ASSEMBLY INSTRUCTIONS

FACADE PROFILES

90 RHOMBA, 90 RHOMBUS

TERAFEST by WOODPLASTIC

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BEFORE YOU BEGIN

Fire Applications and Classification

- The **90 RHOMBA** and **90 RHOMBUS profiles** are suitable for the facades of single-family houses.
- Classification: **Class E** according to reaction to fire.
- For taller buildings, **consultation with a fire specialist** and installation according to **fire safety design** is necessary.

Design constraints

- **TERAFEST®** is not a load bearing material.
- Accessories (lighting, downpipes, etc.) **Do not anchor to the profiles**, but to the joisting structure.
- Lighter elements can be fixed in **the aluminium reinforcement of** the 90 RHOMBA profile.
- **Do not insert electrical cables** into profiles.

Appearance and colour

- Slight colour variations are natural and accentuate the **appearance of the wood**.
- Before installation**, check and mix the profiles** so that the façade looks uniform.
- We recommend ordering **material for the entire façade at once**.

Dimensions and expansion joints

- Manufacturing tolerance: width **± 2mm, thickness ± 1mm, length ± 10mm**.
- Max. deflection: **5 mm/m**.
- The profiles expand thermally – **keep the dilating gaps**.

Use and storage

- Designed for **outdoor use**.
- Uneven rain can create **dust spots** that do not affect functionality.
- Store **in a dry, flat and shady place**, protect from the sun.

Surface, tools and safety

- **Do not treat** with stains, varnishes, oils or solvents.
- Use common hardwood tools – **saw, drill, screwdriver, tape measure, angle**.
- With the **90 RHOMBA profile with aluminum reinforcement**, there is a risk of loosening.
- Always wear **protective equipment**, especially **goggles**, when working.

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WALL PREPARATION

Wall load capacity

- The wall must be able to withstand a load **of 16–21 kg/m²**.
- Ordinary masonry wall is sufficient.
- For insulation over **20 cm,** we recommend consulting a designer or structural engineer.

Anchoring to ETICS (insulation)

- The joists are anchored **through the insulation to the joisting structure**.
- It is necessary **to drill the entire insulation** up to the masonry.
- Anchors disrupt thermal resistance – we recommend using **dowels with thermal bridge breaks**.
- For a better look, we recommend **painting the wall black or anthracite** color.

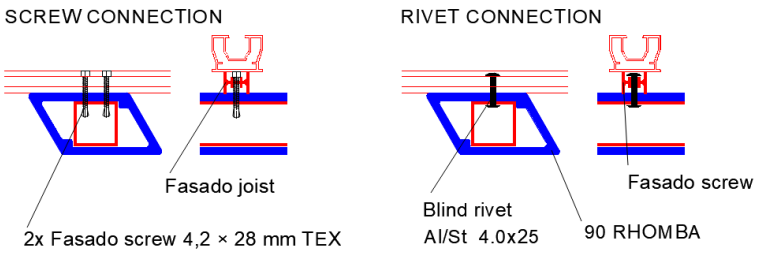
Wooden buildings

- The joists can be anchored directly into **the wooden wall structure**.
- For the batten spacing **of 625 mm**, there is **a sample static calculation** (see Table 1).
- For other spacings, the calculation needs to be adjusted.
- We recommend using a **black diffusion foil** with UV stabilization behind the joists – for both the appearance and protection of the insulation.

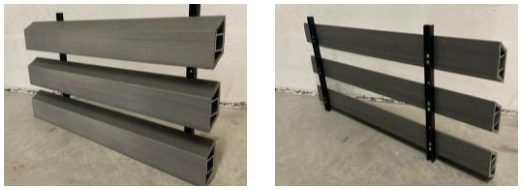
CHOICE OF ANCHORING METHOD - HIDDEN OR ADMITTED

- **90 RHOMBA** profiles have aluminum reinforcement in them and can be anchored "hidden" without visible screws.
  - Hidden mounting is carried out via the Fasado connector with blind rivets or screws from the back.
- **90 RHOMBUS** profiles do not have reinforcement and therefore only screw-through mounting is possible

Hidden mounting from back (90 RHOMBA)

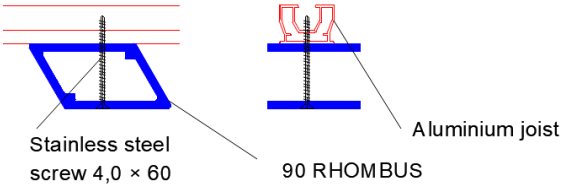


Hidden mounting of RHOMBA profiles with Fasado connectors



Exposed screw-through mounting (90 RHOMBUS)

(Visible screw heads)



Exposed screw heads on RHOMBUS profiles

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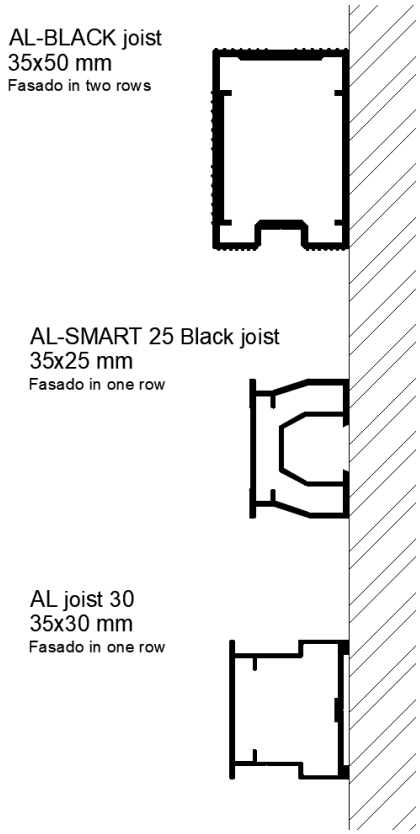
1. INSTALLATION OF FAÇADE JOISTS

- The installation of **the 90 STAR and 45 MINISTAR profiles** is carried out on the façade joist.
- Recommended aluminium joists are black, but standard silver ones can be also used:
  - **AL-SMART 25 Black** (35×25 mm)
  - **AL-BLACK** (35×50 mm)
  - or **AL joist 30** (35×30) treated **with black spraying**.



Orientation during assembly

- **AL-BLACK** – flat mounting, **groove down**.
- **AL-SMART 25 Black** – **groove to wall** mounting.
- **AL joist 30** – recesses for the wall clip oriented **to the wall**.

Joist spacing

- **90 RHOMBA** → 1000-1500 mm (**max. 1500 mm**)
- **90 RHOMBUS** → 600-800 mm (**max. 800 mm**)

Mounting of joists

- The joists must **be pre-drilled according to the type of dowel**.
- Anchor according to **the static calculation** or according to the sample calculation
  - **FISCHER UX10 + M8 screw** (masonry)
  - **HBS 5×70 mm** (wood).

Limitations and recommendations

- The maximum overhang of the aluminium joist is **250 mm.**
- **For the corners of buildings**, reduce the anchor spacing by **half** in a strip of about **1-1.5 m**.
- **The first anchor** must be max. **250 mm from the end of** the profile.
- **Do not anchor to the waterproofing membrane**. When needed, joist might start up to **30 cm above the ground**.

Insect protection

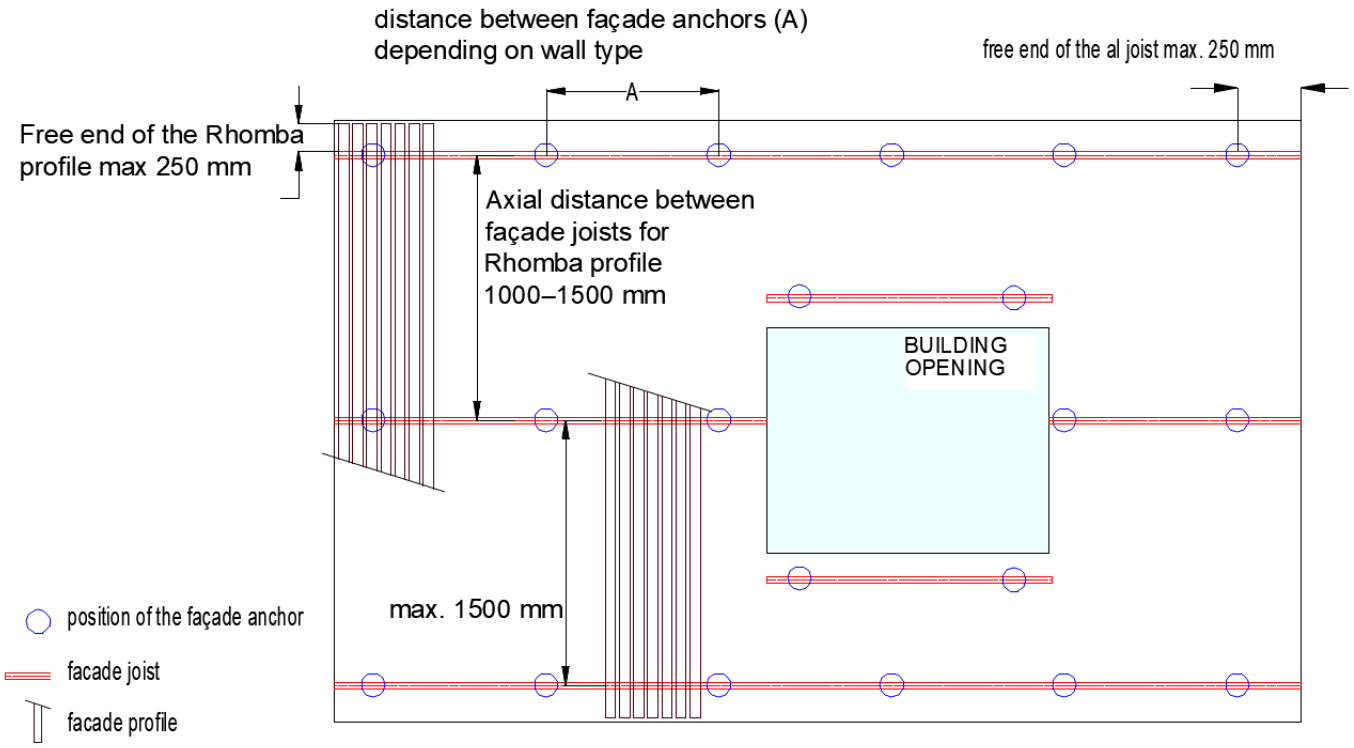
- A UV-stable insect screen **can be attached to the joists**
  - recommended mesh **1.2 × 1.4 mm**.

Table 1 Distances between façade dowels (A) by wall type

	Category 1	**Category 2**	**Category 3**	**Category 4**
	Concrete	Full burnt bricks	Ceramic blocks, aerated concrete	Wooden buildings
				
Distance (A) for **90 RHOMBA** (max. 1500 mm)	A = 350 mm	A = 200	A = 200 mm	A = 200 mm
Distance (A) for **90 RHOMBUS** (max. 800 mm)	A = 600 mm	A = 300	A = 240 mm	A = 240 mm

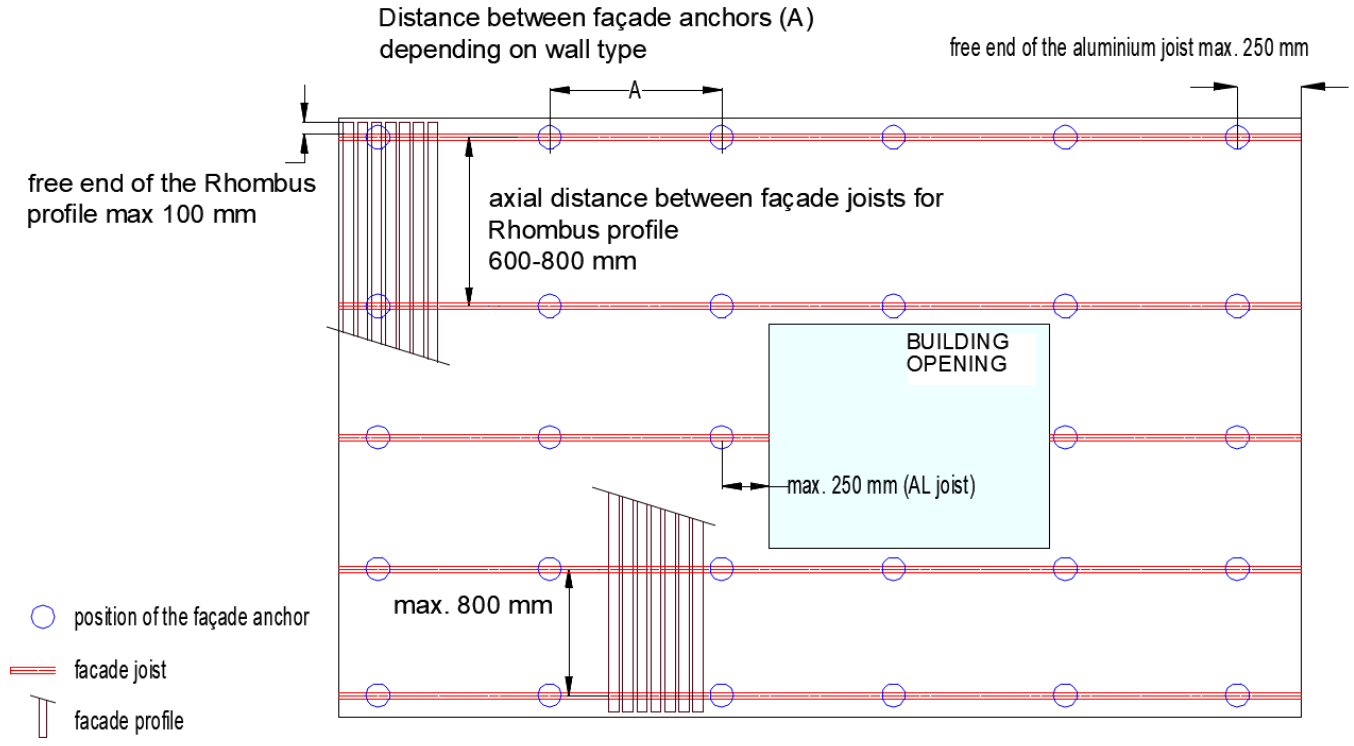
Mounting of façade joists for **90 RHOMBA** profile – vertical installation

View of the wall

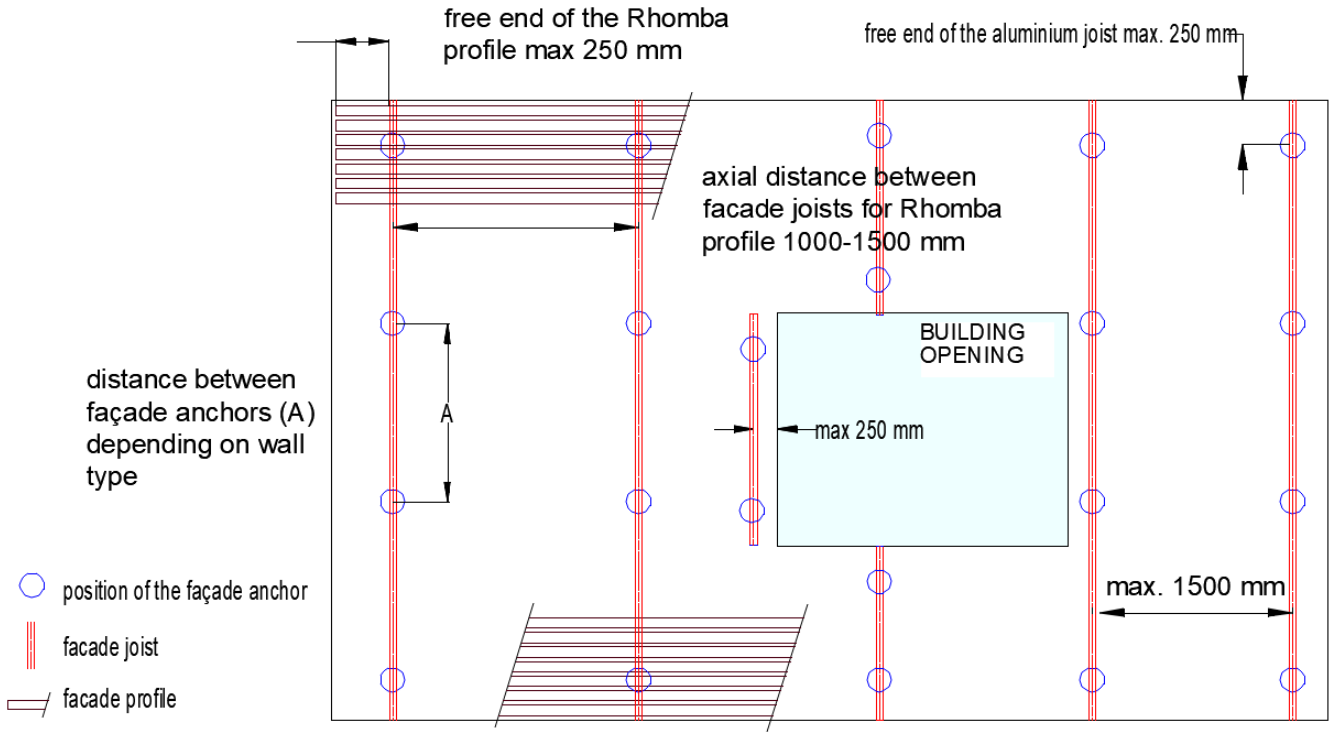


Mounting of façade joists for **90 RHOMBUS** profile – vertical installation

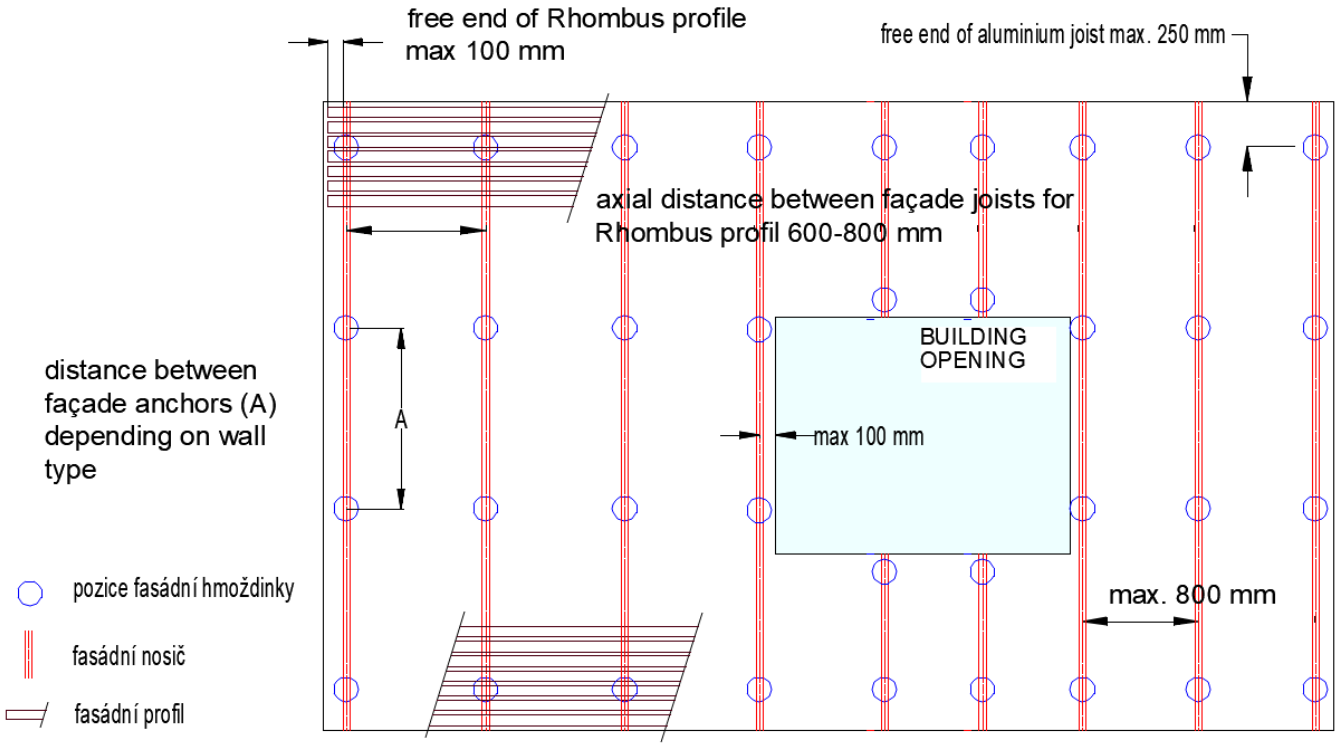
View of the wall



Mounting of façade joists for 90 RHOMBA profile – horizontal installation
View of the wall



Mounting of façade joists for 90 RHOMBUS profile – horizontal installation
View of the wall



2.A HIDDEN INSTALLATION OF 90 RHOMBA PROFILE VIA FASADO CONNECTOR – FIELD PREPARATION

Work Area

- It is recommended to define the work area with a protective mat that safeguards both the floor and the RHOMBA profiles from scratches.
- The mat should be longer than the profiles to allow comfortable drilling and handling of the material.
- Cardboard sheets or foam pads are ideal for this purpose.

Profile Layout

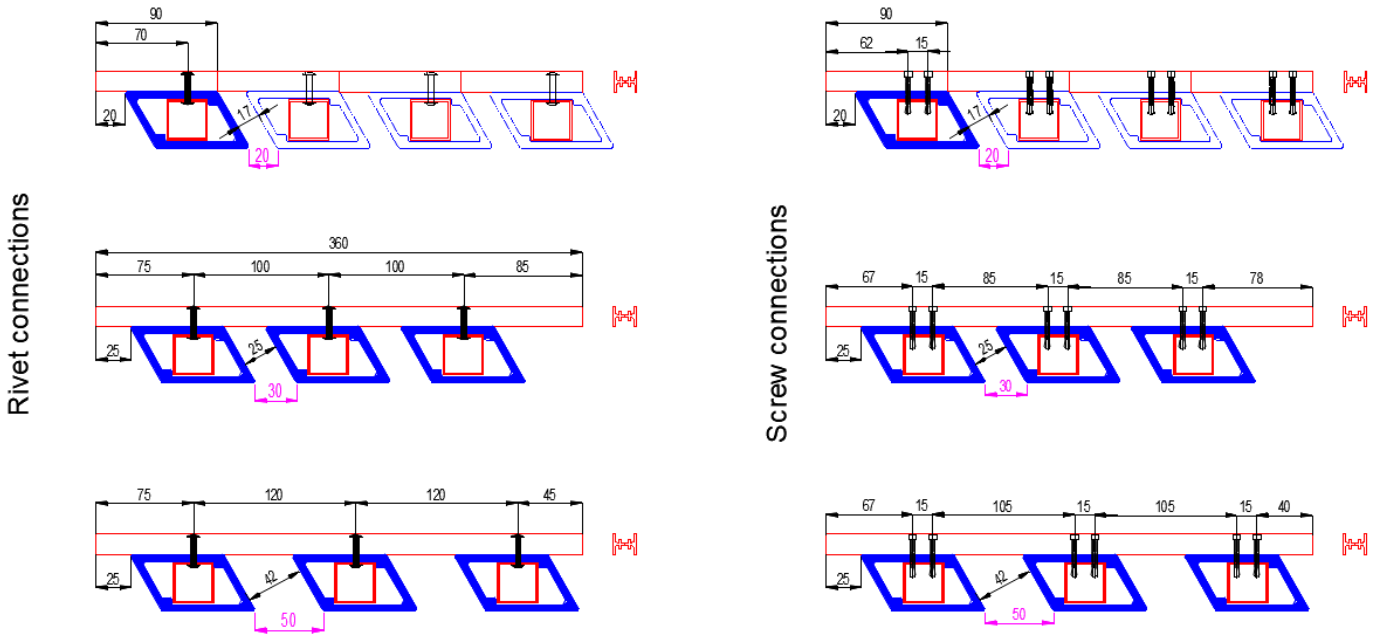
- Lay the profiles on the mat in the required spacing and orientation.
- For precise alignment, we recommend using a spacing template to ensure uniform gaps between profiles.

Pre-drilling of Holes

- When riveting into the Fasado joist, drill through the first wall of the reinforcement using a Ø 4.5 mm drill bit.
- For screw mounting, a Ø 3 mm drill bit is sufficient.
- Pre-drilling ensures accurate placement and prevents material deformation.

Alternative Installation

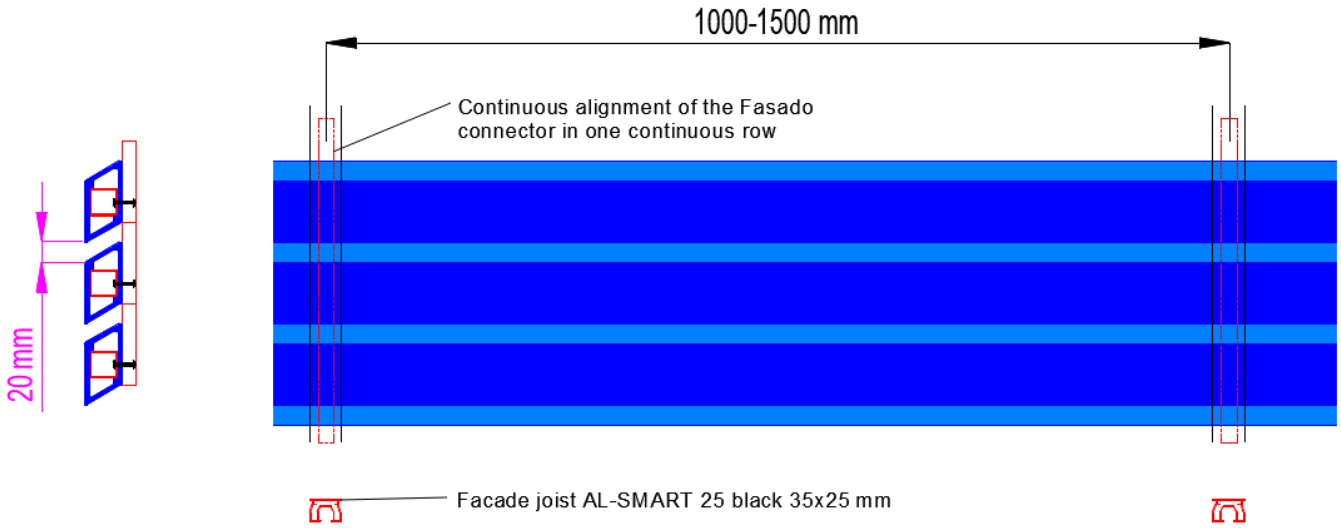
- RHOMBA profiles can also be installed individually onto shortened Fasado joists (90 mm).
- This method is used when there is a 20 mm gap between profiles or when higher installation precision is required.



MOUNTING OF PREPARED FIELDS

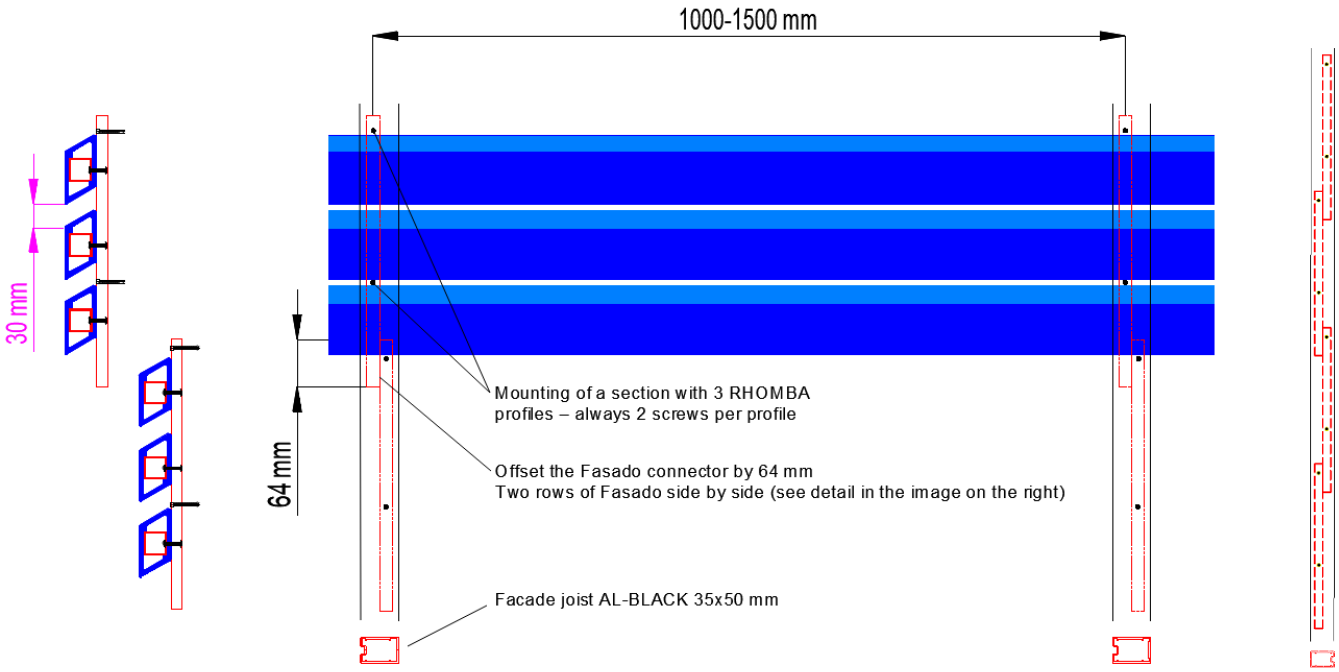
➤ **20mm gap**

- The RHOMBA single-profile array is anchored to **the AL-SMART 25 Black** with **1 – 2 screws**.
- If a single screw **is used**, it is necessary to **alternately change the position of the screw (once closer, once further away from the profile) in** the vertical orientation to prevent the **joist from "swinging" downwards**.



➤ **Gap 30 mm**

- **The façade joists** are arranged **in two lines alternately**, **equally for vertical and horizontal installation**.



➤50mm gap

- The principle is the same as for the 30 mm gap – alternating placement in two lines.
- Mounting is done into the joists:
  - **AL-SMART 25 Black** (with the hole facing the wall)
  - or **AL-BLACK** (mounted flat).
- The **FASADO screw is used 4.8 × 34 mm TEX Black**, recommended **pre-drilling Ø 3.5 mm**.

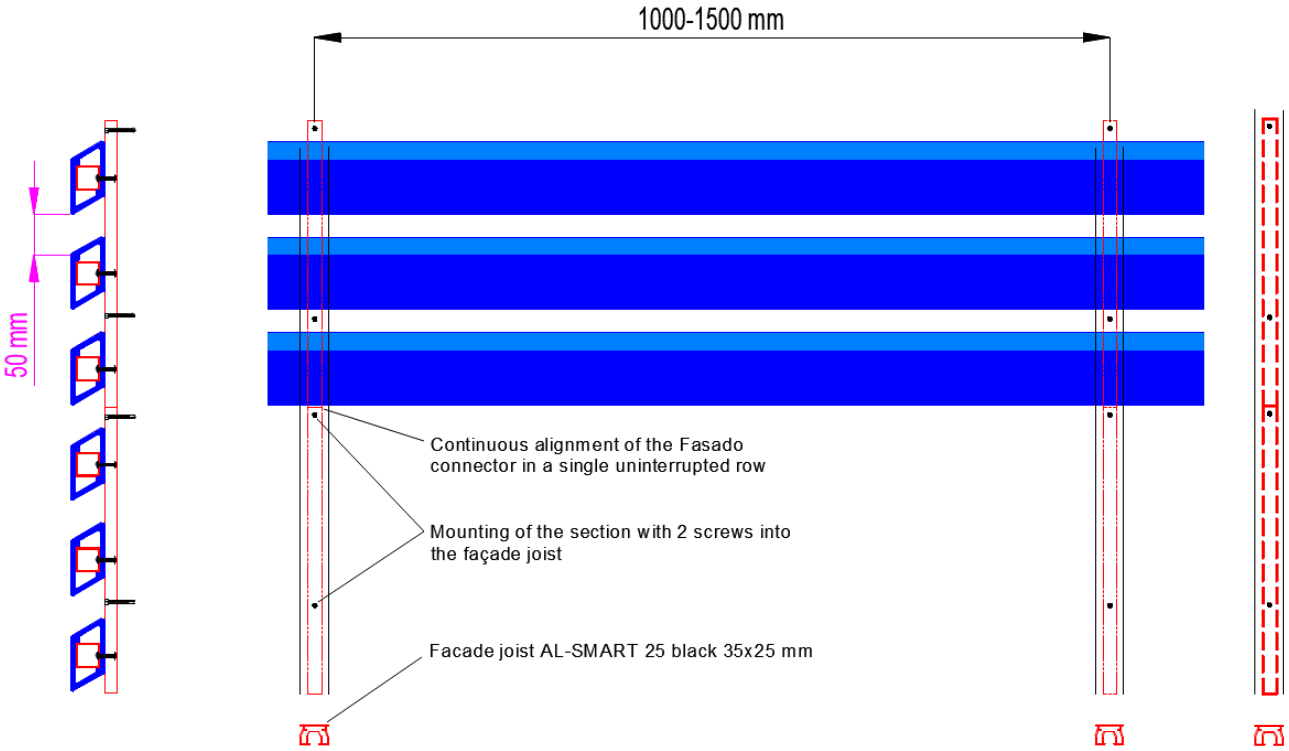
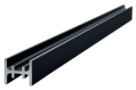
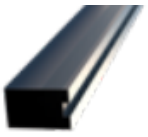


Table 2 Estimated material consumption for hidden installation using Fasado connector (⌀span 1300 mm), smaller wall 5.2 m x 3.2 m with one opening

Gap		20 mm	30 mm	50 mm
Number of linear meters of façade profiles 90 RHOMBA per m2	 90 RHOMBA	11.1 bm	10 bm	8.3 bm
Option 1 – screw connection Type and quantity of screws per m² for hidden rear installation	 FASADO screw 4,2 × 28 mm TEX	24.4 pcs	22 pcs	18.2 pcs
Option 2 – Riveted connection Type and quantity of rivets per m² for hidden rear installation	 Blind Rivet Al/St 4.0x25	12.2 pcs	11 pcs	9.1 pcs
Fasado connector and its consumption per m2	 FASADO connector 17 × 15 × 360 mm	3.1 pcs (11.1 segments of 90 mm)	3.7 pcs	3.1 pcs
Alignment of individual Fasado connectors in sequence		Seamless continuity	Local overlay 64 mm	Seamless continuity
Screws for mounting of Facado connectors to aluminium façade joists	 FASADO screw 4.8 × 34 mm TEX Black	12.2 pcs	7.4 pcs	6.2 pcs
Recommended façade aluminium joist		 Basic joist **AL-SMART 25 Black** (35x25 mm), or **AL joist 30** (35x30 mm)	 Extended joist **AL-BLACK joist** (35x50 mm)	 Basic joist **AL-SMART 25 Black** (35x25 mm), or **AL joist 30** (35x30 mm)
Consumption of façade joists		1.1 bm	1.1 bm	1.1 bm

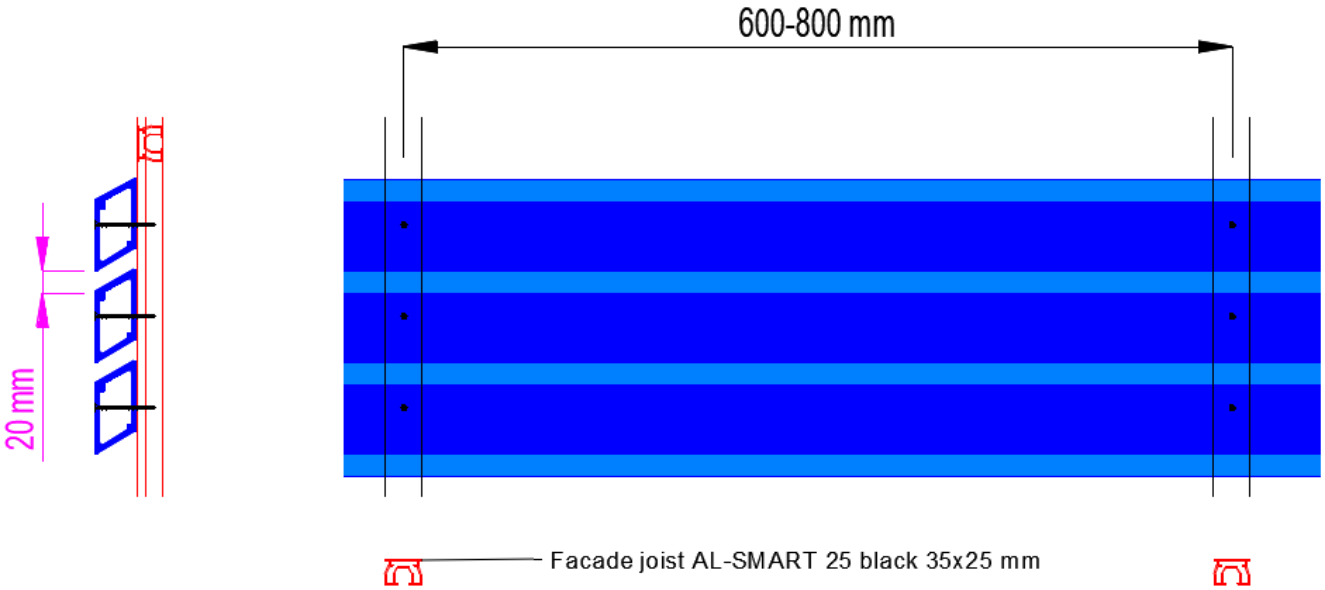
2.B DIRECT INSTALLATION OF 90 RHOMBUS PROFILE WITH LONG SCREW THROUGH

This method of assembly **is faster**. The disadvantage, however, is **the visible screw head** on the RHOMBUS profile.

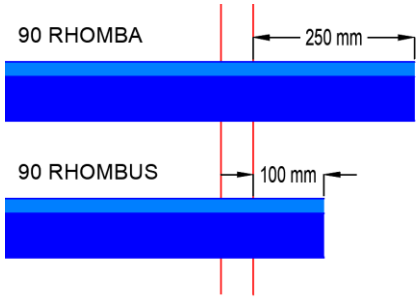
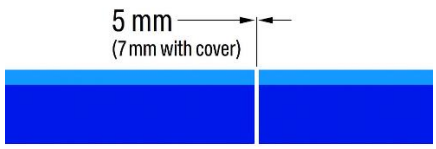
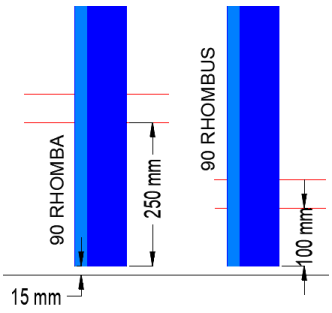
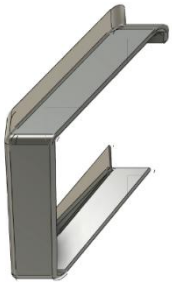
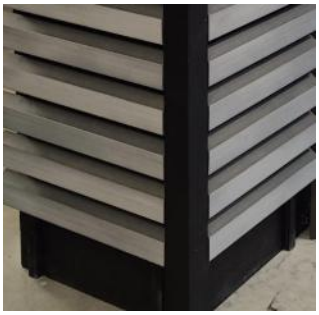
Table 2 Assembly elements with RHOMBUS profiles (⌀span 700 mm), smaller wall 5.2 m x 3.2 m with one opening

Gap		20 mm	30 mm	50 mm
Number of linear meters of façade profiles 90 RHOMBUS per m2	 90 RHOMBUS	11.1 bm	10 bm	8.3 bm
Type and number of screws for direct anchoring to the façade joist	 Stainless Steel Screw 4.0 × 60 A4	18.9 pcs	17 pcs	14.1 pcs
Recommended façade aluminium joist	 **AL-SMART 25 Black** (35x25 mm), or **AL joist 30** (35x30 mm)	1.7 bm	1.7 bm	1.7 bm

Screw anchoring through, directly into the façade beam (variant with a gap between RHOMBUS profiles 20 mm)



3. DETAILS OF JOINTS AND ENDINGS

Termination of RHOMBA/RHOMBUS profiles Maximum free end length 250 mm, finished with end cap	End caps are available in right/left versions	Detail of End Caps
		
Joining of RHOMBA profiles Gap between profiles minimum 5 mm With 7 mm connecting cover	Connecting covers are attached by **"hooking"** from the top and inserting the free end from the bottom of the RHOMBA profile	**Clear distance from the ground** minimum 15 mm
		
Outer corner - variant 1 Cut profiles at 45% angle, using Corner Caps	**Outer corner – variant 2** Profile cutting at an angle of 45%, L-rail 50x50 mm	**Outer corner – variant 3** RHOMBA profiles 5 mm from corner post 80x80 mm
		

The detail of RHOMBA profile termination around window or door reveals can also be executed using sheet metal flashing elements, which provide coverage and protection of structural edges while ensuring a smooth and aesthetically clean transition to the opening.

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