ASSEMBLY INSTRUCTIONS

SUNSHADES

90 RHOMBA

TERAFEST by WOODPLASTIC

ASSEMBLY INSTRUCTIONS

SUNSHADES
90 RHOMBA

BEFORE YOU BEGIN

Fire Applications and Classification

- **90 RHOMBA** profiles can be used as **a sunshade**, **certified balcony filling, pergola roof, or as a fence element**.
- The use in the form of façade cladding is addressed in a separate installation manual **Facade cladding 90 RHOMBUS, 90 RHOMBA.**
- The profiles are classified in **Reaction to Fire Class E**.
- For taller buildings, **consultation with a fire specialist** and installation according to **the Fire Safety Solution is required**.

Design constraints

- **Lighter elements** can be fixed in **the aluminum reinforcement** of the 90 RHOMBA profile.
- **Do not insert electrical cables** into the 90 RHOMBA profile.

Colour and appearance

- Each profile is **a natural product** – there may be slight colour differences or shadows that underline the natural look of the wood.
- These deviations **do not affect quality or service life**.
- Before installation**, check and mix the profiles** so that the colour of the façade is even.
- We recommend ordering **the material for the entire cladding at once**.

Dimensions and expansion joints

- Manufacturing tolerance: width ± 2 mm | thickness ± 1 mm | length ± 10 mm | max. deflection 5 mm/m.
- The profiles expand and contract **due to temperatures**, so **keep the prescribed dilating gaps**.

Use and storage

- TERAFEST® profiles are designed for **outdoor use**.
- Store **in a dry, flat and shady place**, protect from the sun.

Surface and maintenance

- **Do not treat** with stains, varnishes, oils or other products unless they are intended for composite materials.
- **Do not use solvents or thinners.**

Working with material

- Use common tools like for hardwood: circular **saw, drill, cordless screwdriver, tape measure, spirit level, pencil, rubber mallet and angle.**
- Rhomba profiles can be cut together with aluminum reinforcement at once.

ASSEMBLY INSTRUCTIONS

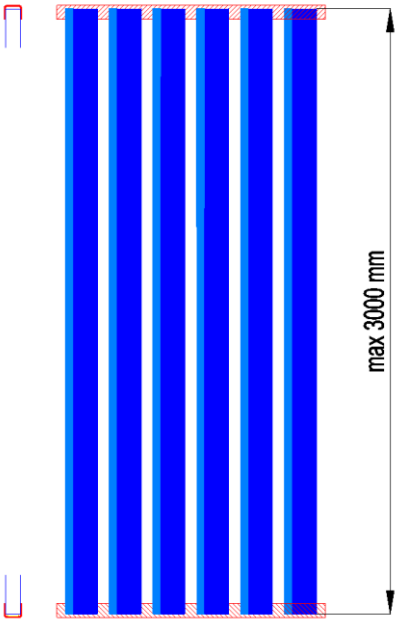
SUNSHADES
90 RHOMBA

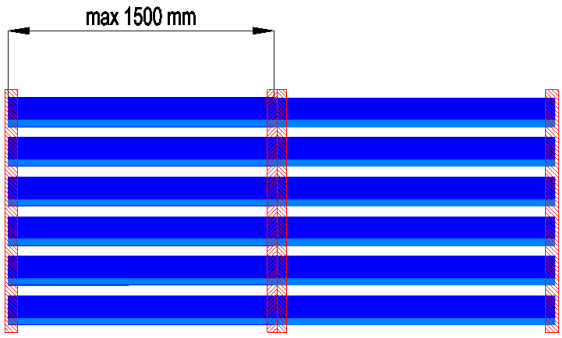
A. INSTALLATION AS A FREESTANDING SUNSHADE

Fast and reliable installation method by inserting and riveting **90 RHOMBA profiles** into **U-profiles**.

1. Structural Design and Support Distances

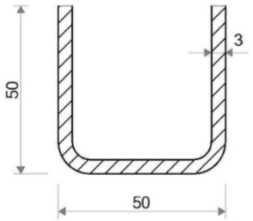
- The use of RHOMBA profiles as **free-standing sunshades** is designed according to **the static calculation** for the climatic conditions of the Czech Republic (Eurocode 1, EN 1991-1-4).
- **The anchoring distances** are greater than those of façade cladding (according to EN 15534-5).
- For use in other countries, **consultation with the static design engineer** or a separate calculation is required.
- **Maximum support distances:**
  - **Vertical:** 3.0 m
  - **Horizontal:** 1.5 m
  - The calculation is based on the wind pressure **qb = 0.68 kN/m²**, corresponding **to terrain category IV** and the height of the building up to **5 m**.
- In open terrain (categories I–III), the distances must **be shortened according to the additional calculation** (tables on request from the manufacturer).

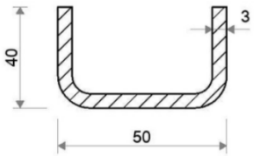


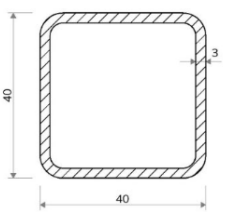


2. Preparation of U-profiles and steel

- Mounting is possible in **both vertical and horizontal directions**.
- Use **U-profiles with corrosion protection** – galvanized or aluminium with **a comaxite surface**.
- The inner dimension of the U-profile must be at least **45 mm** (RHOMBA width = 42 mm).
  - Recommended dimensions: **50×50×50×3 mm** or **40×50×40×3 mm**.
- For free-standing structures, use **load-bearing props made of** min. **40×40×3 mm**.

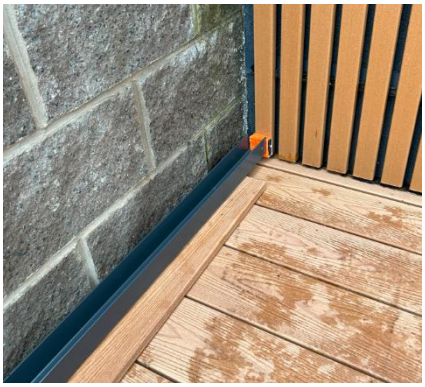
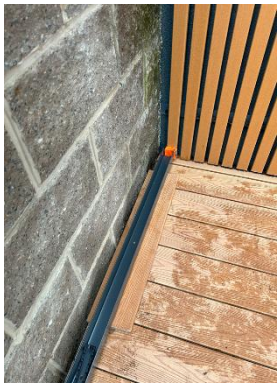


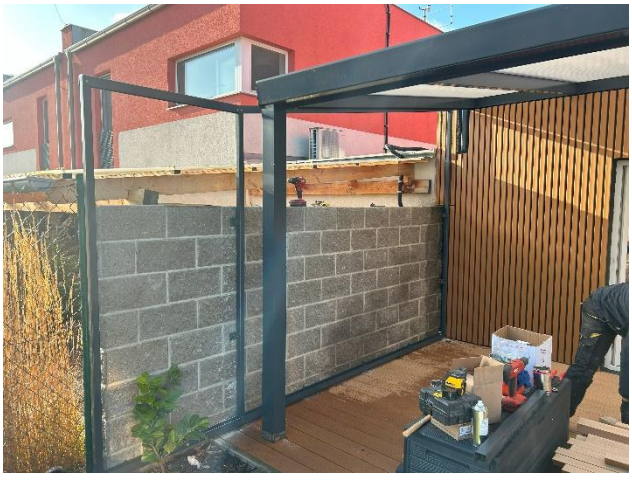




3. Assembly of U-profiles and steel structures

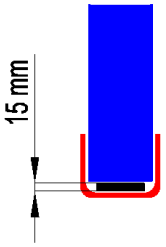
- Pre-drill holes for the lower **U-profile to drain the water** – approx. every **40 cm**.
- Also, pre-drill holes for **anchoring to the floor or wall**.
- Pre-drill **before galvanizing or komaxit**.
- Anchor the lower profile to the substrate at the site of the planned RHOMBA wall.
- Install the upper (or side) U-profiles.
- RHOMBA profiles are not load-bearing – for free-standing sunshades, it is necessary to use **sufficiently rigid steels**.
- When mounting on the terrace, leave a gap of approx. 22 mm **between the surface and the lower U-profile** for water drainage.



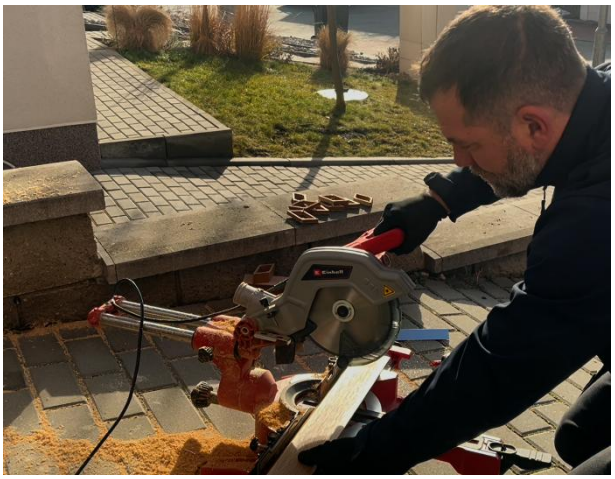

4. Preparation of spacers

- Prepare **spacers** to define the gaps between RHOMBA profiles and U-profiles.
- Gap between the bottom edge of the RHOMBA profile and the inner wall of the U-profile: **min. 15 mm** (recommended also at the top and sides).
- Recommended spacing between profiles: **50 mm** (can be adjusted as required).
- As spacers, use e.g. **plastic façade underlays**.



3. Preparation of Rhomba profiles

- Check the lengths of the profiles and adjust them if necessary.
- Always cut **together with aluminium reinforcement**, e.g. with a miter saw with aluminium blade.

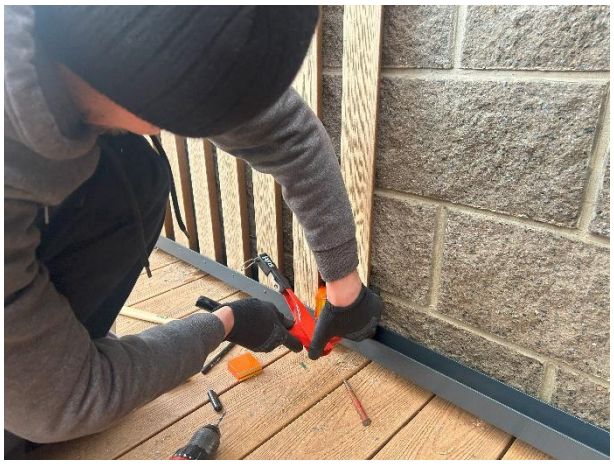


3. Insertion and riveting of individual Rhomba profiles

- Insert the profiles into the lower and upper U-profiles in turn.
- Use spacers for even gaps.
- Before anchoring, drill both U-profiles and RHOMBA profiles with reinforcement according to the selected rivet.
- Recommended fastener: **blind rivet Al/St 4.0×16 mm**, in U-profile colour.
- Minimum rivet length: 16 mm.

ASSEMBLY INSTRUCTIONS

SUNSHADES
90 RHOMBA



B. INSTALLATION AS BALCONY FILLING

1. Basic information

- 90 RHOMBA **profiles** can be used as **both vertical and horizontal railing fillings**.
- The maximum **gap between the profiles** is **80 mm** (certified according to **ČSN 74 3305**).
- The profiles are **anchored with a screw through the entire profile** to the **load-bearing structure of the railing**.
- The installation is suitable for both **steel** and **aluminum** frame structures.

2. Recommended railing heights

- **900 mm** – for a fall depth of up to **3 m**
- **1000 mm** – for a fall depth of up to **12 m**
- **1100 mm** – for a fall depth of up to **30 m**
  These values are based on the requirements of **the ČSN 74 3305 standard** and apply to common residential and terrace buildings.

3. Mounting principles

- RHOMBA profiles are **always installed against the load-bearing structure of the railing** – the screw goes **through the entire profile up to the frame**.
- Pre-drilling is recommended with a **Ø 3 mm drill bit** to prevent damage to the aluminium reinforcement.
- Recommended screws: **stainless steel A2 4.0×60–80 mm** depending on the thickness of the structure.

4. Termination and details

- **Horizontal railing:** finish the ends of the profiles **with RHOMBA caps** (see accessories).
- **Vertical railing:** the top end can be made using **a horizontal RHOMBA profile** for an aesthetic finish and increased field rigidity.

Rhomba railing in a horizontal position.

End caps must be used for railing ends (see previous chapter).

Rhomba railing in vertical position.

Termination can also be done with a horizontal Rhomba profile.

C. INSTALLATION AS A PERGOLA ROOF

1. Basic requirements

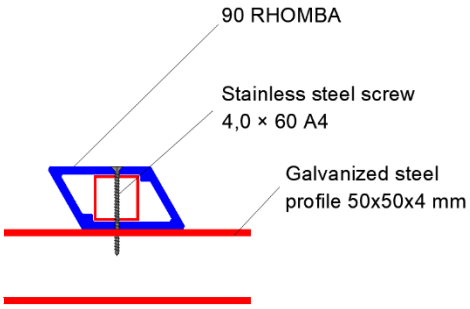
- Roofing a pergola using **90 RHOMBA profiles** requires **a solid supporting structure** that can support the weight of the profiles as well as **wind and snow loads**.
- The structural analysis must verify the load-bearing capacity of the structure and the maximum support distances.

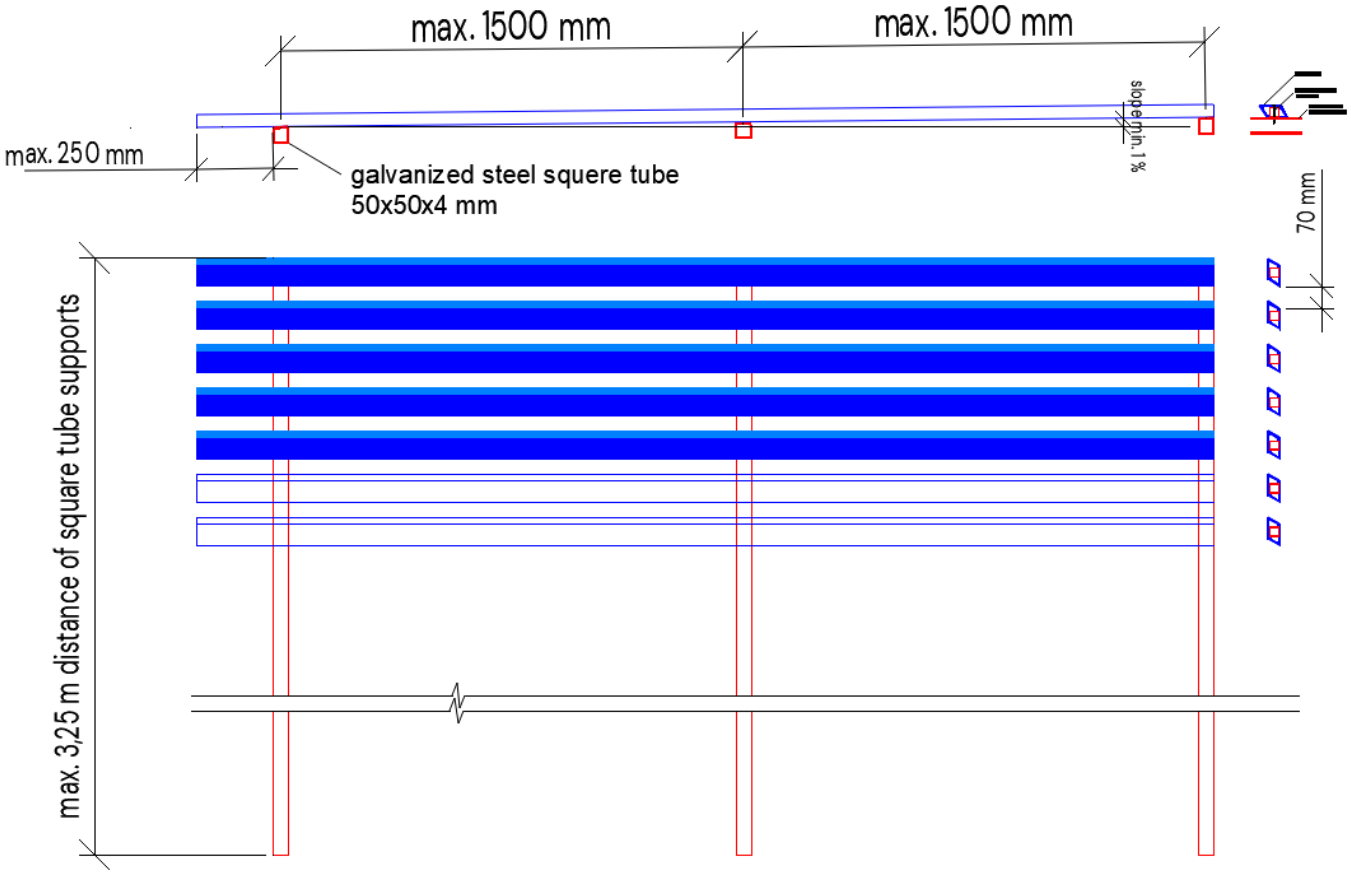
2. Recommended load-bearing profiles

- Unless otherwise specified, use **50×50×4 mm galvanized steel cylinders**.
- With a gap between RHOMBA profiles **of 70 mm**, the maximum **distance between the steel supports is 3.25 m** (calculation for the climatic region of the Czech Republic).

3. Installation of RHOMBA profiles

- Lay the profiles **at a slope of at least 1%** for water drainage.
- Lay them across the cylinders with **a spacing of max. 1500 mm**.
- Anchor each RHOMBA profile **with screws through the entire profile** directly into the steel beam.
- Recommended fasteners: **A2 stainless steel screws 4.0×60–80 mm**, pre-drilling with a **drill Ø 3 mm**.





D. ASSEMBLY AS SEPARATE FENCE OR SUNSHADE PARTS

1. Recommended Profile Type

- For the installation of free-standing **fence** or **sunshade parts**, it is preferable to use the **90 RHOMBUS profile without aluminum reinforcement**.
- The rigidity and stability of the entire structure is ensured **by a separate steel reinforcement**, which is installed according to the procedure below.
- This method allows for easier installation, lower weight and a clean appearance without visible screws.

2. Design solution

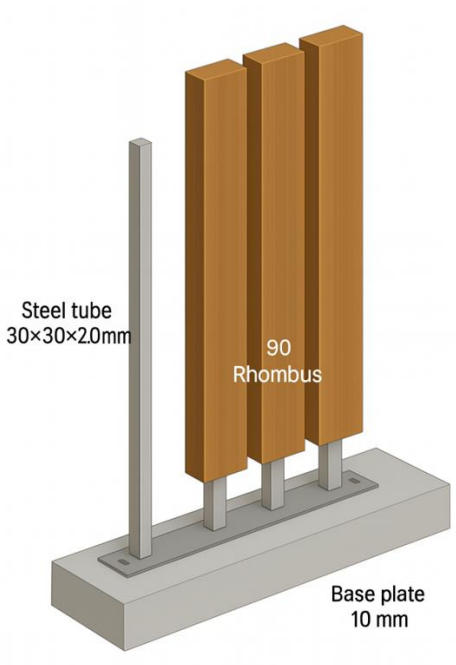
- The cavity of the 90 RHOMBUS profile is used to **attach individual fence posts to steel studs**.
- For normal use, **30 × 30 × 2 mm steel cylinders** with **a galvanized surface finish are sufficient**.
- **The maximum height of the fence** with this reinforcement is **1,200 mm**.
- When using **a thicker steel,** the height of the fence can be **increased** according to the result of the static calculation.

3. Anchoring of steel structure

- Steel steel steels are **welded to a base plate** with **a width of at least 120 mm** and a thickness of **10 mm**.
- The spacing of the slats is **120–150 mm** depending on the required density of the slats.
- The base plate is **anchored to the concrete base or foundation** using **two M10 chemical anchors**.

4. Installation of RHOMBUS profiles

- Attach the profiles **to the studs** carefully so as not to damage the inner cavity.
- Before assembly, verify the **straightness and verticality of** all steel elements.
- For higher weather resistance, the steel parts can be coated **with a komaxit coating** in a colour corresponding to the profile.



WPC – WOODPLASTIC a.s., V celnici 1034/6, 110 00 Prague 1, Company ID: 08920354, VAT ID: CZ08920354, phone: 800 720 288, e-mail: wpc@woodplastic.cz, www.terafest.cz; The company is registered in the Commercial Register maintained by the Municipal Court in Prague, file number B 25100.