



AQUAPANEL®

AQUAPANEL® ***EXTERIOR SYSTEMS***

Knauf Exterior Solutions with AQUAPANEL® Technology
for Indonesia

Build on us.

KNAUF

System introduction

AQUAPANEL® Exterior Systems are high-performance, economical and sustainable solutions for drylining style construction of exterior walls, claddings and ceilings.

AQUAPANEL® Exterior Wall comes in two basic types: drywall, or as a rear-ventilated rainscreen facade. It therefore offers an extremely flexible and adaptable solution which can accommodate an impressive range of designs, helping to turn vision into reality.

From external soffits, underpasses or open and underground car parks to exterior ceilings, our solution is engineered to withstand the most challenging wet conditions.

Outstanding protection against high humidity and moisture

The Systems are the perfect solutions for exterior walls, claddings and ceilings exposed to moisture, wind loading and coastal environments. The components are designed and tested to achieve the highest performance of construction.

AQUAPANEL® Cement Board Outdoor is water-resistant

and made of inorganic materials, which prevents mildew from forming and spreading.

Options for external finishes

Different external renders can be specified as a finish coat, offering options for texture and colours. The systems can also accommodate other materials, such as tiles.

Simple installation

As the components are light and easy to handle, it makes the installation easier, faster and more efficient.

Complete Knauf engineered solution backed by industry experts.

Our team of Engineers and Specification Managers will provide you with support throughout the project; from conceptual design, reviewing architectural drawings and site support to ensure optimum performance in design and construction.



AQUAPANEL® Exterior Systems deliver creativity and certainty from offices and high-rise residential accommodation through to hospitals and stadiums.

Markor Cave
Beijing, China

EXTERIOR WALL, CLADDINGS AND CEILINGS

Benefits

- Simple installation
- Easy to cut, score and snap
- No pre-drilling for fasteners
- Resistant to moisture and driving rain
- Mould and mildew-resistant
- Dimensionally stable, robust and durable
- Non-combustible (A1) - complies with European standards
- Creative design opportunities
 - › Options for the creation of curved exterior walls, claddings and ceilings
 - › Spectacular seamless surfaces thanks to expansion joints that are only needed every 15 m and enable a 225 m² closed area without a visible joint*
- Large choice of colours, textures and finishes with different external render systems

With Knauf AQUAPANEL® Exterior Systems, the exterior walls, claddings and ceilings are optimally protected against various types of weather effects, regardless of their location.

*A control/movement joint must be installed if there is a control/movement joint in the structure underneath.



Eagle in Flight
Tirana, Albania

Physical properties - AQUAPANEL® Cement Board Outdoor	
Length (mm)	2,400
Width (mm)	1,200
Depth (mm)	12.5
Min. bending radius for 1,200 mm wide board (m)	3
Min. bending radius for 300 mm wide strip (m)	1
Weight (kg/m ²)	approx. 16
Dry bulk density (kg/m ³) according to EN 12467	approx. 1,150
Bending strength (MPa) according to EN 12467	≥ 7
Tensile strength perpendicular to the plane of the board (N/mm ²) according to EN 319	0.65
Shearing strength (N) according to EN 520	607
pH-value	12
Thermal conductivity (W/mK) according to EN ISO 10456	0.35
Thermal expansion (10 ⁻⁶ K ⁻¹)	7
Water vapour diffusion coefficient μ (-) according to EN ISO 12572	66
Length variation 65% - 85% humidity (mm/m) according to EN 318	0.23
Thickness variation 65% - 85% humidity (%) according to EN 318	0.2
Building material class according to EN 13501	A1 non-combustible
Certificate of conformity (COC) according to BS 476-4:1970 (Singapore)	non-combustible
Fungus Resistance according to ASTM D3273-16	Rating 10 (0 defacement by mold growth)
Fungus Resistance according to ASTM G21-15	Rating 0 (No fungal growth)

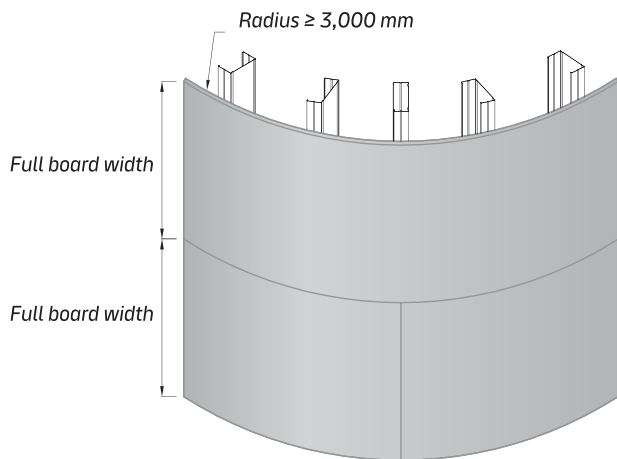
New design possibilities for curved walls

With a bending radius of 3 metres (full board) and 1 m (300 mm strips), AQUAPANEL® Cement Board Outdoor allows designers to introduce a variety of curved shapes and creative designs, including domes and arches. Moreover, by using double studs, it's possible to create different interiors and exteriors: for example, a wall that's concave on the outside, and convex on the inside.

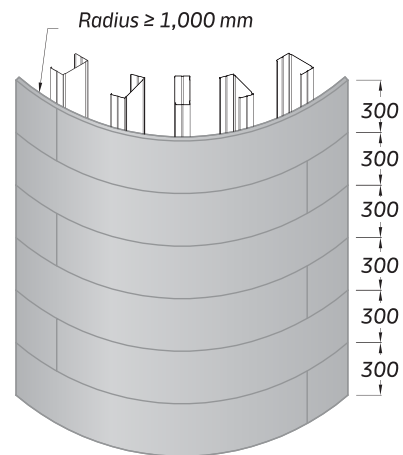


Lingang Warehouse
Shanghai, China

Arrangement of AQUAPANEL® Cement Board Outdoor with different radius



Assembly with full board size panels for radius $\geq 3,000$ mm



Assembly with 300 mm width panels for radius $\geq 1,000$ mm

DEDICATED SYSTEM SOLUTIONS

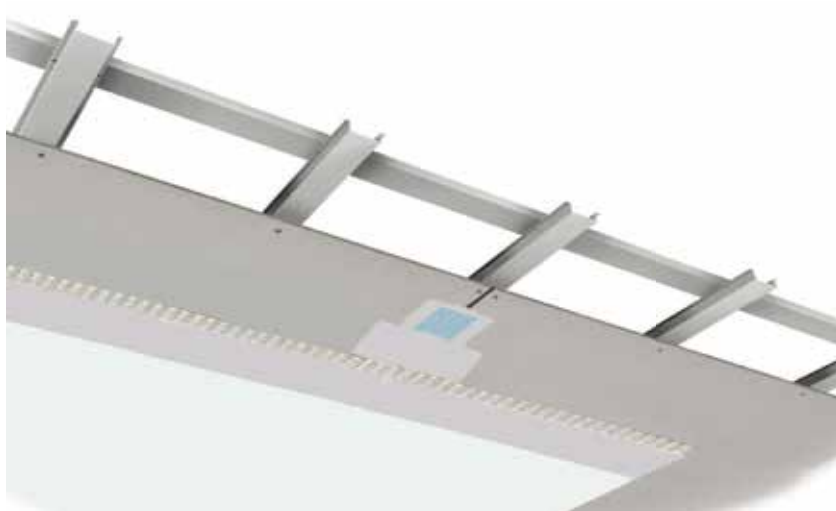
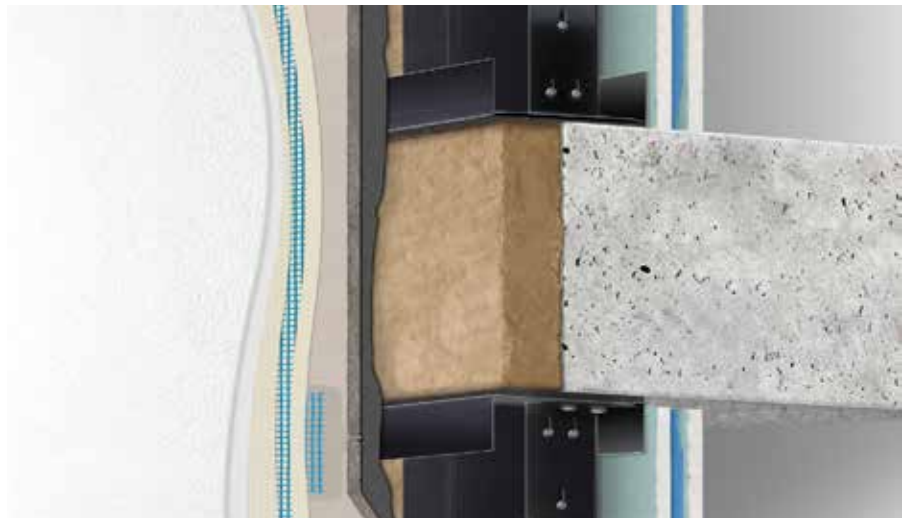


AQUAPANEL® Exterior Wall – rear-ventilated rainscreen facade

With rainscreen facades for use above solid substructures such as brick or concrete, thermal insulation is separated from the weather protection materials ensuring a constant flow of air in the ventilated space to remove moisture from the building and to optimise indoor climate. Even if the facade is damaged, the insulation remains intact.

AQUAPANEL® Exterior Wall – drywall solution

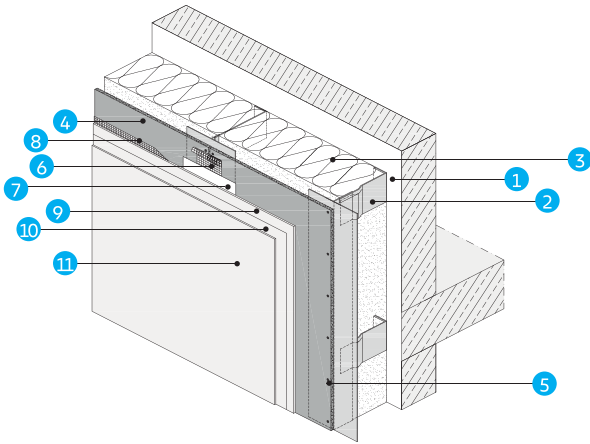
Drywall systems are available as single stud solutions with a variety of creative design options. And although it is most commonly used in skeleton constructions comprising reinforced concrete, drywall is also suitable for timber or lightweight steel-frame constructions.



AQUAPANEL® Exterior Ceiling

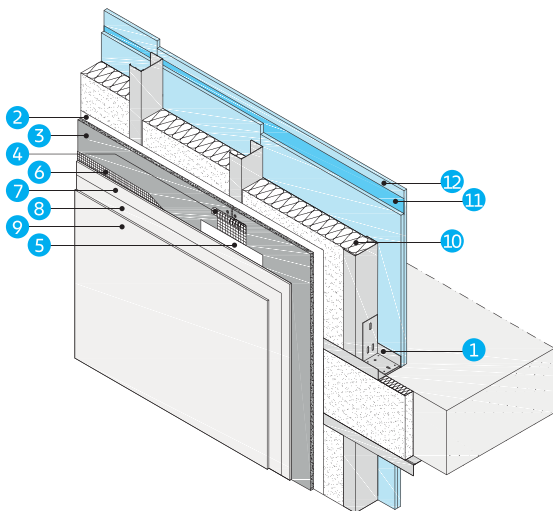
Ideal drylining solution for exterior ceilings such as soffits, undersides of balconies, underpasses and underground car parks with proven resistance to moisture or mildew forming and spreading. For greater safety and the highest standards in design, construction, cost-effectiveness and durability.

WL132C.1 Rear-ventilated rainscreen facade



- 1 Optional Thermal separation element
- 2 Steel substructure by others
- 3 Optional Insulation board according to local needs
- 4 AQUAPANEL® Cement Board Outdoor
- 5 AQUAPANEL® Maxi Screw or local equivalent
- 6 AQUAPANEL® Joint Tape (10 cm) or local equivalent
- 7 AQUAPANEL® Joint Filler – grey
- 8 AQUAPANEL® Reinforcing Mesh or local equivalent
- 9 AQUAPANEL® Exterior Basecoat
- 10 AQUAPANEL® Basecoat Primer or local equivalent if necessary
- 11 Render finish (e.g. AQUAPANEL® Exterior Mineral Finish – white)

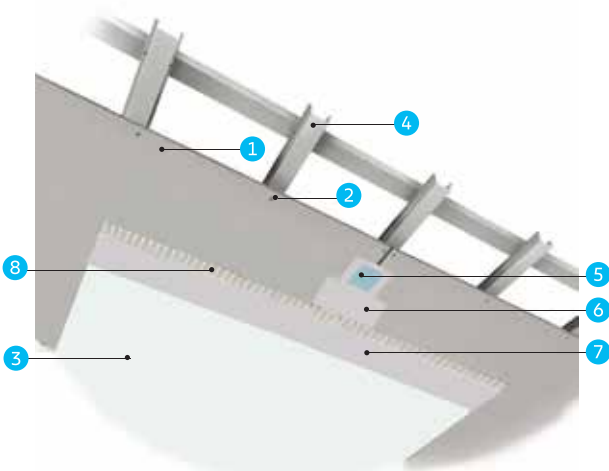
WM111C.1 Single stud exterior wall



- 1 Steel substructure by others
- 2 Vapour Barrier SD $\geq 50\text{m}$ according to the EN 13984*
- 3 AQUAPANEL® Cement Board Outdoor
- 4 AQUAPANEL® Joint Tape (10 cm) or local equivalent
- 5 AQUAPANEL® Joint Filler – grey
- 6 AQUAPANEL® Reinforcing Mesh or local equivalent
- 7 AQUAPANEL® Exterior Basecoat
- 8 AQUAPANEL® Basecoat Primer or local equivalent if necessary
- 9 Render finish (e.g. AQUAPANEL® Exterior Mineral Finish – white)
- 10 Insulation board (thickness: 100 mm) according to local needs
- 11 Vapour Barrier: Knauf Insulation LDS 10 silk or similar (SD 5-10 m according to EN 13984)*
- 12 Gypsum board

**Note: Please be advised that under the local climate condition the vapour barrier specifications at the exterior and interior side of the wall to prevent accumulation of moisture within the wall construction could vary. Location and type of vapour barrier to be determined by the architect and a building physics expert.*

D 282.1 Ext. Indonesia Exterior ceiling



- 1 AQUAPANEL® Cement Board Outdoor
- 2 AQUAPANEL® Maxi Screws or local equivalent
- 3 Paint or render system by others
- 4 Steel substructure by others
- 5 AQUAPANEL® Joint Tape (10 cm) or local equivalent
- 6 AQUAPANEL® Joint Filler – grey
- 7 AQUAPANEL® Exterior Basecoat
- 8 AQUAPANEL® Reinforcing Mesh or local equivalent

EXTERIOR PROJECTS



Lingang Warehouse
Shanghai, China



Markor Cave
Beijing, China



Mercedes Showroom
Ypres, Belgium



Starbucks Daecheon Beach
South Korea

Indonesia Exterior Projects

Project Name	Completed Year	City/Area	Building Type	Architect
Ciputra Golf Club & Resort Chapel	2008	Surabaya	Public Building (Commercial)	n/a
Verde II Apartments	2018	Jakarta	Residential (Apartment)	Johnson Fain
All Nite & Day Hotel	2019	Jakarta	Hotel	n/a
JCO Batu Ceper	2021	Tangerang	Public Building (Commercial)	Modern Space Design
Pitu Rooms	2021	Salatiga	Hotel	Aboday Design
Clinic at Sunset Road	2022	Bali	Healthcare	StudioKAS
Katta Indonesia	2022	Jakarta	Office / Commercial	Studio Tonton
Pavilion Z-Line	2022	Semarang	Residential	RSI Group
Dewa United Basecamp	2023	Tangerang Selatan	Sport	PDW Architects
SCK (Sekolah Citra Kasih) Jakarta	2023	Jakarta	Public Building (Education)	KsAD

Note: Richeese Factory Outlets have trusted AQUAPANEL® applied on the facades of their 30+ restaurants. In 2024, Richeese Factory continued using AQUAPANEL® boards for their 70+ restaurants.



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