15 x 2500 mm
Open outer corner profile	Black coated aluminium	17 x 17 x 2500 mm
Connection profile window	Black coated aluminium	8 x 15 x 45 x 3000 mm
Single sided adhesive foam strip	PVC	6 x 9 mm x 15 mm
Joint profile with ridges for vertical joint	EPDM	90 x 1 mm
Joint profile with ridges for intermediate support	EPDM	45 x 1 mm
Flat joint profile	EPDM	100 x 0,75 mm
Screw for Eter-Color Interior	Coated stainless steel	4,8 x 38 K 12 mm
Screw for Operal	Coated stainless steel	4,8 x 38 K 12 mm
Screw for Textura	Coated stainless steel	5,5 x 35 K15 mm
Screw for Natura	Coated stainless steel	5,5 x 35 K15 mm
Screw for Pictura	Coated stainless steel	5,5 x 35 K15 mm
Screw for Natura Pro	Coated stainless steel	5,5 x 35 K15 mm
Sleeve for Pictura/Natura Pro	Stainless steel	Ø 7 – 12 mm

9 Other construction details

Movements in the metal sections (corner section, bottom section, etc.) must always be detached from the panels. If necessary the aluminium sections must be pre-drilled, and are fixed according to the principle of fixed and free fastening points. Joints between the metal sections must coincide with joints between the panels.

Finishing sections in metals that can leach (such as zinc, copper, lead, etc.) are advised against because of possible soiling.

The following construction details can be found on the EURO PANELS OVERSEAS N.V. website.

OUTER CORNER: Corner finishing can be provided by means of a joint sealing strip or a finishing profile of aluminium or PVC.

INNER CORNER: A joint sealing strip or finishing profile in aluminium or PVC can also be used here.

EXPANSION JOINT: The expansion joints in the building must also be included in the cladding. They are obtained by placing an aluminium profile on both sides of the joint.

³ Use Euro Panels Overseas N.V. accessories; not using standard Euro Panels Overseas N.V. accessories may lead to cancellation of the Euro Panels Overseas N.V. guarantee.

Façade panels for interior cladding on a wooden supporting structure

10 Information on external suppliers

The following manufacturers of glue dispose of specific gluing advices and warranty declarations.

Bostik	www.bostik.com
Innotec	www.innotec-world.com
SIKA	www.sika.com
Soudal	www.soudal.com
Tweha	www.tweha.nl

11 Health and safety aspects

During the mechanical machining of panels, dust can be released which can irritate the airways and eyes. Apart from this, the inhalation of fine (respirable size) quartz containing dust, particularly when in high concentrations or over prolonged periods of time can lead to lung disease and an increased risk of lung cancer. Depending on the working conditions, adequate machinery with dust extraction and/or ventilation should be foreseen. For more ample information, please check the Safety Data Sheet according to 91/155/EEC.

12 More information

Information about the various cladding panels can be found in the EURO PANELS OVERSEAS N.V. product information sheets. They can be found on the website or can be obtained on demand by phone. Information about external suppliers can also be downloaded from the website.

These application instructions replace any previous editions. EURO PANELS OVERSEAS N.V. reserves the right to amend these instructions without prior notice. Readers should always satisfy themselves that they are referring to the most recent version of this document. No part of this text can be changed without permission of EURO PANELS OVERSEAS N.V..

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