

ARPANEL

STYLE. QUALITY AND FUNCTION.

A NEW BENCHMARK
IN FACADE QUALITY

DUAL SKIN



WHAT IS

ARPANEL DUAL SKIN?

ARPANEL DUAL SKIN is a ventilated facade system based on a certified sandwich panel, designed to transfer the loads associated with the installation of external cladding.

The ARPANEL DUAL SKIN system is designed for use with ARPANEL XS PIR, XSU PIR and XCH PIR sandwich panels. They allow for the installation of a wide range of facade cladding by main vendors by opening up almost limitless design possibilities.

Additional cladding panels can be fixed using special Omega-type system rails, Z-profiles and cap profiles, which ensure the stability and safety of the entire structure whilst maintaining the airtightness of the partition.

The DUAL SKIN system can be installed in either a vertical or horizontal configuration, depending on the design requirements and architectural vision. This system offers excellent thermal and mechanical properties and meets stringent fire safety requirements, including the requirement for fastenings to remain secure to prevent components from falling off during a fire (§ 225 WT). High fire performance and adequate fire resistance translate to safety and design flexibility in demanding projects.

KEY BENEFITS

ARPANEL DUAL SKIN

ARPANEL DUAL SKIN is a breakthrough facade system that combines the functionality of sandwich panels with the aesthetic appeal of modern architectural cladding – without any compromise. This solution has been designed for investors and designers who expect not only very good insulation properties and load-bearing capacity but also the ability to give a building a distinctive, prestigious character.



Unique facade design

Install facades with a modern, elegant and distinctive character that make your building stand out.



Certified high load-bearing sandwich panel

The system ensures exceptional structural strength and stability, guaranteeing the safety and durability of the facade.



Available in a wide range of finishes and colours

Comes in a wide range of materials, textures and colours allows the facade to be adapted to any architectural style.



Installing various cladding materials weighing up to 40 kg/m²

Allows for the use of various types of external cladding, creating facades that are both striking and functional

INSTALLATION OF THE ARPANEL DUAL SKIN SYSTEM

The ARPANEL DUAL SKIN system enables the installation of attractive facade cladding in a variety of styles and materials directly onto the building envelope, without compromising its airtightness.

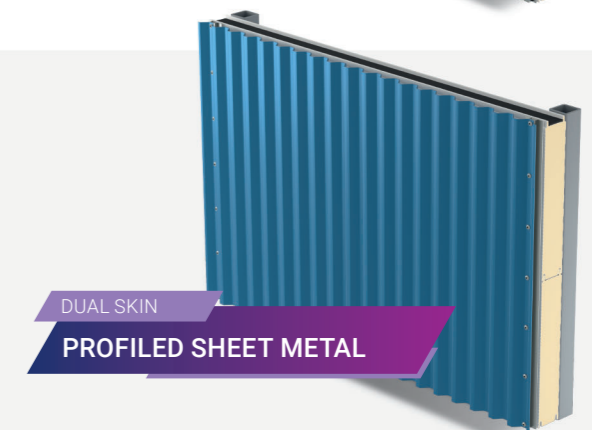
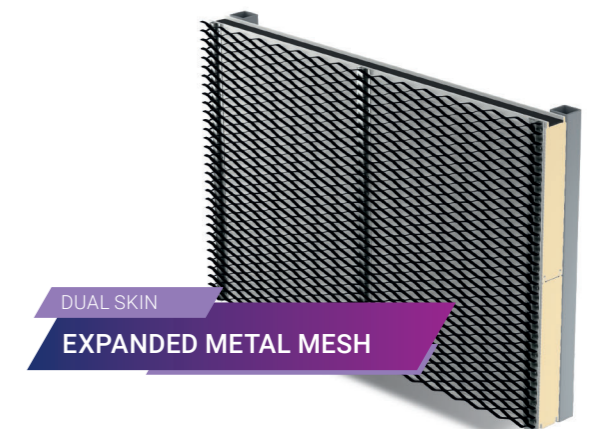
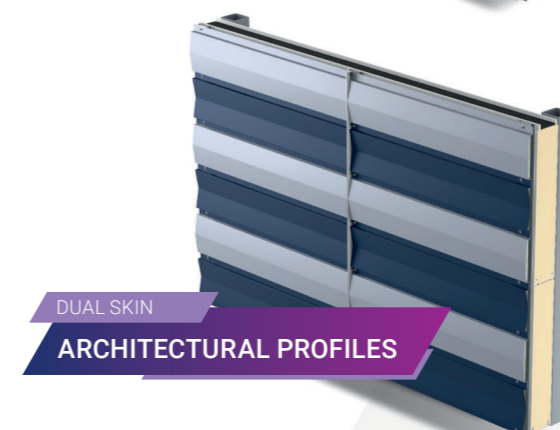
You can easily create a modern, aesthetically pleasing facade while maintaining integrity with the existing building. The possibilities of the system are almost unlimited including the creation of facades with a unique 3D effect and giving new life to facades, without interfering with airtightness. The ARPANEL DUAL SKIN product range allows for the fixing of a wide range of external claddings, offered by leading manufacturers, weighing up to 40 kg/m². ARPANEL, as the supplier of the DUAL SKIN system, provides comprehensive advice at every stage of implementation.



ADDITIONAL FACADE CLADDING

see facade panels, expanded metal mesh, architectural profiles, profiled sheet metal, and architectural panels

Example solutions of ARPANEL DUAL SKIN





TYPES OF

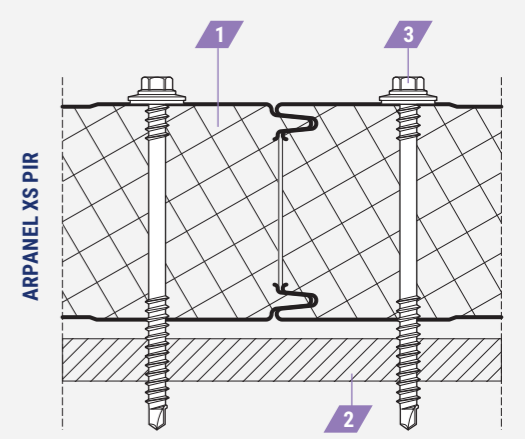
ARPANEL DUAL SKIN sandwich panels

Panel type	Dual Skin ARPANEL XS PIR	Dual Skin ARPANEL XCH PIR	Dual Skin ARPANEL XSU PIR
Panel thickness [mm]	80/100	120/140/160	80/100/120
Module width [mm]	1000/ 1100/ 1150		1000
Thickness of the external cladding	0,6 mm ≤ tnom1 ≤ 0,7 mm		
Thickness of the internal cladding	0,4 mm ≤ tnom1 ≤ 0,7 mm		
External profiling	Micro 14		
Internal profiling	Linear, smooth, micro 20		

The fixing system for wall sandwich panels ARPANEL XS PIR, ARPANEL XCH PIR

Spacing between fasteners	relative to each other e	to the edge of the panel e _R
Perpendicular to the direction of mounting (see illustration)	≥70 mm	≥100 mm
Parallel to the direction of clamping	support spacing	≥20 mm and ≥3 d

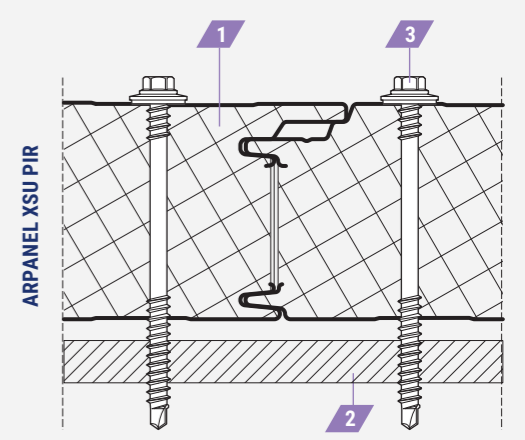
d: Diameter of a fastener



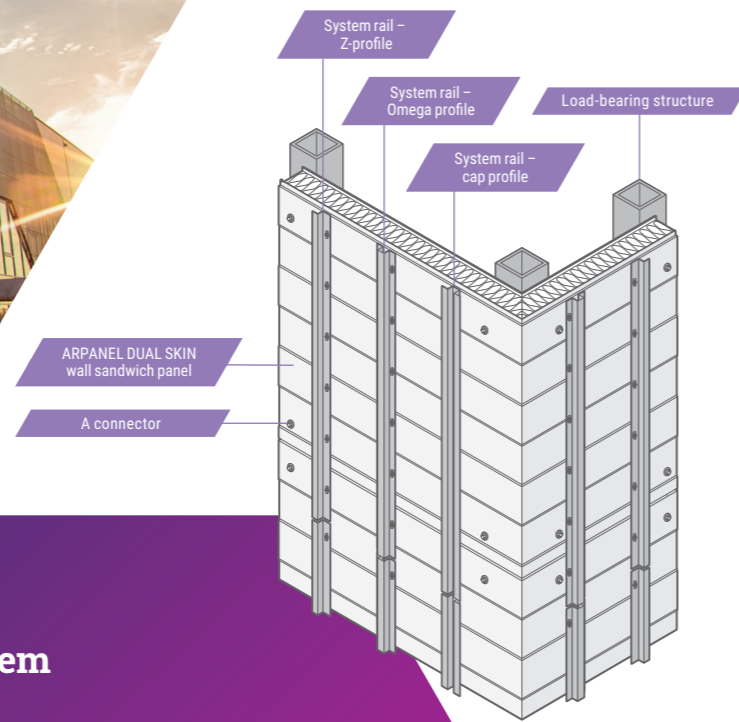
The fixing system for wall sandwich panels ARPANEL XSU PIR

Spacing between fasteners	relative to each other e	to the edge of the panel e _R
Perpendicular to the direction of mounting (see illustration)	≥100 mm	≥70 mm
Parallel to the direction of clamping	support spacing	≥20 mm and ≥3 d

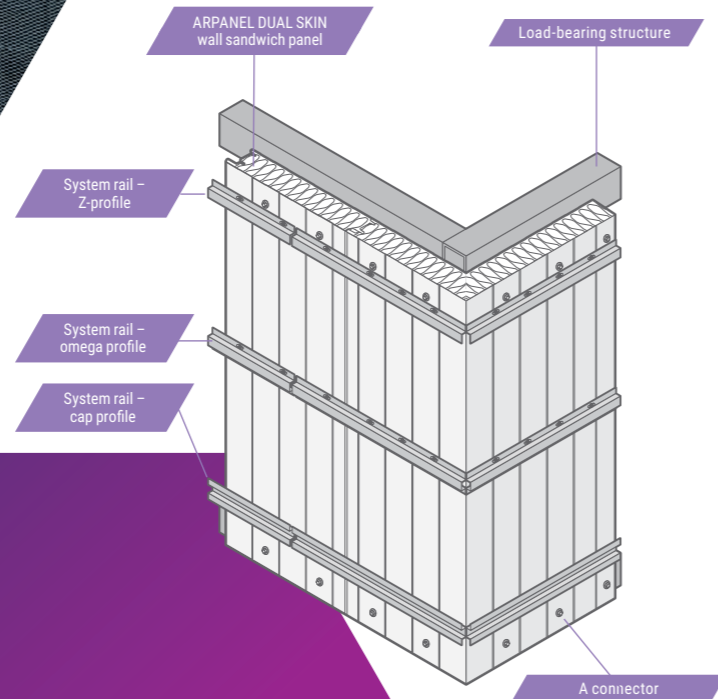
d: Diameter of a fastener



- 1. Sandwich panels
- 2. Support, load-bearing structure
- 3. Fastener



A sandwich panel wall assembly for the ARPANEL DUAL SKIN system – horizontal installation



A sandwich panel wall assembly for the ARPANEL DUAL SKIN system – vertical installation

Requirements for the installation of ARPANEL DUAL SKIN sandwich panels

Structural analysis of the DUAL SKIN system

For the design of the ultimate limit state and serviceability limit state, the German Institute for Building Technology (German: DIBT) approval document No. Z-10.4-908 dated 26 August 2024 applies; the verification procedure is as set out in section 3.2.

As part of the stability analysis, the following items must be verified:

- stresses caused by wind;
- stresses caused by vertical loads from the dead weight;
- compressive stresses for the outer and inner skins, taking the limit stress values appropriate to the specific skin profile and the thickness of the sandwich panel.

- The DUAL SKIN external facade cladding can be installed with horizontal or vertical fixing and must be fixed directly to the sandwich panel.
- The rails are installed perpendicular to the direction in which the wall sandwich panels are fixed.
- There must be at least 2 rails for each element of the additional facade cladding.
- The horizontal distance between the edge of the row of connectors near the rail edge and the edge of the aR component is greater than 150 mm.
- Horizontal distance between the rails: $200 \text{ mm} < a < 1500 \text{ mm}$.
- Each OMEGA profile must be secured using at least two pairs of fasteners per sandwich panel.
- Each Z-profile or cap-shaped profile must be secured to the sandwich panel using at least 2 fasteners.
- One pair of connectors (with an omega profile) or one connector (with Z-profile or cap-type) must be positioned at the top edge of the longitudinal slots for each rail (one fixed point per rail). All other fasteners must be centred in the longitudinal holes designed with plain bearings
- The external facade cladding, including any additional anti-corrosion protection, must meet the criteria corresponding to fire reaction class B-s2,d0 (or a higher class in accordance with EN 13501)
- In the case of direct fixing, each sandwich panel must be secured using at least 2 connectors per bracket.
- The width of the support must not be less than the following:
 - End support, 40 mm
 - Intermediate support 60 mm.
- The system rails must be used to fix wall cladding to external cladding systems such as ARPANEL XS PIR, ARPANEL XCH PIR and ARPANEL XSU PIR.
- Wall sandwich panels must be fixed directly to the supporting structure.
- Use JF3-2-5.5x25-E16 fasteners to secure the system rails to the outer facing of the sandwich panels

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Adamietz S.A., the manufacturer of ARPANEL SKIN sandwich panels, assumes no responsibility for any differences between the actual parameters and the content of this brochure.

The manufacturer reserves the right to make corrections and changes in the content of this publication without prior notice.

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