

ASSEMBLY INSTRUCTIONS

# Zambelli Siding-Panels



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# ZAMBELLI SIDING-PANELS.

### 1. Thermal insulation

The installation of the siding system may be carried out both as an uninsulated wall component and as a part of a multi-layered wall either on solid structures or profile panels. Multi-layered structures are usually insulated. The thickness of insulating materials depends on the functional requirements of a building.

The distance between the load-bearing component and the siding profiles is ensured by appropriate spacers. According to the German standard DIN 18516, a ventilation gap of

20 mm must be provided between the external surface of the insulation and siding. The ventilation gap is required to reduce moisture/humidity and to drain off any rainwater or meltwater that may appear on the inside of the cladding.

For vertical installation, the required gap is provided by the profile height (25 mm). For horizontal installation, the required gap must be ensured by appropriate design of the substructure. For the required ventilation, the plinth and the upper connection must ensure air intakes and outlets with at least 50 cm<sup>2</sup>/m.

### 2. Additional adjustments

Various additional adjustments may be necessary during the installation of the siding panels, which are as follows:

▶ Cross- or bevelled cuttings may be carried out by a table circular saw or handheld circular saw with a carbide-tipped blade with medium-sized teeth applying cutting wax

▶ Longitudinal cuttings may be carried out by a table circular saw, handheld circular saw, electric shears for sheet metal or electric nibbler

▶ Notching – using a nibbler or jigsaw

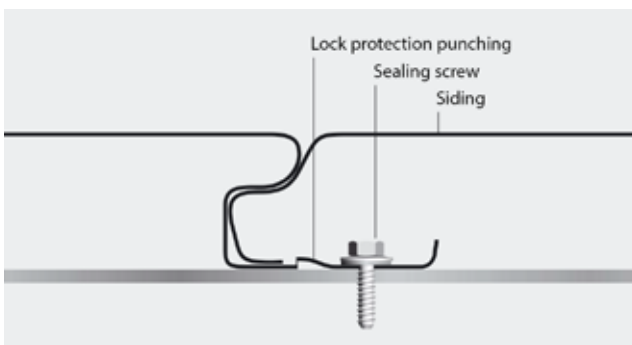
▶ Bending – depending on material strength

H 44 → Bending with  $R_{\min} = 2.5 \times$  sheet thickness

H 46 → Bending with  $R_{\min} = 3.5 \times$  sheet thickness

### 3. Installation

The siding panels are provided with asymmetrical tongue and groove joint profiles on the longitudinal sides.



The lock protection punching is provided to prevent the sidings from unhooking as a result of wind suction loads. The drilling notch ensures an exact positioning of the connection to the substructure. Sidings may be installed both vertically

and horizontally. Due to the asymmetrical joint formation and the required adherence to the painting direction of the colour coating, installation is only possible in one direction.

While vertical installation is possible from left to right as well as from right to left, horizontal installation must always be carried out from top to bottom. It is not possible to change the installation direction within a wall. The panels of the entire object may be aligned in the same way, so that the colour arrow of the coating always points in the same direction (unless otherwise required for design reasons).

Before starting the installation of the panels, the grid of the sidings may be marked out at larger intervals on the substructure.

### 3.1 Vertical installation

Start the installation at a wall corner with a starting panel (groove side). The required width of the starting panel may be determined from the installation plan or the grid markings. In the case of multi-story buildings or high, single-storey buildings, as well as single-row laying of the siding, installation begins in the plinth area above an already installed drip flashing. The attachment of the starting panel stays visible on one side.

Installation of the corner flashing sheets and the starting panel may be carried out in one work step.

Edged sidings can also be used as corner elements.

The installation of the next siding panel is carried out by positioning the tongue side at a slight angle and sliding the profiling into the groove side of the previous siding using the lock protection punching. Afterwards, align (height position and plumb) and secure the siding in the required position (e.g. by fastening it to the substructure using gripping pliers). Self-tapping screws, sealing screws or clinch rivets can be used to attach the siding panels to the substructure. The connecting elements must fulfil the corrosion protection requirements of DIN 18807-09.

To increase the washer size at the connection, folding blind rivets can be combined with sealing washers. The required hole must be drilled in the drilling notch depending on the used fastener and the type of substructure. Self-drilling screws must not be pre-drilled. All screws should be fastened by means of a depth-stop screw driver.

The approximate rotational frequency for self-tapping screws is 600 rpm. and 1200 - 1800 rpm. for drilling screws.

In higher buildings, where several rows of sidings have to be installed one above the other, the individual rows are separated by a corresponding „storey separating profile“. To avoid coupling of the sidings and thus buckling due to thermal expansion or contraction, the substructure must also be separated at this point. Depending on the position of the wall to the cardinal direction, length changes of approx. 0.5 - 1.0 mm/m must be expected.

In the case of sealing screws, the following drill hole diameter is required:

Supporting structure material	Material thickness	Screw type	Required diameter Ø
Steel	1.25	Coarse thread with drilling tip Ø 6.5 or fine thread with drilling tip Ø 6.3	4.5
	1.50		5.0
	2.0 - 4.9	Fine thread with cone shaped tip, Ø 6.3	5.3
	5.0 - 6.9		5.5
	≥ 7.0		5.7
Aluminium	1.5 - 2.9	Coarse thread with drilling tip Ø 6.5 or fine thread with drilling tip Ø 6.3	4.5
		Fine thread with cone shaped tip, Ø 6.3	5.0
	3.0 - 4.9		5.3
	≥ 5.0		
Wood		Coarse thread with drilling tip Ø 6.5	4.5
Steel or aluminium		Folding leg blind rivet Ø 5.2	5.4

*The indicated specifications apply to EJOT screws provided by Zambelli. Other manufactures may have other technical characteristics.*

The minimum thread engagement length into wood is 4 x diameter of the screw. The recommended engagement length is 8 x diameter of the screw. When using self-drilling screws, the length of the drill bit must match the material thickness of the substructure. The installation sequence ends at the opposite corner with an end profile. The width of the panel should match the width of the starting profile for symmetry reasons.

If long siding panels are used on walls with high temperature loads (e.g. south side), a screw connection scheme with a fixed point and large hole is recommended.

When installing the next row of sidings, ensure perpendicular joints.

Remove the siding panels protective film only after the installation has been completed. When attaching flashings, it may be necessary to remove the protective film beforehand

on site. Observe the instructions attached to the packages regarding the protective film.

In buildings with gable areas, the siding panels must be adjusted to the roof slope with a bevelled cut on site.

With two gables of the same size, you can order the required siding panels in one length. Add up the length of the longest

and shortest siding panel, then of the second longest and second shortest siding panel, etc.

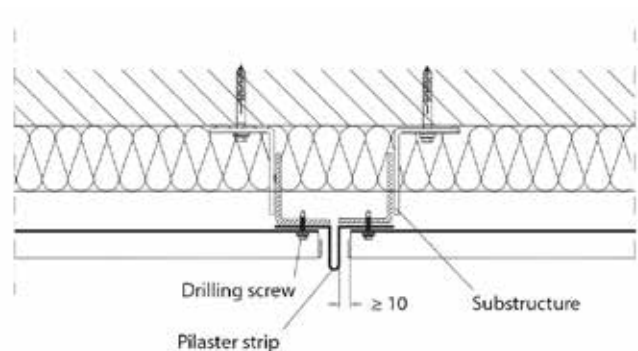
A part of the long siding panel on one gable end is then installed as the shortest siding panel on the opposite gable end. Waste is thus avoided and there are neither short lengths nor surcharges for cutting.

### 3.2 Horizontal installation

When installing horizontally, the installation direction runs from top to bottom. It is advisable to mark a grid on the substructure, just as during vertical installation, to determine the required dimensions of the start and end profiles. The siding panels are installed and fastened in the same way as in the case of the vertical installation. The lower end of the wall is then formed by a drip flashing or storey separating profile.

As the maximum length of the siding panels is 6.0 m, a vertical separation in case of longer walls is needed.

These separations are usually created in the area of pilaster strips. The edge of the pilaster strips should overlap the surface of the sidings by approx. 10 mm to prevent a lateral view of the cutting edge of the siding panel. The use of siding panels with an end folding is recommended when installing horizontally. A distance of  $\geq 10$  mm should be maintained between the pilaster strip and the siding to accommodate changes in length caused by temperature.



Alternatively, the separations may be carried out with concealed cut edges.

In order to avoid buckling of the siding as a result of temperature-related changes in length, create a separation at least every 12 m.

Use a relatively flexible substructure separated on both sides of the joint and a matching pilaster strip or joint cover.

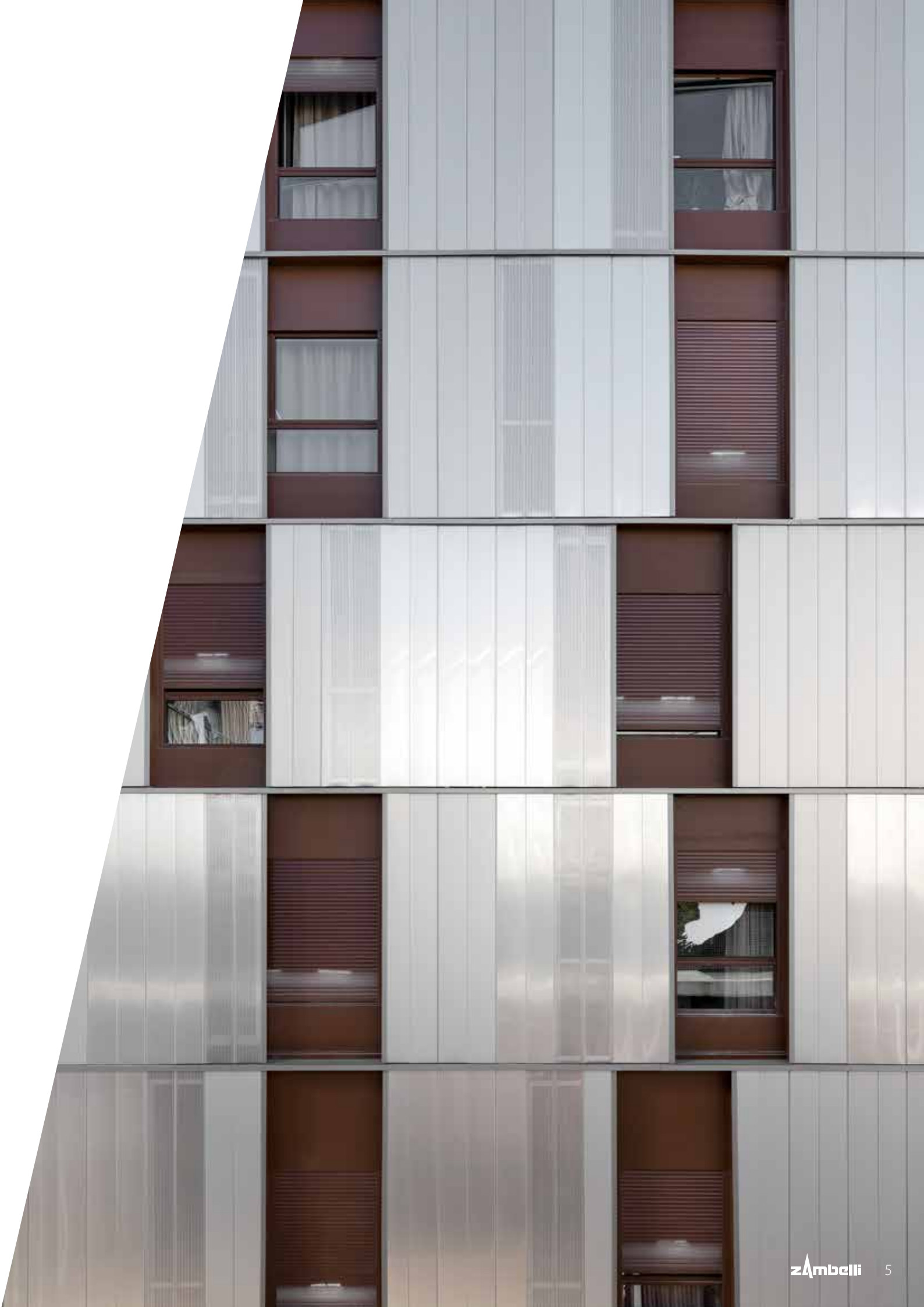
A system consisting of a central fixed point and large holes at the siding panel ends is also permissible.

Corner elements for horizontal installation can be provided. These are factory-provided with an 90° bend.

### 3.3 Flashings

Depending on the location, all flashings (pilaster strips, drip flashing, corner elements etc.) can be attached before, during or after the installation of the siding panels. The flashings are to be riveted to the siding panels or to the substructure.

The minimum overlapping of the flashings is 100 mm. In order to ensure temperature-related length changes, no connections at the overlap joints are permissible.





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