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Subject to change as of 07/26

Installation manual for Superwall ML valid in conjunction with the general installation manual for Metecno roof-and wall panels.

Sandwich panel wall

Superwall ML installation manual

1. Direction of installation

Superwall ML wall panels can be installed either vertically or horizontally. The panels are to be installed and fixed by placing them on support profiles at the base. For horizontal installation the vertical joints need to be sealed properly and covered by pilaster strips or other suitable flashings.

2. Installation

The first panel needs to be aligned perfectly and fixed immediately. The given building width of the panel needs to be maintained thoroughly; check measurements need to be performed every few panels. We recommend the use of Metecno-pressing tools for the installation of wall panels.

Installation manual for download

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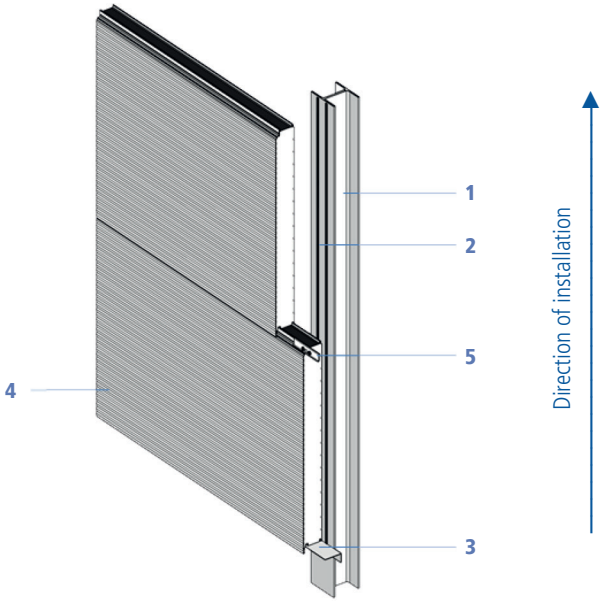
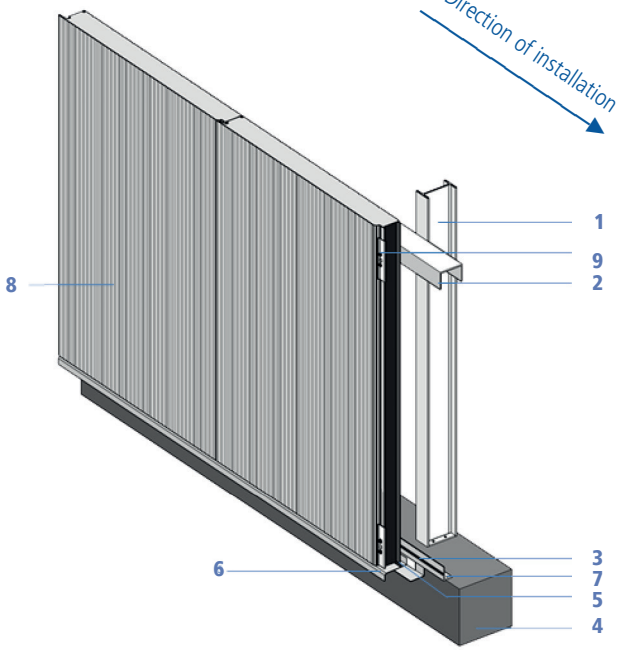
Connections to adjacent structures must be performed in professional and thorough manner.

2.1 Horizontal installation



1. support structure, 2. sealing tapes, 3. supporting profile, 4. sandwich panel Superwall ML, 5. fastener

2.2 Vertical installation



1. support structure, 2. bay rail 3. sealing tape, 4. base, 5. supporting profile, 6. dripping profile, 7. mounting angle, 8. sandwich panel Superwall ML, 9. fastener

minimum support width:

end bearing ≥ 40 mm

middle bearing ≥ 60 mm

joint area ≥ 86 mm (for horizontal installation, larger support widths may be necessary due to structural requirements, see section 6.8)

3. Fixing

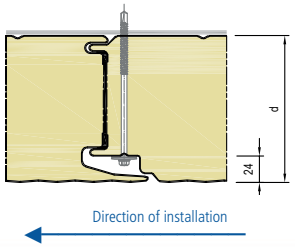
Screws may be drilled through from the external side directly into the support structure. Indirect (hidden) fixing is possible according Z-10.49-516 resp. Z-10.4-583. Additional sealing of longitudinal joint or additional screwing of the joint itself is not necessary.

3.1 Direct (visible) fixing

The necessary number of screws is defined by structural requirements (fastener supporting documents). Execute screw connection as uniform and consistent as possible. Construction-wise, all panels need to be fastened with at least two screws on both end- and middle bearing.

3.2 Indirect (hidden) fixing

For hidden fixing, the support structure needs to be set up following the necessary anchor points for wind suction. Fastening of the panels is performed in the present notch in the longitudinal joint.



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Variants for hidden fixing:

1. **1 screw with EPDM-gasket in the joint**
   - core thickness d ≤ 80 mm
   - external sheet tnom1 ≥ 0,60 mm
   - internal sheet tnom2 ≥ 0,50 mm
2. **2 screws with EPDM-gasket in the joint**
   - core thickness d ≤ 80 mm
   - external sheet tnom1 ≥ 0,60 mm
   - internal sheet tnom2 ≥ 0,50 mm
3. **2 screws with Z-calotte (load distribution plate) in the joint**
   - core thickness d =60 up to 150mm
   - external sheet tnom1 ≥ 0,60 mm
   - internal sheet tnom2 ≥ 0,45 mm

Z-calotte (load distribution plate): 180 mm. t=1,5mm Z-10.49-516 / Z-10.4-583

4. Fixing material

For fastening sandwich panels, only fixing material with EPDM-gasket according German "bauaufsichtliche Zulassung Nr.14.4-407" or according European technical approval (ETA) must be used. Self-drilling screws must be drilled through the support structure. Additional instructions by screw-supplier need to be considered as well. For direct fixing onto wooden support structure, we recommend having the screws being checked and retightened (if needed) approximately 3 months after installation.

4.1 Fixing on steel support structure

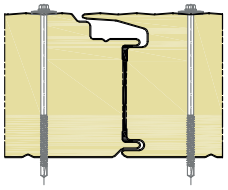
Minimum diameter for approved screws is generally 5,5mm (depending on supplier). The required screw length may vary depending on supplier and is defined by:

- type of installation (direct or indirect)
- thickness of the sandwich panel Superwall ML
- material strength of the support structure (t ≥ 1,50 mm)
- clamping width

4.1.1 Direct (visible) fixing

The following table shows minimum screw lengths for the various core thicknesses of Superwall ML:

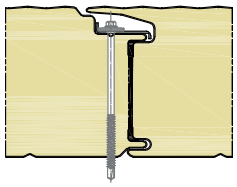
Type of fastener	self-drilling screw	thread-rolling screw
Panel thickness (mm)	(mm)	(mm)
60	≥ 90	≥ 80
80	≥ 110	≥ 100
100	≥ 130	≥ 120
120	≥ 150	≥ 140
150	≥ 180	≥ 170



4.1.2 Indirect (hidden) fixing

The following table shows minimum screw lengths for the various core thicknesses of Superwall ML:

Type of fastener		self-drilling screw	thread-rolling screw
Panel thickness (mm)	Thickness in joint area (mm)	(mm)	(mm)
60	36	≥ 70	≥ 60
80	56	≥ 90	≥ 80
100	76	≥ 110	≥ 100
120	96	≥ 130	≥ 120
150	126	≥ 160	≥ 150



4.2 Fixing on wooden support structure

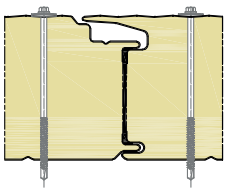
Minimum diameter for approved screws is generally 6,0 mm (depending on supplier). The required screw length may vary depending on supplier and is defined by:

- type of installation (direct or indirect)
- thickness of the sandwich panel Superwall HF
- minimum screwed-in depth (l_{ef} ≥ 50 mm)
- clamping width

4.2.1 Direct (visible) fixing

The following table shows minimum screw lengths for the various core thicknesses of Superwall ML:

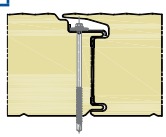
Type of fastener	self-drilling screw	thread-rolling screw
Panel thickness (mm)	(mm)	(mm)
60	≥ 130	≥ 120
80	≥ 150	≥ 140
100	≥ 170	≥ 160
120	≥ 190	≥ 180
150	≥ 220	≥ 210



4.2.2 Indirect (hidden) fixing

The following table shows minimum screw lengths for the various core thicknesses of Superwall ML:

Type of fastener		self-drilling screw	thread-rolling screw
Panel thickness (mm)	Thickness in joint area (mm)	(mm)	(mm)
60	36	≥ 110	≥ 100
80	56	≥ 130	≥ 120
100	76	≥ 150	≥ 140
120	96	≥ 170	≥ 160
150	126	≥ 200	≥ 190



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5. Distance between fasteners

The distance between fasteners needs to be followed according to Z-10.49-516 resp. Z-10.4-583 as well as the minimum edge distances for wooden support structures according DIN EN 1995-1-1.

5.1 Direct (visible) fixing

5.1.1 Distances perpendicular towards clamping direction

Minimum distance for fasteners towards the longitudinal edges is 50mm; minimum distance of fasteners among each other is 100mm.

5.1.2 Distances parallel towards clamping direction

Minimum distance for fasteners towards the cross edges of the wall panels is 20mm plus 3-times the screw diameter; minimum distance of fasteners among each other equals distance of support construction.

5.2 Indirect (hidden) fixing

5.2.1 Distances perpendicular towards clamping direction

Minimum distance for fasteners towards the longitudinal lies within the joint resp.in the rib of the external sheet; minimum distance of fasteners among each other equals the building width of 1m.

5.2.2 Distances parallel towards clamping direction

Minimum distance for fasteners towards the cross edges of the wall panels is at minimum 70mm; minimum distance of fasteners among each other equals distance of support construction.

6. Connections

6.1 General notes

Connections of wall panels towards adjacent parts of the building need to be realized according Z-10.49-516 resp. Z-10.4-583, according Metecno-connection details as well as according IFBS-rules.

6.2 Upper connections

The joint between wall-and roof panels is to be sealed against convection and diffusion with adequate flashings and sealing tapes. The remaining cavity is to be filled with polyurethane foam.

6.3 Roof parapet

Minimum distance between sandwich panel and parapet-profile is 6mm. The parapet-flashing needs to have a minimum slope of 5°.

6.4 Lower connections (base)

Wall panels need to be set onto a supporting profile to accomplish a horizontal edge along the building line. Panels must not be placed directly onto the base or dripping profile (use mounting aid, e.g. wooden ledge). We recommend a distance of 10mm, essentially 6mm at minimum. The dripping profile needs to have a minimum slope of 5° directed outwards. The dripping edge needs to have minimum distance of 20mm towards the underlying wall. Scarf joints need to be provided with an adequate flashing.

6.5 Small openings

Pipe penetrations in the joint areas of the panel are to be avoided. Openings in wall panels smaller than 200mm x 200mm resp. Ø max. 200mm do not require additional support construction and me be realized with adequate sleeves (adapted to the profile geometry of the panel) with circular sealing. For openings in the joint area of the panel, the draining water needs to be dissipated securely outwards on the external layer of the joint. Multiple small openings need to be aligned with minimum disturbance to the panel (e.g. parallel and perpendicular offset of the openings). Bigger openings require a supporting substructure along the edges, which both panel and adjacent building parts are fastened to.

6.6 External corner flashings

Joints on external corners of the building need to be sealed adequately and covered with flashings.

6.7 Longitudinal joint

To assure sufficient compression of the provided sealing tapes, the given building width (1m) of the panel needs to be maintained thoroughly. This should be done by check measurements every few meters (on the top and bottom for vertical installation; left and right for horizontal installation as well as above and below middle bearing). Protective foil is to be removed from the joints duly before fastening.

6.8 Lateral joint

For lateral joints between two wall panels, a minimum supporting width of 86mm is required (joint min.6mm). Vertically installed wall panels require a butt connection in the lateral joint with a dripping profile in between. Joints need to be sealed with adequate sealant/sealing tapes.

Vertical pilaster strips for horizontally installed wall panels allow versatile visual possibilities. However, larger supporting widths may be necessary depending on the type of design.

Possible variants for covering of lateral joint:

1. Flashing, e.g. hat-profile
- supporting width for direct (visible) fixing ≥ 100 mm
- supporting width for indirect (hidden) fixing ≥ 280 mm

2. Extruded aluminum sheath pilaster profile 160
- supporting width for direct (visible) fixing ≥ 130 mm
- supporting width for indirect (hidden) fixing ≥ 310 mm

3. Extruded aluminum sheath pilaster profile 110
- supporting width for indirect (hidden) fixing ≥ 310 mm

(see detail: lateral joint for horizontal installation of wall panels XX.08.01 and XX.08.02)

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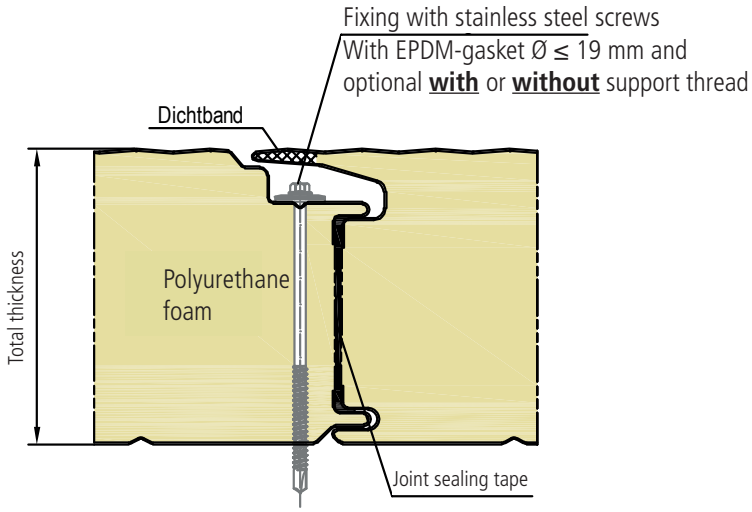
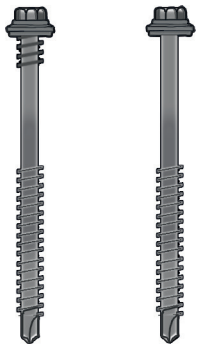
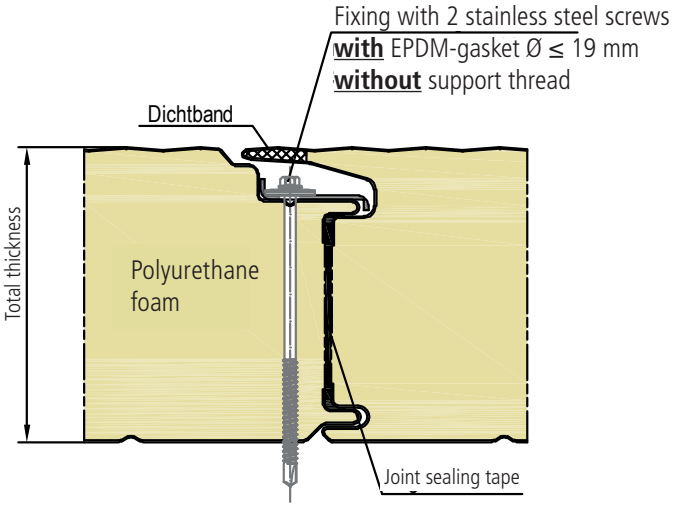
7. Hidden fixing

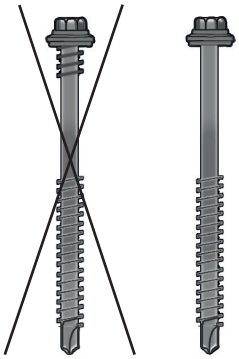
A: detail of longitudinal joint without Z-calotte (load distribution plate)



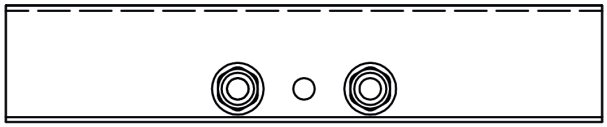


B: detail of longitudinal joint with Z-calotte (load distribution plate)

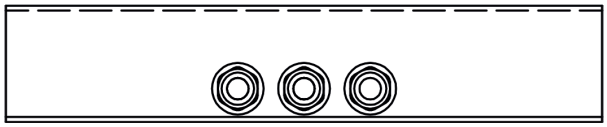




Fixing with 2 stainless steel screws



Fixing with 3 stainless steel screws
depending on structural requirements, 3 screws may be necessary



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