# Ventilated façade

## 1 General

These application instructions are specifically intended for the fastening with adhesive of EURO PANELS OVERSEAS façade panels as façade cladding on a ventilated and insulated structure in aluminium, fixed to a back construction. A number of basic principles are given that must be adhered to. For variations or additional advice one can always contact EURO PANELS OVERSEAS .

## 2 Cladding material

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

- EQUITONE [tectiva] 8 mm

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

Only rectified boards may be used, non-rectified boards should not be used uncut.

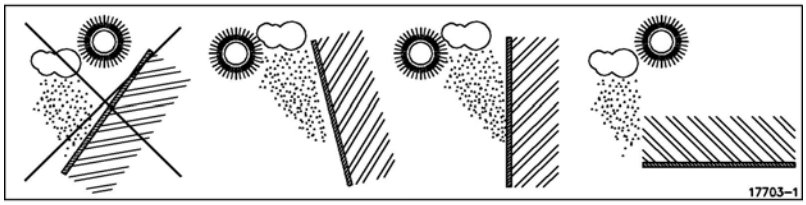
## 3 Area of application

These instructions apply for buildings up to a certain height and subjected to a maximum actual wind load in a certain wind zone. The maximum intermediate distance of the supporting structure is determined in relation to the occurring wind load taking into account a safety factor. The table below only shows non-binding reference values for the wind loads. The exact values can be found in the standards EN 1991-1-4 (Eurocode 1) and the national NAD.

| Location | Building height | Middle area façade | | Edge area façade and single span | |
|---|---|---|---|---|---|
| | | Max. actual wind load | Max. center-to-center distance supporting laths | Max. actual wind load | Max. center-to-center distance supporting laths |
| Wind zone | m | N/m² | mm | N/m² | mm |
| Land | 0-10 | 650 | 600 | 1000 | 500 |
| Land | 10-20 | 800 | 600 | 1200 | 500 |
| Land<br>Coast | 20-50<br>0-20 | 1000 | 500 | 1500 | 400 |

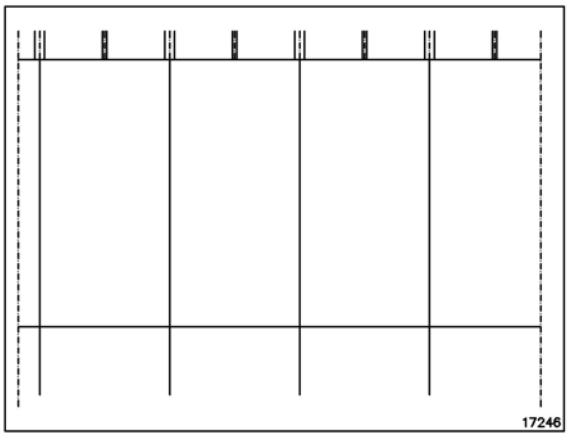
The width of the edge area amounts to at least 1 m from the corner of the building and must be further determined on the basis of prevailing national standards and conditions. If variations of the aforementioned load limits occur (e.g. due to certain location or form factors, etc.), the design must be determined by building services engineers.

When the façade panels are exposed to weather conditions (rain, sun) they may only be assembled on a vertical or leaned over supporting structure. For ceiling applications reference is made to the relevant application guidelines.

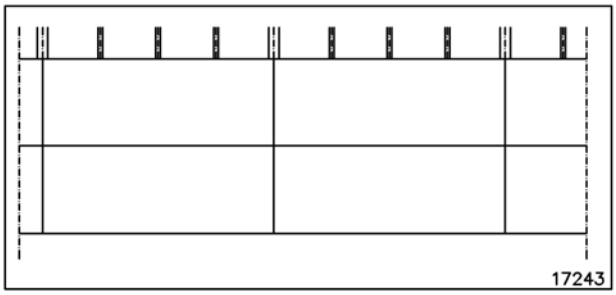


## 4 Patterns with large-size façade panels

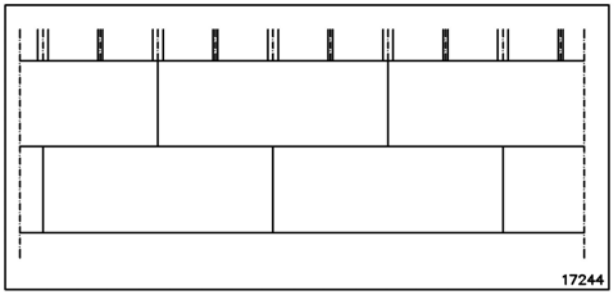
The following patterns with large-size façade panels are possible. For aesthetic reasons, use rectified (= cut rectangularly) façade panels only.



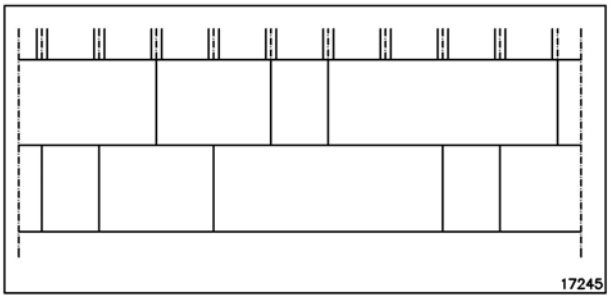

Straight pattern
with vertical panels




Straight pattern
with horizontal panels




Semi pattern
with horizontal panels




Free pattern
with horizontal panels

NOTE: semi pattern and free pattern are only advised for dark colours. With bright colours, there is a real risk of remarkable soiling on the panels in line with the overlying vertical joints.

## 5 Supporting structure

The guidelines for the construction of a ventilated aluminium structure can be found in the applicable instructions " D005-aluminium supporting structure_ai_eng.pdf".

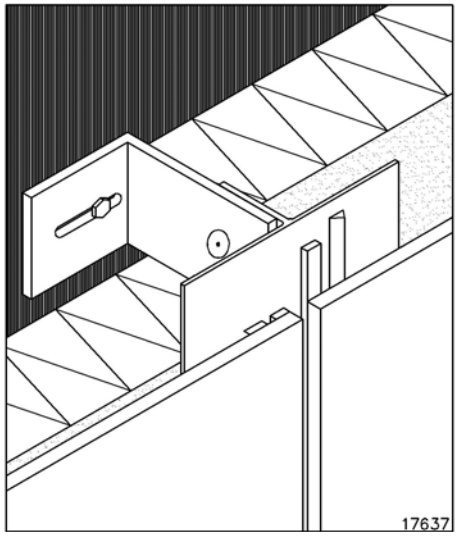
The dimensions of the supporting profiles (dimensions and width) and the different fastening variants are fully explained in the above mentioned application guideline.

## 6 Fixing method

The assembly of EURO PANELS OVERSEAS cladding panels is best started at the top. The panels are fitted by using a metal lath with leveler which is clamped on the supporting laths. By assembling from top to bottom, damaging the panel is avoided. Calibrating 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. The calibrating plates have to be removed carefully, so that the sheet edges are not damaged.

### 6.1. Invisible fixing through bonding[1]

*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 façade panels.

| | TECTIVA |
|---|---|
| Bostik | ● |
| Innotec | |
| Sika | |
| Soudal | |

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 material.
- The above mentioned list is regularly subject to changes. Always consult the manufacturer of the glue to be informed on the latest updates.

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

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 aluminium sections must be degreased and undergo preliminary treatment with a primer..
- 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 aluminium profiles.

⚠ A double-sided adhesive strip should be applied to each supporting lath. At panel joints the double-sided adhesive strip is placed at the side of the joint in order to avoid that the excess of glue is pushed to the outside.

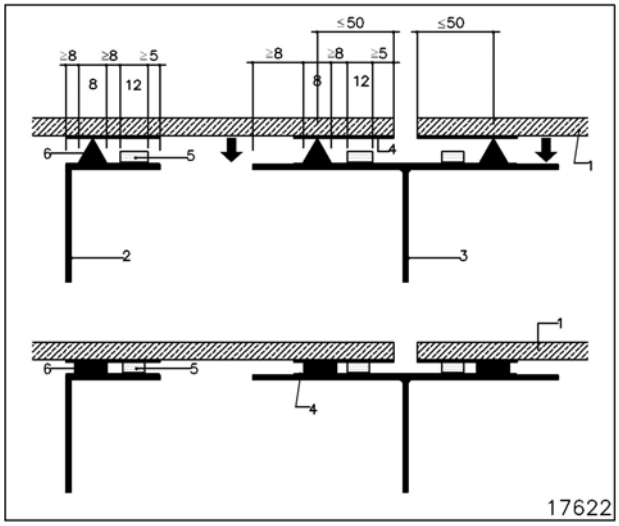
The correct quantity glue must be applied. The application of the façade panel requires the necessary precision.

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

## 6.2. Edge distance

The following maximum edge distance must be respected.

- Maximum edge distance of the adhesive : 50 mm




1. façade panel
2. alu profile without joint
3. alu profile with joint
4. adhesion primer
5. double-sided adhesive strip
6. adhesive

## 6.3. Maximum distance between the fixing accessories

The centre-to-centre distance between the fixing accessories is determined by:
- the width of the panel
- the maximum centre-to-centre distance between the vertical supporting structure (see § 3 page 1)
- the maximum distance between the fastening accessories in relation to the actual wind load
- the distances from the edge of fixing accessories (see § 6.2)
- the joint opening

As a general rule the following maximum distances between the fixing accessories must be respected.

| Actual wind load | Maximum center-to-center distance for the fixing accessories |
|---|---|
| N/m² | mm |
| ≤ 800 | 600 |
| ≤ 1200 | 500 |
| ≤ 1500 | 400 |
| > 1500 | 300 |

For single spans the following maximum distances between the fixing accessories must be respected.

| | Maximale centre distance of fasteners | |
|---|---|---|
| | mm | |
| | Land 0-20 m | Land 20-50 m<br>Coast 0-20 m |
| Single span | 500 | 400 |

Example (fixing with glue):
width of panel = 1220 mm, maximum distance between adhesive beads = 600 mm, edge distance adhesive bead = 50 mm, joint opening = 10 mm

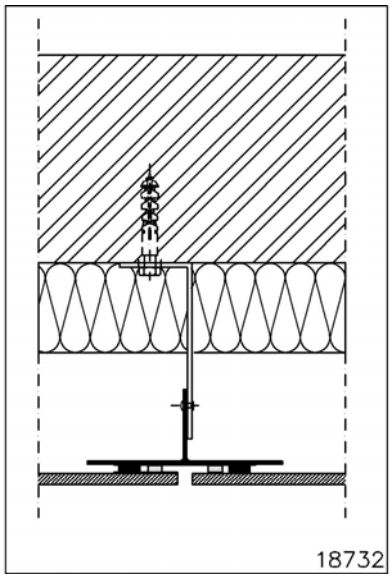
→→→centre to centre distance between supporting profiles = (1220+10)/2 = 615 mm
→→→ distance between the adhesive beads = (1220-2*50)/2 = 560 mm ≤ 600 mm

## 7 Joints

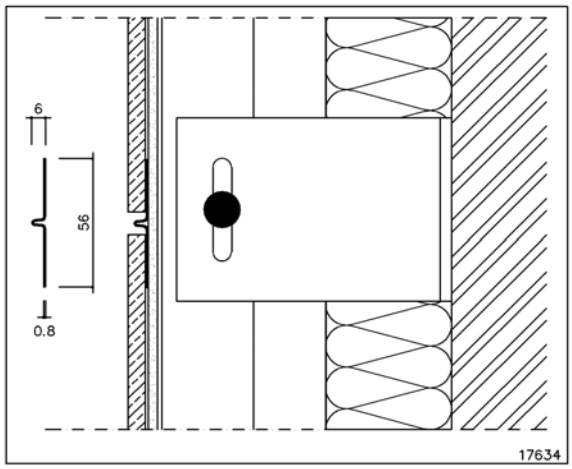
The façade panels are fixed with open joints to allow the free movement of the panel.

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

The vertical joints can be treated with the black adhesion primer of the gluing system or with a black self adhesive UV resistant tape. This tape can only be applied in the middle of the profile between the two double-sided adhesive strips. The vertical joints can be finished with decorative covering sections in wood or aluminium.




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.



## 8 Accessories[1]

The following accessories can be obtained from EURO PANELS OVERSEAS .

| | | |
|---|---|---|
| Horizontal joint profile | Black coated aluminium | 56 x 2500 mm |
| Perforated sealing profile | Blank aluminium | 50 x 30 x 2500 mm |
| Perforated sealing profile | Blank aluminium | 70 x 30 x 2500 mm |
| Perforated sealing profile | Blank aluminium | 100 x 30 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 rm |

## 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.*

*Metal finishing profiles (aluminium, zinc, steel ...) must be sufficiently thick protected or treated (coated, treatment, galvanized, ...) to avoid discoloration / deterioration due to bleeding alkaline rainwater from the fibre-cement sheets.*

The following detail drawings are available at the EURO PANELS OVERSEAS website:

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

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

TOP FINISHING: Sufficient ventilation openings must be provided.

BOTTOM FINISHING: The open cavity between the back of the panel and the insulation or the back construction must be sealed at the bottom by a perforated aluminium sealing profile. This profile prevents the entry of birds and vermin. The raised leg of the sealing profile is clamped between the aluminium supporting profile and the panel and is not thicker than 0,8 mm.

WINDOW FINISHING WITH RETURN: Sufficient ventilation openings must be provided at the top and bottom of the window. The corner can be finished by means of a finishing profile in aluminium or PVC or special corner pieces.

WINDOW FINISHING WITHOUT RETURN: Sufficient ventilation openings must be provided at the top and bottom of the window. The corner can be finished by means of a finishing profile in aluminium or PVC.

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.

[1] Use Euro Panels Overseas accessories; not using standard Euro Panels Overseas accessories may lead to cancellation of the Euro Panels Overseas guarantee.

## 10 Information on external suppliers

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

| | |
|---|---|
| Bostik | www.bostik.com |

## 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 based on 1907/2006/EC, article 31.

## 12 More information

Information about the various cladding panels can be found in the EURO PANELS OVERSEAS 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 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 .

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