

# INSTALLATION MANUAL

FACADE PROFILES  
90 STAR, 45 MINISTAR

 **TERAFEST**  
by WOODPLASTIC



## BEFORE YOU START

### Use and fire classification

- Profiles 90 STAR and 45 MINISTAR are designed for façades of single- and multi-storey houses.
- They meet **Fire Reaction Class E** – for higher buildings consult a fire safety expert and follow the approved Fire Safety Design (FSD).

### Structural limitations

- **TERAFEST®** is non-load-bearing and cannot serve as a structural element.
- Accessories must not be fixed only into façade profiles.
- Not suitable for balcony infills – use certified systems with **90 RHOMBA** or **50 BONE** instead.

### Combining with other profiles

- Profiles **90 STAR** and **45 MINISTAR** can be freely mixed or combined with decking boards such as 137 CLASSIC for varied designs.

### Tolerance and expansion

- Manufacturing tolerances: width  $\pm 2$  mm, thickness  $\pm 1$  mm, length  $\pm 10$  mm.
- Max. longitudinal deflection **5 mm/m**.
- Always keep proper expansion gaps.

### Storage and handling

- Store profiles on a dry, flat surface, protected from moisture and sunlight.

### Recommended tools

- Use common woodworking tools: circular saw, drill, cordless screwdriver, tape measure, level, pencil, mallet and square.

## WALL PREPARATION

### Load-bearing capacity of the wall

- The supporting wall must be able to withstand a load of **17–26 kg/m<sup>2</sup>**.
- Standard perimeter masonry is sufficient.
- For insulation thicknesses exceeding **20 cm**, we recommend consultation with a **structural engineer** or **project designer**.

### Anchoring to ETICS (external thermal insulation system)

- The joists must be anchored through the insulation into the structural wall.
- It is necessary to drill through the entire insulation layer until reaching the masonry.
- Anchors reduce the thermal resistance – it is therefore recommended to use **anchors with a thermal bridge break**.
- For a better visual effect, it is advisable to **paint the wall black or anthracite** before installation.

### Timber constructions

- Joists can be fastened directly into the **timber frame structure** of the wall.
- For a **batten spacing of 625 mm**, a reference static calculation is available (see Table 1).
- For other spacings, the calculation must be adjusted accordingly.
- We recommend using a **black UV-stabilised diffusion membrane** behind the joists – both for aesthetics and for protecting the insulation.



## 1. INSTALLATION OF FAÇADE JOISTS

- The installation of the **90 STAR** and **45 MINISTER** profiles is carried out on the façade joist.
- Both aluminum and WPC joists **can be used**, depending on the desired appearance and system.
- Recommended types of joists (see Table 1)

Table 1 Recommended façade supports

	Grey/brown variant	Black variant
AL Joists	AL joist 30	AL-SMART joist 25 black
WPC Joists	WPC joist 30	50 MINIBONE Ebony

### Anchoring of façade girders

- **Pre-drill the joists** according to the type of dowel you choose.
- Fasten according to the static design or reference calculation:
  - **Masonry:** FISCHER UX10 + M8 screw
  - **Timber:** HBS 5 × 70 mm screw

### Maximum spacing between joists

- **45 MINISTER** → max. **600 mm**
- **90 STAR** → max. **750 mm**





### Limitations and recommendations

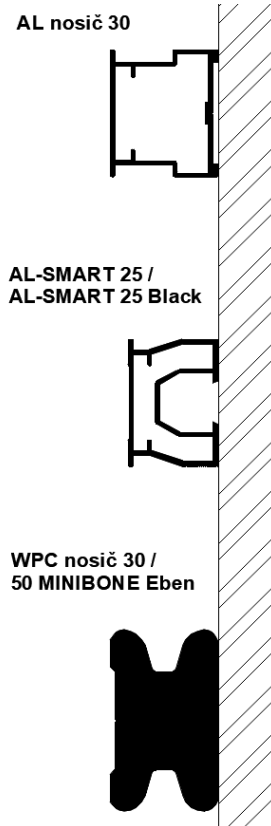
- **Maximum joist overhang:**– aluminium: **250 mm**  
– WPC: **100 mm** (up to **300 mm** at the bottom row)
- **For the corners of buildings**, reduce the anchor spacing by **half** in a strip of about **1-1.5 m**.
- **The first anchor** must be max. **250 mm from the end of** the profile.
- **Do not anchor to the waterproofing membrane.** Sometimes it is necessary to start the joists up to **30 cm above the ground**.

### Insect protection

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

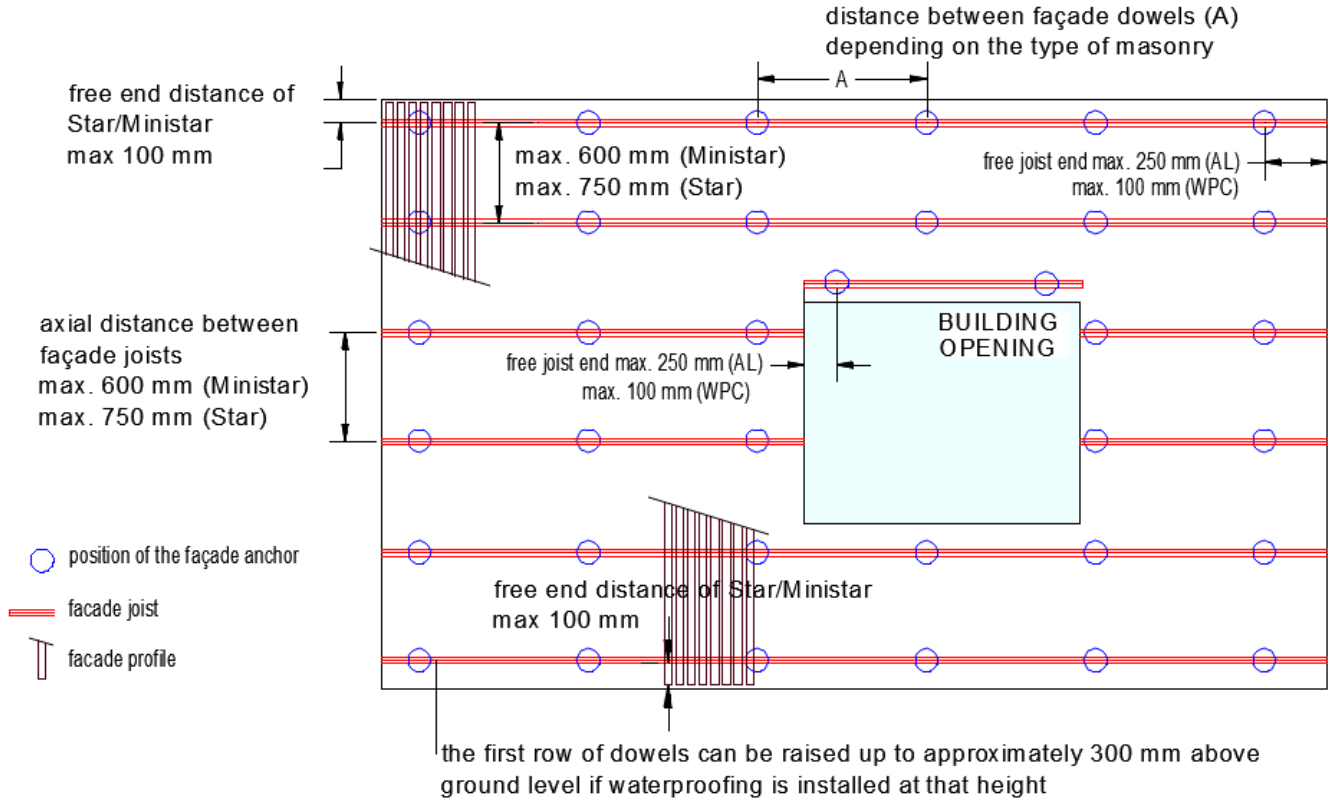
Table 2 Sample spacing between façade dowels (A) according to wall type

	Category 1	Category 2	Category 3	Category 4
	Concrete	Full burnt bricks	Ceramic blocks, aerated concrete	Timber structures
				
<b>45 MINISTER</b> (600 mm spacing)	<b>A = 90 cm (AL)</b> / 30 cm (WPC)	<b>A = 45 cm (AL)</b> / 30 cm (WPC)	<b>A = 35 cm (AL)</b> / 30 cm (WPC)	<b>A = 50 cm (AL)</b>
<b>90 STAR</b> (750 mm spacing)	<b>A = 70 cm (AL)</b> / 30 cm (WPC)	<b>A = 35 cm (AL)</b> / 30 cm (WPC)	<b>A = 25 cm (AL)</b> / 25 cm (WPC)	<b>A = 40 cm on aluminium</b>



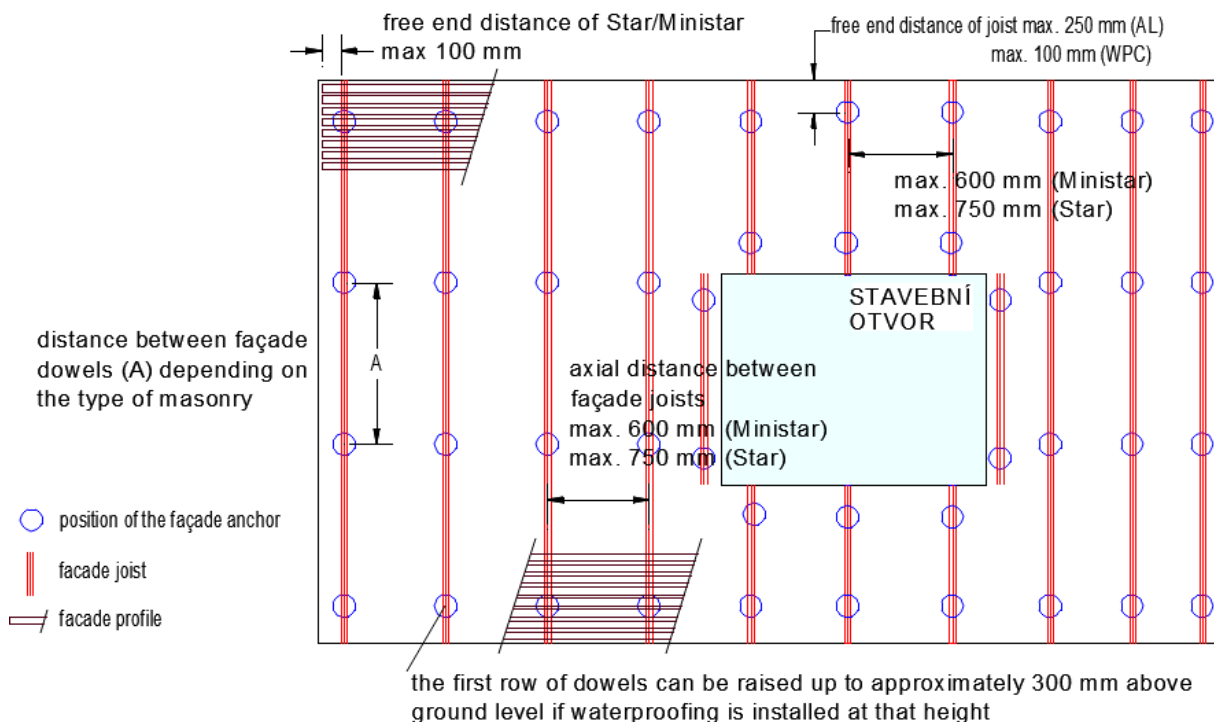
## Mounting of façade joists for 90 STAR and 45 MINISTER – vertical installation

View of the wall



## Mounting of façade joists for 90 STAR and 45 MINISTER – horizontal installation

View of the wall

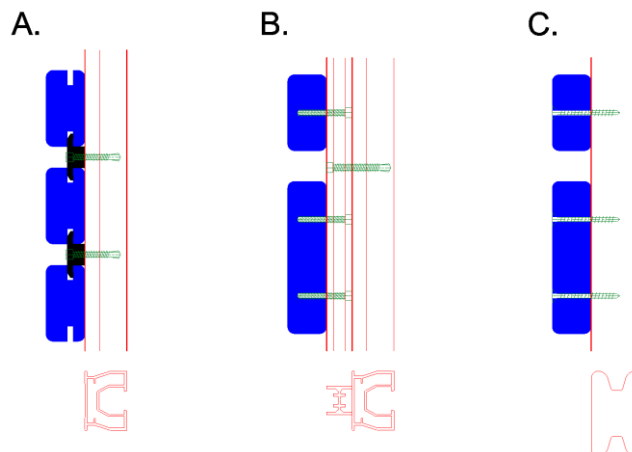


## 2. INSTALLATION OF FAÇADE PROFILES

- The 90 STAR and 45 MINISTER a façade profiles are available in two variants – with and without a groove.
- Both façade profiles can be combined with each other (e.g. 3x MINISTER + 1x STAR). However, it is always necessary to use an assembly of the same type – either grooved or solid profiles.

- **Mounting is possible in 3 ways**

- A. from the side using clips
- B. from the back through the Fasado joist
- C. from the front with screw-through mounting



### 2.A ASSEMBLY WITH CLIPS

- Clip mounting is only used **when the profiles are vertically oriented**.
- In the horizontal direction, water could remain in the top groove of the clip, which would increase the risk **of swelling of the material**.
- **Tables 3 and 4** list the recommended combinations of profiles and accessories.

#### Support with a leveling base board

- Place a **support board or beam** on the ground to define the height of the first row of façade profiles.
- The gap between the profile and the terrain must be **at least 15 mm** to prevent capillary water rise and water stains.

#### Fixing the START Clips

- The type of Start clip depends on the system you choose (see **Table 3 and 4**).
- AL-SMART clips are mounted **without pre-drilling the joists**.
- Other types of clips **require pre-drilling**:
  - **Aluminium joist** → drill bit **Ø 2.5 mm**
  - **WPC joist** → drill **Ø 2 mm**

#### Installation of façade profiles and Standard clips

- Standard clips **determine the gap** between each profile.
- **The pre-drilling** of the joists is the same as for the Start clips.
- The profiles are gradually inserted and fastened with clips across the entire surface.

#### Anti-slip securing

- Each profile must be **firmly drilled to the joist** at least in one place for **perfect stability** – usually at the bottom or top.
- Alternatively, a **hidden screw can be used on the side of the profile**.

Table 3 Extended assemblies of façade profiles, joists and clips with a gap of 6 mm





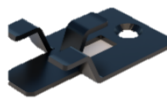




















Gap	6 mm (vertical mounting)			
Façade profiles				
Description	Basic variant for WPC joist	Basic variant for aluminum joist	Variant for faster mounting in an aluminium joist	Variant for the fastest mounting in an aluminium joist
STARTt Clips	 Clip Start A2 black		 AL-SMART Start Clip 7 mm	
STARTt Clip Screws	 Stainless Steel Screw A4 3.5 × 25 mm	 Stainless Steel Screw A2 TEX 3.9 × 16 mm	No screw	
Standard clips	 ClipStandard A2	 Standard façade clip 6 mm	 AL-SMART Standard Clip	 AL-SMART Clip Swivel A
Standard Clip Screws	 Stainless Steel Screw A4 3.5 × 25 mm	 FASADO screw 4,2 × 28 mm TEX black	No screw	
Façade beam	 WPC joist 30 (or 50 Minibone Ebony)	 AL-SMART 25 Black - Groove down (or AL joist 30)	 AL-SMART 25 Black - Groove up	
	Slide protection when mounted vertically – anchor each profile with 1x <b>FASADO screw 4.8 × 47 mm TEX Black</b>			

Table 3 Extended assemblies of façade profiles, joists and clips with a gap of 13 mm

Gap	13 mm (vertical mounting)		
Façade profiles			
Description	Basic variant for WPC joist	Basic variant for aluminum joist	Variant for the fastest mounting in an aluminium joist
STARTt Clips	 Clip Start A2 black		 AL-SMART Start Clip 7 mm
STARTt Clip Screws	 Stainless Steel Screw A4 3.5 × 25 mm	 Stainless Steel Screw A2 TEX 3.9 × 16 mm	No screw
Standard clips	 Standard façade clip 13 mm		 AL-SMART Clip Swivel B
Standard Clip Screws	 Stainless Steel Screw A4 3.5 × 25 mm	 FASADO screw 4,2 × 28 mm TEX black	No screw
Façade beam	 WPC joist 30 (or 50 Minibone Ebony)	 AL-SMART 25 Black – Groove down (or AL joist 30)	 AL-SMART 25 Black – Groove up
	Slide protection when mounted vertically – anchor each profile with 1x <b>FASADO screw 4.8 × 47 mm TEX Black</b>		

## 2.B MOUNTING ON FAÇADE JOISTS

- The **FASADO system** allows the profiles to be mounted **vertically and horizontally**.
- It offers **any gap width** and **concealed mounting without visible screws**.

### Profile preparation

- Prepare a **mat** larger than the profile length (e.g. cardboard).
- Lay out the profiles at the desired spacings:
  - **17 mm gap** – the Fasado joist can be used as a spacer, 6 MINISTAR profiles can fit.
  - **30 mm gap** – 5 profiles can fit.

### Pre-drilling

- The profiles must be **pre-drilled** according to the type of screw:
  - **Stainless steel screw:** drill bit  $\varnothing$  2 mm / depth 17 mm.
  - **FASADO screw:** drill bit  $\varnothing$  3 mm / depth 17 mm.

### Mounting and anchoring

- **45 MINISTAR** is anchored **with 1 screw, 90 STAR 2 screws**.
- Joist spacing:
  - **45 MINISTAR** – max. 600 mm
  - **90 STAR** – max. 750 mm
- Tighten with a **torque of max. 4 Nm** and prevent punctures or bulging of the profile.
- The finished field is attached to the façade supports **with two screws** into an **aluminum or WPC joist**.

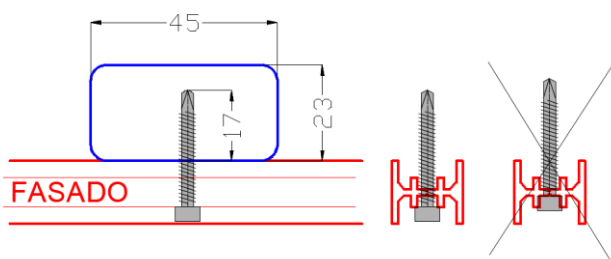
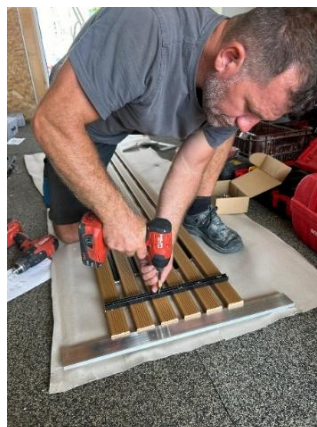


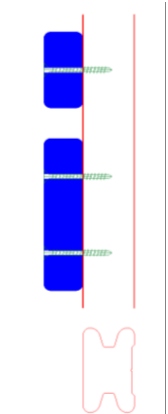
Table 4 Details of anchoring on the Fasado joist

Gap	17 mm – 30 mm (horizontally and vertically)	
Façade profiles		
Screws	 Stainless steel screw A4 3.5 x 25 mm (pre-drilling $\varnothing$ 2 mm)	 FAÇADE screw 4.2 x 28 mm TEX (pre-drilling $\varnothing$ 3 mm)
Auxiliary joist	 FASADO - façade joist 17 x 15 x 360 mm	
Screws for anchoring Façade joists	 Stainless Steel Screw A4 3.5 x 35 mm	 FAÇADE screw 4.8 x 34 mm TEX Black
Façade beam	 WPC Joist	 AL joist



## 2.C SCREW-THROUGH INSTALLATION

- The biggest advantage of this method of installation is **quick installation and low price per m<sup>2</sup>**.
- Screws 4.0 × 40 mm with a small head (Ø 6 mm) are recommended; the head is fully countersunk into the profile.
- Screws available in silver and black: black for dark profiles, silver for light ones.
- Before installation, it is necessary **to pre-drill the profile and the joist with a Ø 3 mm drill**.



## 5. DETAILS OF CONNECTING JOISTS

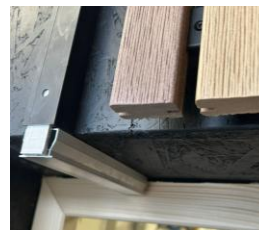
- For the longitudinal connection of aluminium joists, **the AL-SMART Joist Coupling 25** is used.



- For the corner connection of **the AL joist 30, AL-S joist 30 and AL-S joist 50**, the AL-S Corner Connector or the AL-S Flat Corner Connector are used.
- Before using **the AL-S flat corner coupling**, it is necessary to cut the joists at an angle of 45%.
- These elements allow for **simple and precise connection of joists** in corners and around **windows or doors**.

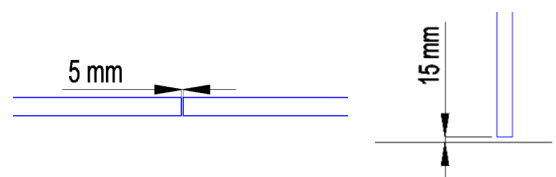


- When using AL-SMART aluminium joists, the corner joint of the joist on the **lining and lintel** is solved **with an aluminium L-profile** (e.g. 80 × 80 mm) adjusted to a **width of 25 mm**.
- This profile ensures **a firm and aesthetically clean** end of the joists in transition details.



## 6. DETAILS OF THE 90 STAR, 45 MINISTER PROFILES

- A gap of at least 5 mm must be created for the longitudinal connection of façade profiles.
- Façade profiles must be installed at least 15 mm from the ground.



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