

**AQUAPANEL®**

*Cement Board*

## Interior Systems



*Build on our strength*



# AQUAPANEL® Cement

AQUAPANEL® Cement Board technology has already revolutionised the design and construction of buildings throughout Europe. Developed by Knauf USG Systems, AQUAPANEL® Cement Board Indoor gives architects and contractors a proven tile backing board that offers significant performance advantages when used in wet and humid areas.

AQUAPANEL® Cement Board Indoor is 100 % water-resistant and offers a solid and durable tile substrate in damp and wet rooms, such as home bathrooms, public showers, kitchens, swimming pools and commercial areas. The cement board panels are easy to install and bring productivity gains.



## Benefits of AQUAPANEL® Cement Board Indoor:

### The ideal tile backing board for wet and humid areas

- A major advance in cement board technology
- 100% water-resistant – no swelling or disintegration or damage
- Resistant to mould and mildew
- Only one single layer of cement board required for ceramic coverings
  - Supports up to 50 kg of tiling per square metre of wall
- Resistant to deflection and impact
- Stable and strong Portland cement construction
- Non-combustible

### Productivity benefits

- Eliminates time-consuming specialised construction methods and materials
- Ready-keyed for tiling; normally no sealant required
- Unique score and snap for faster, easier installation
- The unique EasyEdge™ straight edge improves adhesion between the AQUAPANEL® boards when using polyurethane joint adhesives. The result is a stable construction.
- Dry installation technology saves time spent on job site
- Less working time required, lower on-site costs
- Lower consultancy costs

### A complete system

- Meets European industry norms
- Full service and support across Europe
- Proven complete systems from a single source

*Innovation in ceme*

# Board Indoor

## Interior systems



### Knauf USG Systems – leading the way

AQUAPANEL® Cement Board Indoor is a proven system manufactured by Knauf USG Systems, which offers significant performance advantages in all types of buildings. Knauf USG Systems is a joint venture between Knauf and USG, two leading and well-established suppliers of interior and exterior systems and building materials.

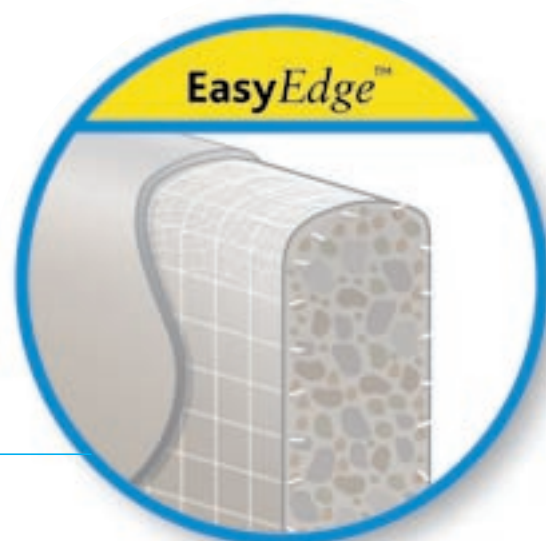
As a leading supplier of cement board systems in Europe, Knauf USG Systems is committed to developing innovative building materials. AQUAPANEL® Cement Board is now being used all over Europe and is the cement board of choice for construction professionals in interior, exterior and flooring applications.

This brochure explains AQUAPANEL® Cement Board Indoor in detail, allowing you to achieve perfect end results whenever you use it.

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*The EasyEdge™ strong, straight edge is wrapped with a mesh that is embedded into the cement board for extra strength. EasyEdge™ ensures easy joint treatment using polyurethane joint adhesive, resulting in a stronger structure.*



nt board

## Approved accessories: Walls



### AQUAPANEL® Cement Board Indoor

Aggregated Portland cement board with coated glass fibre mesh embedded in back and front surfaces. The ends are square cut and the edges reinforced and finished smoothly (EasyEdge™).

**Thickness:** 12.5 mm  
**Width:** 900 mm  
**Length:** 1200, 2400, 1250, 2500 mm  
**Weight:** approx. 15 kg/m<sup>2</sup>  
**Packaging:** 1200/1250 mm length: 50 pieces/pallet  
 2400/2500 mm length: 25 pieces/pallet  
**Building material category:** A1



### AQUAPANEL® Maxi Screw AQUAPANEL® Maxi Screw 25 AQUAPANEL® Maxi Screw 55

AQUAPANEL® Maxi Screws have been specially developed for fixing AQUAPANEL® Cement Board on to timber and metal frameworks (metal thickness from 0.6 to 0.7 mm). These screws have a needle point and a special corrosion-proof coating, which gives a guaranteed 500 hours corrosion resistance in a salt spray test.

AQUAPANEL® Maxi Screw is suitable for a single or double layer of boards on a metal framework or a single-layer panel on a wooden framework.

AQUAPANEL® Maxi Screw 25 can be used for a single-layer panel on a metal framework.

AQUAPANEL® Maxi Screw 55 can be used for a double layer of boards on a wooden framework or for a triple layer of boards on a metal framework.

**Coverage:**  
 15 pieces/m<sup>2</sup>, stud spacing 300/312,5 mm  
**Packaging:**  
 AQUAPANEL® Maxi Screw: 500 pieces/pack  
 AQUAPANEL® Maxi Screw 25: 1000 pieces/pack  
 AQUAPANEL® Maxi Screw 55: 250 pieces/pack  
 Collated screws available on request.



### AQUAPANEL® Maxi Screw with Drill Point AQUAPANEL® Maxi Screw 25 with Drill Point

AQUAPANEL® Maxi Screws have been specially developed for fixing AQUAPANEL® Cement Board on to metal frameworks (metal thickness from 0.8 to 2 mm). The screws have a drill point and a special corrosion-proof coating, which gives a guaranteed 500 hours corrosion resistance in a salt spray test.

AQUAPANEL® Maxi Screw with Drill Point is suitable for a single or double layer of boards.

AQUAPANEL® Maxi Screw 25 with Drill Point can be used for a single layer of boards.

**Coverage:**  
 15 pieces/m<sup>2</sup>, stud spacing 300/312,5 mm  
**Packaging:**  
 AQUAPANEL® Maxi Screw with Drill Point: 250 pieces/pack  
 AQUAPANEL® Maxi Screw 25 with Drill Point: 250 pieces/pack  
 Collated screws available on request.



### AQUAPANEL® Joint Adhesive (PU)

AQUAPANEL® Joint Adhesive (PU) is used to bond individual AQUAPANEL® Cement Board Indoor panels.

**Coverage:** approx. 50 ml/m<sup>2</sup> (approx. 6.5 m<sup>2</sup> per cartridge)  
**Packaging:** 310 ml/cartridge  
 20 cartridges/carton



### AQUAPANEL® Interior Primer

AQUAPANEL® Interior Primer is a ready-to-use synthetic dispersion for priming AQUAPANEL® Cement Board Indoor panels to provide maximum adhesion of tiles and plasters.

**Coverage:** approx. 40 - 60 g/m<sup>2</sup>  
**Dilution:** 1: 2 with water  
**Packaging:** 15 l/bucket  
 2.5 l/bucket

# accessories



## AQUAPANEL® Q4 Finish

AQUAPANEL® Q4 Finish is a ready-to-use and water-repellent skim coat for high-quality finely finished surfaces up to Q4 standard.

Application: Above the tiled area or as an all-over skim coating over AQUAPANEL® Joint Filler and Skim Coating – White and AQUAPANEL® Interior Reinforcing Mesh.

Coverage: approx. 1.7 kg/m<sup>2</sup>/mm coating depth

Packaging: 20 kg/bucket

**Note:** For joint reinforcement, use Knauf glass fibre cover strips.



## AQUAPANEL® Joint Filler and Skim Coating - White

AQUAPANEL® Joint Filler and Skim Coating – White is a cement-bound material for skim coating the AQUAPANEL® Cement Board Indoor beyond the tiled area. AQUAPANEL® Interior Reinforcing Mesh must be embedded.

Coverage: approx. 3.5 kg/m<sup>2</sup>  
Minimum layer thickness 4 mm

Packaging: 10 kg/bag

**Note:** Machine processing is possible with PFT RiTMO (230V) (A3-2L pump unit, SWiNG sprayer, LK 402 air compressor)



## AQUAPANEL® Interior Reinforcing Mesh

AQUAPANEL® Interior Reinforcing Mesh is a glass fibre fabric used to reinforce AQUAPANEL® Joint Filler and Skim Coating - White.

Coverage: approx. 1.1 m<sup>2</sup>/m<sup>2</sup>

Packaging:  
100 cm wide roll, 50 m long  
30 rolls/carton

## Additional accessories



## AQUAPANEL® Traverse

AQUAPANEL® Traverses are used for attaching light console loads to walls constructed from AQUAPANEL® Cement Board Indoor.

Axis frame dimensions:

600/625 mm

Height: approx. 290 mm

Plate thickness: 0.75 mm with special corrosion protection layer

M type: Without impregnated wood packing

MH type: With core-impregnated MDF filler, approx. 18 mm thick



## AQUAPANEL® Access Panels

AQUAPANEL® Access Panels are protected against water spray and can be installed in partition and plumbing walls as well as in ceilings.

Sizes: 300 x 300 mm  
400 x 400 mm, 500 x 500 mm

Other sizes (e.g. tile dimension) available on request.

Please indicate application details when ordering.

## Approved accessories: Ceilings



### AQUAPANEL® Cement Board Indoor

Aggregated Portland cement board with coated glass fibre mesh embedded in back and front surfaces. The ends are square cut and the edges reinforced and finished smoothly (EasyEdge™).

**Thickness:** 12.5 mm  
**Width:** 900 mm  
**Length:** 1200, 2400, 1250, 2500 mm  
**Weight:** approx. 15 kg/m<sup>2</sup>  
**Packaging:** 1200/1250 mm length: 50 pieces/pallet  
 2400/2500 mm length: 25 pieces/pallet  
**Building material category:** A1



### AQUAPANEL® Maxi Screw AQUAPANEL® Maxi Screw 25 AQUAPANEL® Maxi Screw 55

AQUAPANEL® Maxi Screws have been specially developed for fixing AQUAPANEL® Cement Board on to timber and metal frameworks (metal thickness from 0.6 to 0.7 mm). These screws have a needle point and a special corrosion-proof coating, which gives a guaranteed 500 hours corrosion resistance in a salt spray test.

AQUAPANEL® Maxi Screw is suitable for a single or double layer of boards on a metal framework or a single-layer panel on a wooden framework.

AQUAPANEL® Maxi Screw 25 can be used for a single-layer panel on a metal framework.

AQUAPANEL® Maxi Screw 55 can be used for a double layer of boards on a wooden framework or for a triple layer of boards on a metal framework.

**Coverage:**  
 25 pieces/m<sup>2</sup>, stud spacing 300/312,5 mm  
**Packaging:**  
 AQUAPANEL® Maxi Screw: 500 pieces/pack  
 AQUAPANEL® Maxi Screw 25: 1000 pieces/pack  
 AQUAPANEL® Maxi Screw 55: 250 pieces/pack  
 Collated screws available on request.



### AQUAPANEL® Maxi Screw with Drill Point AQUAPANEL® Maxi Screw 25 with Drill Point

AQUAPANEL® Maxi Screws have been specially developed for fixing AQUAPANEL® Cement Board on to metal frameworks (metal thickness from 0.8 to 2 mm). The screws have a drill point and a special corrosion-proof coating, which gives a guaranteed 500 hours corrosion resistance in a salt spray test.

AQUAPANEL® Maxi Screw with Drill Point is suitable for a single or double layer of boards.

AQUAPANEL® Maxi Screw 25 with Drill Point can be used for a single layer of boards.

**Coverage:**  
 25 pieces/m<sup>2</sup>, stud spacing 300/312,5 mm  
**Packaging:**  
 AQUAPANEL® Maxi Screw with Drill Point: 250 pieces/pack  
 AQUAPANEL® Maxi Screw 25 with Drill Point: 250 pieces/pack  
 Collated screws available on request.



### AQUAPANEL® Interior Tape (for ceiling applications only)

AQUAPANEL® Interior Tape is a glass fibre tape with an alkali-resistant coating. AQUAPANEL® Interior Tape is used to reinforce joints in interior ceiling applications. It is embedded into the AQUAPANEL® Joint Filler – Grey or AQUAPANEL® Joint Filler and Skim Coating – White.

**Coverage:** approx. 2.1 m/m<sup>2</sup>  
**Packaging:**  
 10 cm wide roll, 50 cm long  
 20 rolls/carton



### AQUAPANEL® Joint Filler – Grey (for ceiling applications only)

AQUAPANEL® Joint Filler – Grey is a cement-bound filling material for setting AQUAPANEL® Interior Tape for ceiling applications.

**Coverage:** approx. 0.7 kg/m<sup>2</sup>  
**Packaging:** 10 kg/bag

# accessories



## AQUAPANEL® Interior Primer

AQUAPANEL® Interior Primer is a ready-to-use synthetic dispersion for priming AQUAPANEL® Cement Board Indoor panels to provide maximum adhesion of tiles and plasters.

**Coverage:** approx. 40 - 60 g/m<sup>2</sup>

**Dilution:** 1: 2 with water

**Packaging:**

15 l/bucket

2.5 l/bucket



## AQUAPANEL® Joint Filler and Skim Coating - White

AQUAPANEL® Joint Filler and Skim Coating – White is a cement-bound material for skim coating the AQUAPANEL® Cement Board Indoor beyond the tiled area. AQUAPANEL® Interior Reinforcing Mesh must be embedded.

**Coverage:** approx. 3.5 kg/m<sup>2</sup>

**Minimum layer thickness** 4 mm

**Packaging:** 10 kg/bag

**Note:** Machine processing is possible with PFT RiTMO (230V) (A3-2L pump unit, SWiNG sprayer, LK 402 air compressor)



## AQUAPANEL® Interior Reinforcing Mesh

AQUAPANEL® Interior Reinforcing Mesh is a glass fibre fabric used to reinforce AQUAPANEL® Joint Filler and Skim Coating - White.

**Coverage:** approx. 1.1 m<sup>2</sup>/m<sup>2</sup>

**Packaging:**

100 cm wide roll, 50 m long

30 rolls/carton



## AQUAPANEL® Q4 Finish

AQUAPANEL® Q4 Finish is a ready-to-use and water-repellent skim coat for high-quality finely finished surfaces up to Q4 standard.

**Ceiling use:** Only use as all-over white skim coat on top of AQUAPANEL® Joint Filler and Skim Coating – White and AQUAPANEL® Interior Reinforcing Mesh.

**Coverage:** approx. 1.7 kg/m<sup>2</sup>/mm coating depth

**Packaging:** 20 kg/bucket

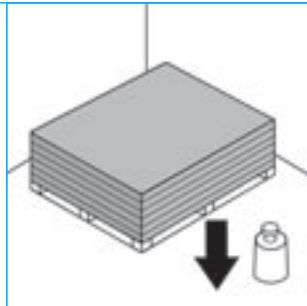
# Processing

## Transportation and storage

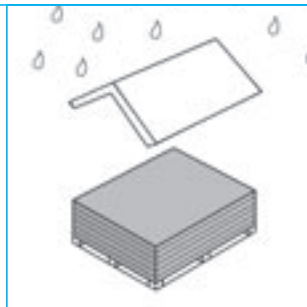
Always carry the boards upright, or transport them using a stacker truck or board truck. Take care not to damage corners and edges when setting them down.



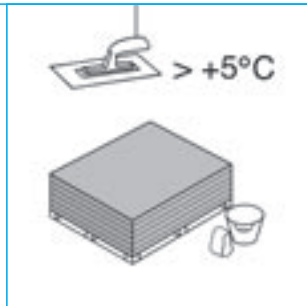
Ensure that the base is strong enough to support the boards. One pallet of AQUAPANEL® Cement Board Indoor applies a weight of approximately 870 kg/pallet to the floor (product as delivered).



AQUAPANEL® Cement Board Indoor must be protected from damp and weathering before installation. Where boards have become damp, they must be dried on both sides on a flat surface prior to fitting.

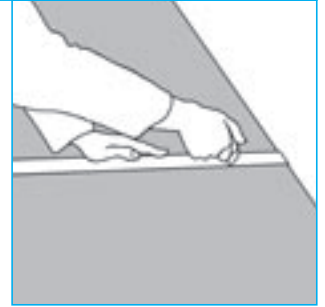


Before installing, condition the boards to the ambient temperature and humidity. The ambient air and component temperatures may not be below +5 °C. Materials for priming or coating must not be applied in temperatures of less than + 5° C.



## Formatting

To cut AQUAPANEL® Cement Board Indoor, mark the desired size on the board with pencil and ruler. Score one side with a knife cutting through the mesh. Snap the board along the score. Then cut the mesh on the rear side.

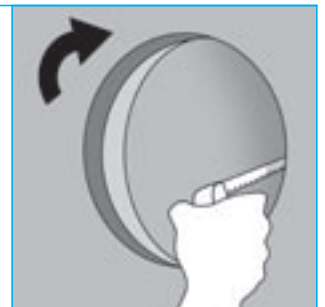


Sharp cut surfaces, for example exterior edges, may be made using a hand-held circular saw with a dust extractor, or a pendulum compass saw. Use of a carbide or diamond-tipped saw blade is recommended.



## Cut-outs

Cut-outs (e.g. for cables or pipes) are made with a jigsaw or compass saw. The diameter of the opening must be approx. 10 mm greater than the diameter of the pipe. The remaining gap can be closed with a collar, building silicon or joint filler and skim coat.

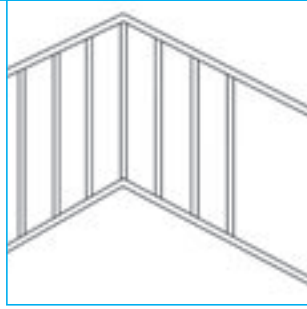




# Installation

## 1. Post profiles

1.1 AQUAPANEL® Cement Board Indoor can be mounted on a wall framework made from either metal or wooden profiles.



1.2 The connection profile on either side must be coated with partition wall putty or sealing tape. Rotary pin dowels or other fasteners are used to secure the profiles to the walls.

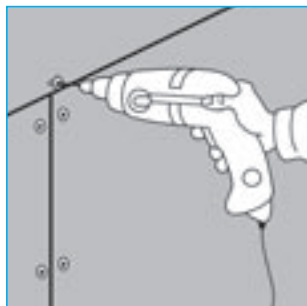
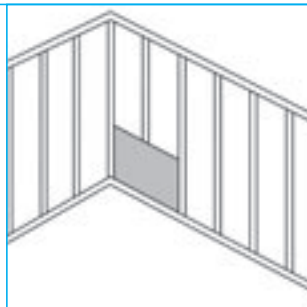


1.3 Mark out the path of the AQUAPANEL® Cement Board Indoor wall. All runners are fastened to the floor and ceiling. Profiles are cut to length and then spaced 62.5 (60) cm apart. Set and align these profiles with the floor and ceiling profiles. Connect the wall connection studs to the end walls on either side.



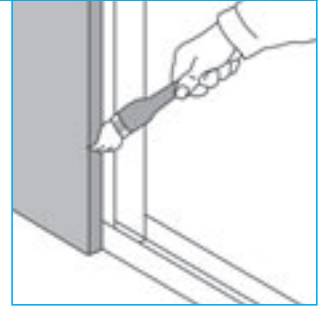
## 2. Align the board

Align the first AQUAPANEL® Cement Board Indoor panel along the profiles. Ensure that the board is aligned correctly horizontally and vertically using a spirit level. Screw spacing to be  $\leq 250\text{mm}$ . Distance from edges  $\geq 15\text{mm}$ . *Do not overdrive fasteners.*



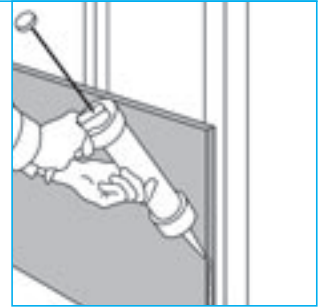
## 3. Clean the edge of the board

In order to ensure a good connection with the AQUAPANEL® Joint Adhesive (PU), clean the edges of the board using, for example, a wet brush.

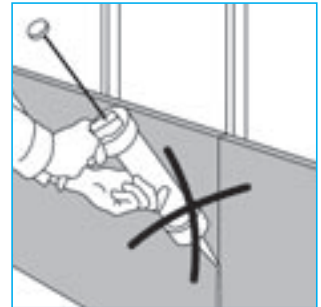


## 4. Apply the joint adhesive

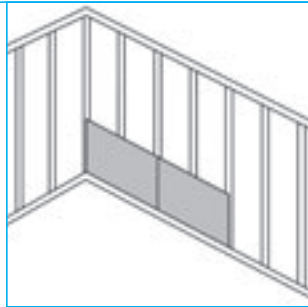
4.1 Apply the AQUAPANEL® Joint Adhesive (PU).



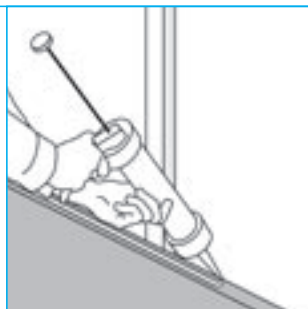
This must be done before the next board is placed.



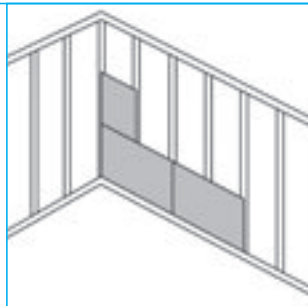
**4.2** Insert the AQUAPANEL® Cement Board Indoor into the bed of adhesive. Screw panel to the framework. Joint reinforcement of the AQUAPANEL® Cement Board Indoor panel is achieved by means of the adhesion technique. There is no need for the time-consuming process of filling and inserting joint tape.



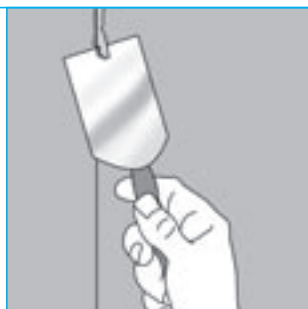
**4.3** The AQUAPANEL® Joint Adhesive (PU) must be applied as a continuous bead along the edges of the boards. Before applying the adhesive, ensure that the edges are cleaned using, for example, a wet brush. It takes approximately 50ml/m<sup>2</sup> (25ml/m). The tube contains enough adhesive for approximately 6m<sup>2</sup>.



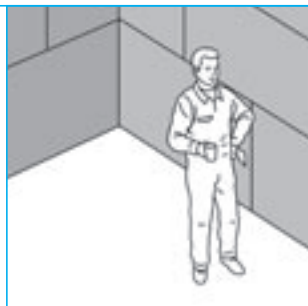
**5. Place next board**  
Install the next AQUAPANEL® Cement Board Indoor panel and ensure that the boards are correctly aligned horizontally and vertically. Screw panel to the framework.



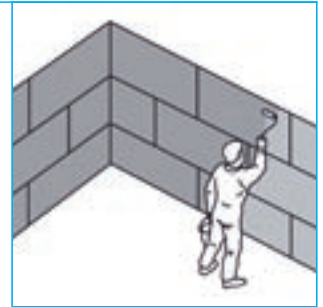
**6. Scraping off**  
Leave the adhesive to harden after which the excess AQUAPANEL® Joint Adhesive (PU) can be scraped off (usually the next day).



**7. Completed wall**  
The joints between the walls, ceiling and floor require permanent elastic sealing in dry areas. Expansion joints should be at a minimum of 7.5 (7.2) m intervals.



**8. Priming**  
AQUAPANEL® Cement Board Indoor must be primed before tiling or finishing using AQUAPANEL® Interior Primer.



## Curved walls

For applications such as arches AQUAPANEL® Cement Board Indoor can be curved.

Using metal shears, cut the UW-profile.

Fit the UW-profile to the desired radius.

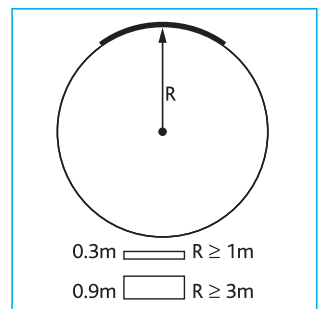
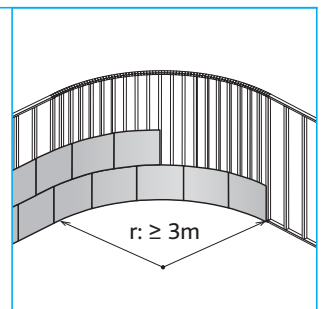
Crimp the CW-profile to the perforated UW-profile.

Before installation, bend the cement board panel. The fine cracks that occur on the board surface will not cause any loss of performance.

Board size:  
1200/2400/1250/2500 x 900 mm  
Minimum bending radius  $\geq 3$  m

Strip size:  
1200/2400/1250/2500 x 300 mm  
Minimum bending radius  $\geq 1$  m

Max. stud spacing:  
 $\leq 300/312.5$  mm (external radius)



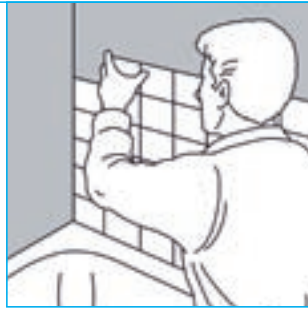
# Surface finishing

## Tiling

For ceramic tile coverings, (tile dimensions  $\leq 300 \times 300$  mm), use a flexible adhesive when placing tiles. The tile adhesive must - as a minimum - meet the requirements of class C2 according to EN 12004.

### Note:

Where single-layer panels are required in tiling applications, AQUAPANEL® Cement Board Indoor is the best tile backing board!



## Painting

The majority of common painting systems can be used. These include water-based emulsions, matt enamels, polymer resin colours, and epoxy-based enamels.

Alkyd enamels are not compatible with the product.

For confirmation of usage, please refer to the paint manufacturers' instructions. A test coat is recommended.

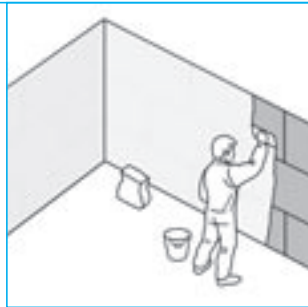
For surface finishes up to Q4, apply AQUAPANEL® Q4 Finish over the entire pre-prepared (filled and reinforced) surface. Refer to pages 12-13.

After drying, do any re-finishing with an electric orbital sander (grade 120 or finer).

## Finishing

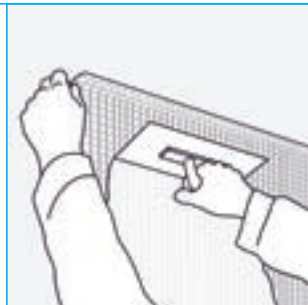
### Skim coating

AQUAPANEL® Cement Board Indoor can be prepared for painting by coating it fully with AQUAPANEL® Joint Filler and Skim Coating – White (minimum coating depth 4 mm).



### Reinforcing

Apply AQUAPANEL® Interior Reinforcing Mesh and embed it in the skim coat with a trowel.



### Finishing

For a smooth finish, apply a thin layer of AQUAPANEL® Joint Filler and Skim Coating - White. When dry, the surface can be painted.



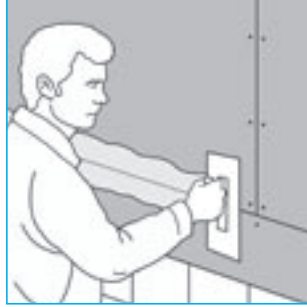
# Surface finishing

## Coating above the tiled section up to Q4 quality

For fine finishing to a Q4 surface quality, use AQUAPANEL® Q4 Finish ready-to-use skim coat.

### Embedding joint ceiling strips

Using a 15 cm wide stainless steel finishing trowel, apply AQUAPANEL® Q4 Finish to the visible joints which have been bonded with AQUAPANEL® Joint Adhesive (PU). Embed the glass fibre joint cover strips (e.g. Knauf glass fibre joint cover strips) into the centre of the paste so that they overlap the joints. Apply a thin layer of AQUAPANEL® Q4 Finish to the cover strips. Remove excess material.



### Note:

AQUAPANEL® Cement Board Indoor is already glued using AQUAPANEL® Joint Adhesive (PU).

### Embed fastener heads

Fill all screw heads. If necessary, after drying, use a hand sander to remove irregularities from the screw holes.



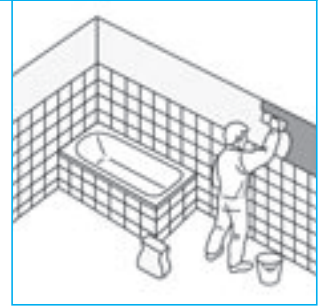
### Smoothing over joints and fasteners

Sand away all surface unevenness. Apply AQUAPANEL® Q4 Finish to a width of at least 20 cm (5 cm beyond the edge of the first layer). Embed fastener heads and sand down any uneven areas.



### Full surface skim coating

Apply AQUAPANEL® Q4 Finish to completely cover the untiled areas using a 20 cm wide finishing trowel. Apply the filler solidly to fill in uneven areas in the joints and smooth the surface texture. If necessary, sand down with paper. If a Q4 surface quality is required, apply a further layer of AQUAPANEL® Q4 Finish. After approx. 24 hours drying, sand with abrasive paper (grade 120 or finer). For particularly smooth surfaces, sand down with, for example, an electric orbital sander.



### Coating

Depending on the intended use and requirements, water emulsion paints, emulsion silicate paints or latex paints can be used.

### Note:

The tiled section of the wall should be > 50% of the total height of the wall.

Not suitable for areas subject to water spray!

# Quality levels of plastered surfaces

## Q1-Q4

This describes filling of AQUAPANEL® Cement Board Indoor with AQUAPANEL® Joint Filler and Skim Coating - White and AQUAPANEL® Q4 Finish in accordance with the information sheet "Interior area plaster surfaces (smooth plaster)" from the Deutschen Stuckgewerbebund in the Central German Contractors Federation.

**Q1** No requirements such as optical characteristics or flatness for the surface of the plaster. A closed plaster area is sufficient.

**Q2** This surface corresponds to the standard quality and meets the usual requirements for wall and ceiling areas.

Suitable plaster surface for:

- decorative finish coat  $\geq 1$  mm
- medium to large structured wall covering e.g. rough-textured wallpaper
- flat, filled coats/layers

**Q3** Increased requirements for smoothness. In addition to the requirements for Q2, a second thin filler coat is necessary.

Suitable plaster surface for:

- decorative finish coat  $\leq 1$  mm
- finely structured wall covering
- flat, finely structured coats/layers

**Q4** The highest requirements for flatness of plaster surfaces. Minimum requirements as Q3, plus all-over reworking of the surface using a suitable filler or smooth finishing material.

Suitable plaster surface for:

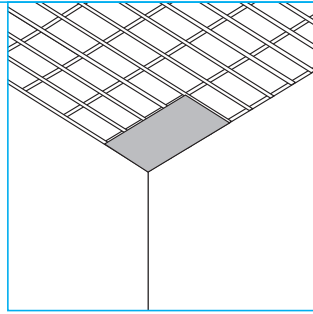
- smooth or structured wall covering with gloss, e.g. metal, vinyl wallpaper
- natural finish or coats/layers up to medium gloss
- filling and smoothing techniques.

### Quality levels of plastered surfaces with AQUAPANEL® Joint Filler & Skim Coating - White and AQUAPANEL® Q4 Finish

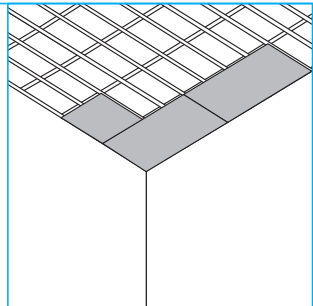
	Whole wall	Area above the tiles
<b>Q1</b>	AQUAPANEL® Interior Primer + full surface finishing with AQUAPANEL® Joint Filler & Skim Coating - White including AQUAPANEL® Interior Reinforcing Mesh.	
<b>Q2</b>	Q1 + thin surface finishing with AQUAPANEL® Joint Filler & Skim Coating - White	
<b>Q3</b>	Q2 + sanding	AQUAPANEL® Interior Primer + joints with glass fibre joint cover strips embedded + full surface finishing with AQUAPANEL® Q4 Finish + sanding.
<b>Q4</b>	Q2 + optional sanding + AQUAPANEL® Q4 Finish + sanding	Q3 + thin surface finishing with AQUAPANEL® Q4 Finish + sanding

# Installation of ceilings

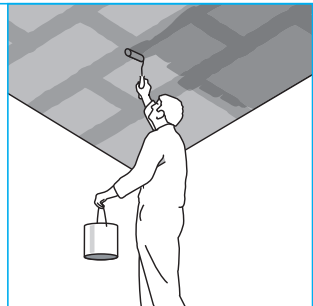
Align the first AQUAPANEL® Cement Board Indoor panel carefully, perpendicular to the supporting profile. Screw the panel to the framework using AQUAPANEL® Maxi Screws (material requirement 25 pcs/m<sup>2</sup>). The centre space between the supporting profiles is 300/312.5 mm.



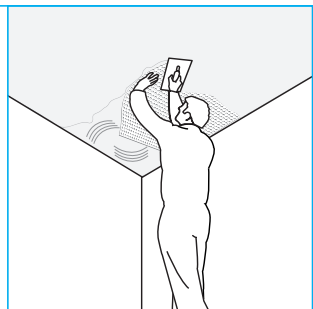
Leave a gap between joints of at least 3-4 mm. Make sure all joints are staggered. After installation, joints should be filled in with AQUAPANEL® Joint Filler – Grey with the 10 cm wide AQUAPANEL® Interior Tape embedded into the filler. Fill all screw heads.



Prime the surface over using AQUAPANEL® Interior Primer (primer/water 1.2).



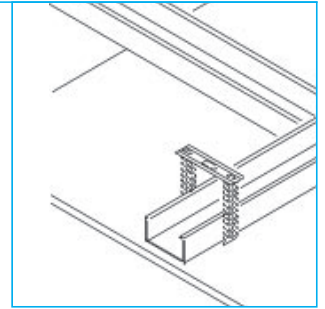
Use AQUAPANEL® Joint Filler and Skim Coating – White to coat the panels to at least 4 mm depth all-over, and embed the AQUAPANEL® Interior Reinforcing Mesh.



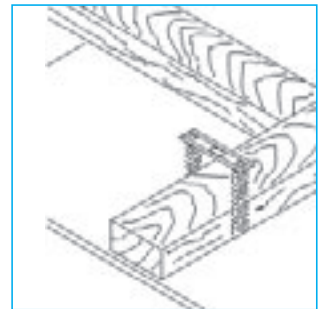
For fine finishing up to Q4 surface quality, use AQUAPANEL® Q4 Finish on the AQUAPANEL® Joint Filler and Skim Coating – White.

## Special notes

In rooms with continuous high humidity levels such as commercial kitchens, swimming pools, saunas or chemical laboratories, it is necessary to provide improved corrosion protection for the metal framework.



When cutting AQUAPANEL® Cement Board, the distance of the screws from the board edge must be  $\geq 15$  mm. The distance between screws must be  $\leq 250$  mm.



Fasten the hanger of the framework with suitable, building authority approved ceiling pins e.g. Type KDM Kunkel ceiling pin or MKT anchor bolt B6 material 1.4529.

We recommend that expansion joints are included at maximum 15 m intervals. Align with the expansion joints in the background if practical.

For details on ceiling systems, see page 42 and following pages.

*The ideal tile backing board for wet and humid areas*



# Moisture protection

## Moisture protection with AQUAPANEL® Cement Board Indoor

Dampness is the principal cause of structural damage. Water appears in a construction as:

- Standing and flowing water
- Capillary water
- Dripping water
- High relative air humidity

In many areas of the construction, the ability to withstand damp and water is critical for the quality and durability of a building unit, for example, in all domestic and commercial wet areas, in laboratories, kitchens, swimming pools and saunas. Protection from damp is also important in cellars and garages because these building units are often at risk from masonry damp, ground damp, ground water or even flooding. Construction materials for these areas must meet a variety of requirements and display the following characteristics:

- Water resistance and dimensional stability of material
- Resistance to mould formation
- Moisture vapour permeability for optimum indoor climate

AQUAPANEL® Cement Board Indoor is the ideal building panel for such areas, as has been demonstrated by numerous tests:



### Water resistance value of AQUAPANEL® Cement Board Indoor

Material thickness	Weight:	Dry density	Water vapour diffusion resistance	Sd	Thermal conductivity
12.5 mm	15 kg/m <sup>2</sup>	1050 kg/m <sup>3</sup>	$\mu = 30$	0.375 m	0.3 W/m <sup>2</sup> K

AQUAPANEL® Cement Board Indoor is water-resistant. Under water impact, AQUAPANEL® Cement Board Indoor displays extremely slight and system-safe changes in form. The cement board changes neither its structural cohesion nor its static characteristics.

AQUAPANEL® Cement Board Indoor is resistant to mould growth and is therefore also suitable for use in areas where there is a high level of damp. This was confirmed by the Institute for Building Biology in Rosenheim in its report no. 3004 - 119 - 56A.

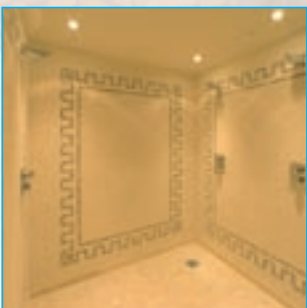
AQUAPANEL® Cement Board Indoor displays very good vapour diffusion behaviour with a diffusion resistance of  $\mu = 30$ . This ensures that the panel shows no vapour-blocking behaviour. This is of considerable importance for a built-up physically optimal layer composition, as highlighted by the Institute for Building Biology in Rosenheim in its report No. 3001 – 56.



Moisture protection



*The ideal tile backing board for wet and humid areas*



# Permitted console loads

## Permitted console loads

Light partition walls built with AQUAPANEL® Cement Board Indoor can accept console loads of different sizes. Should loads be inserted in double-layer walls, the stud rows must be connected together using consoles to ensure tensile strength. The size and geometry of the load must be monitored for all walls. A deciding size is the "load height", i.e. the distance of the load outer edge from the wall or the height of a hanging shelf or hanging cabinet. The following cases can be distinguished depending on the size and height of the load:

### • Light console loads up to 40 kg/metre wall length

Light console loads can be arranged on any position of the wall or facing panel. If the load is attached to the panel, the distance of the fastening points from each other must be at least 75 mm. Loads of up to 40 kg per metre wall length at a load height of 60 cm are considered light console loads. Loads can be increased if the load height is low.

#### Maximum size "light console loads" as a function of load depth b

Load depth (cm)	10	20	30	40	50	60
Permissible console load P (kg/metre wall length)	78	71	63	55	48	40

### • Other console loads of 40 to 70 kg/metre wall length

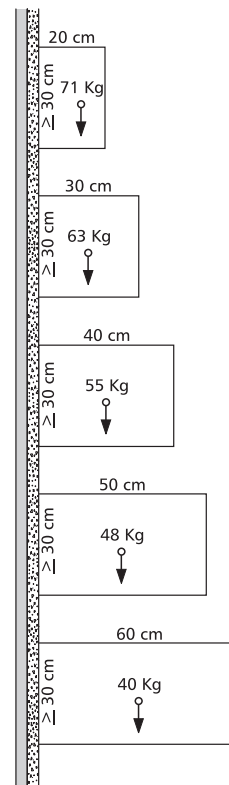
Other console loads can be attached in any position on a single or double stud installation with double-layer panelling of AQUAPANEL® Cement Board Indoor. With double stud walls, the stud rows must be fixed with consoles to ensure tensile strength. Loads of between 40 and 70 kg per metre wall length at a load height of 60 cm are considered medium console loads. Loads can be increased if the load height is low.

#### Maximum size "other console loads" as a function of load depth b

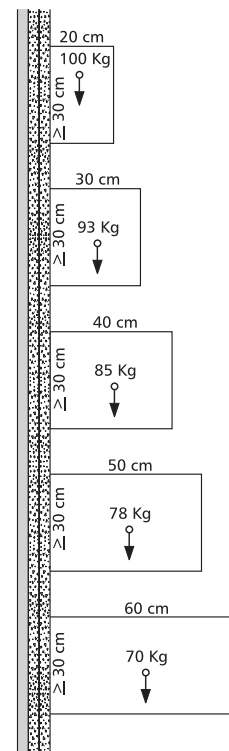
Load depth (cm)	10	20	30	40	50	60
Permissible console load P (kg/metre wall length)	107	100	93	85	78	70

### • Heavy console loads of 70 to 150 kg/metre wall length

Heavy console loads must be attached to special construction parts such as cross beams, console frames or cross member bracing. Cross beams and cross member bracings are directly linked to the framework so that the loads can be securely taken into the framework. Supporting frames are fastened to the framework depending on the type of construction but are generally anchored directly to the original floor.



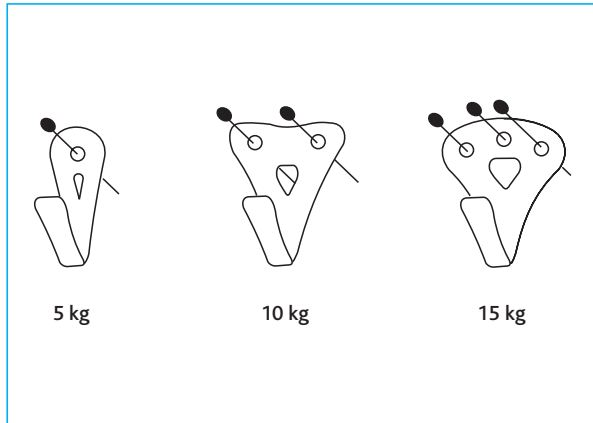
Light console loads



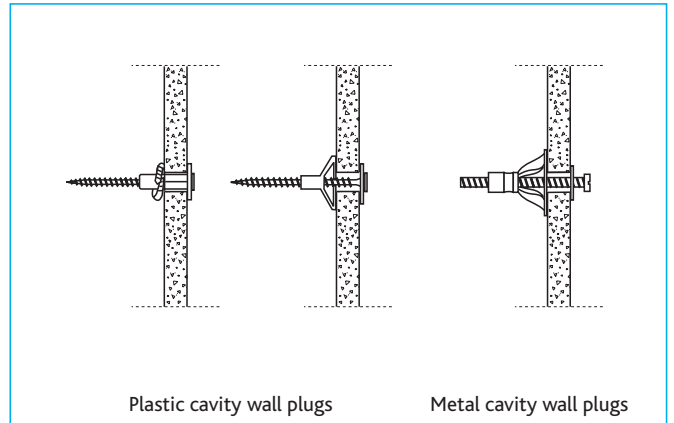
Other console loads

# Construction details

## Wall hooks



Hooks for light, flat objects up to 15 kg/m



Light and other bracket loads up to 70kg/m

## Securing loads to walls

### Flat loads

Loads up to 15 kg can be secured using simple hooks. Flat loads up to 50 kg are fastened using metal or plastic cavity wall plugs.

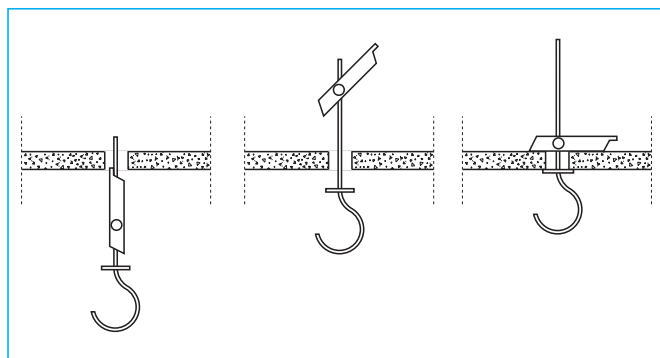
### Light and other bracket loads

Light and other bracket loads are secured using at least two plastic or metal cavity wall plugs. Plugs should be spaced more than 75 mm apart. See table.

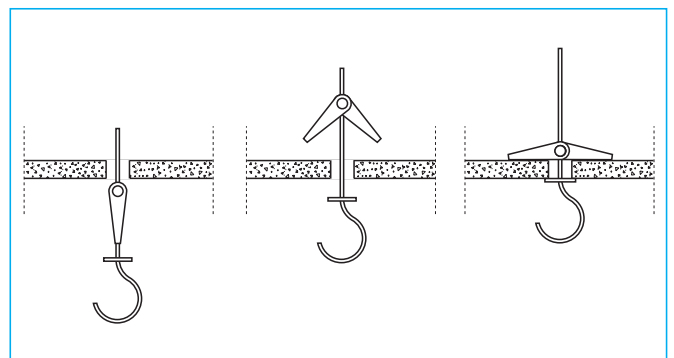
## Plug load-bearing capacity (kg) under pull and shear

Panel thickness (mm)	Plastic cavity wall plugs Ø 8 or Ø 10 mm	Metal cavity wall plug M5 or M6 screw
1 x 12.5	25 kg	30 kg
2 x 12.5	40 kg	50 kg

## Ceiling hooks



Tilting ceiling hooks



Spring toggle ceiling hooks

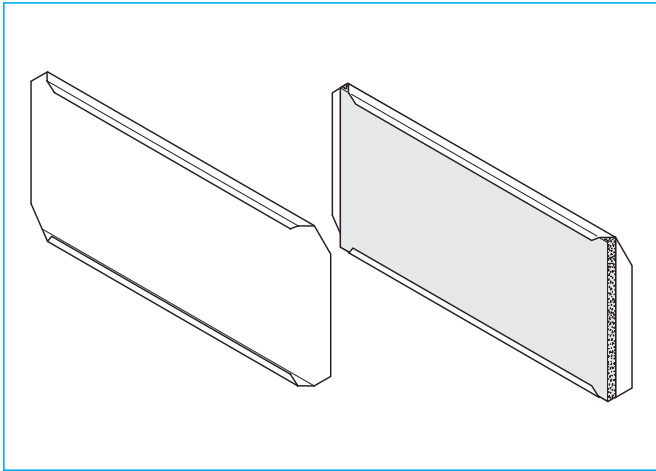
## Securing loads to suspended ceilings

Light loads, which do not exceed the load-bearing capacity of a light suspended ceiling, may be fastened to the panel. Heavier loads must be secured separately to the original ceiling. Tilting ceiling hooks or spring toggle ceiling hooks should be used to fix these.

The maximum possible load capacity depends on the individual ceiling construction. The maximum load-bearing capacity of the ceiling hooks is 20 kg in single-layer panelling and 25 kg in double-layer panelling.

# AQUAPANEL® special fittings

## AQUAPANEL® Traverse



**M type traverse**

**MH type traverse**

### AQUAPANEL® Traverse

To ensure light console loads are borne securely, AQUAPANEL® Traverses are attached between the C-wall profiles. The cross panels should be secured twice on each side using crimping pliers. Alternatively, the cross panels can be secured with self-tapping screws.

For single layer panelling, the following maximum loads apply:

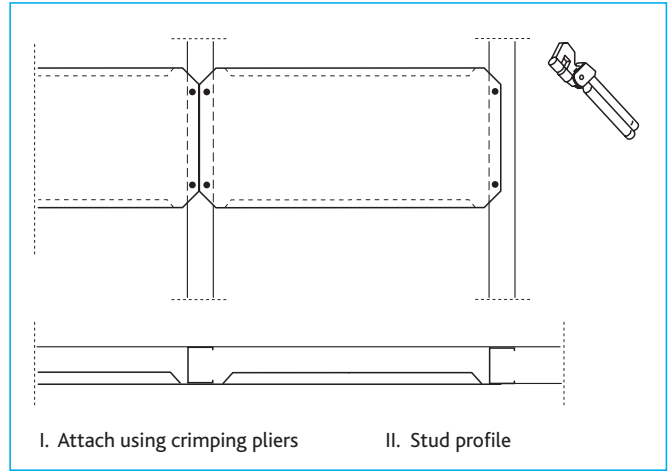
**M type:** up to 0.7kN/m

**MH type:** up to 1.5kN/m

For single layer panelling with tiled AQUAPANEL® Cement Board

Indoor or double layer panelling, the following maximum loads apply:

**M type and MH type:** up to 1.5kN/m



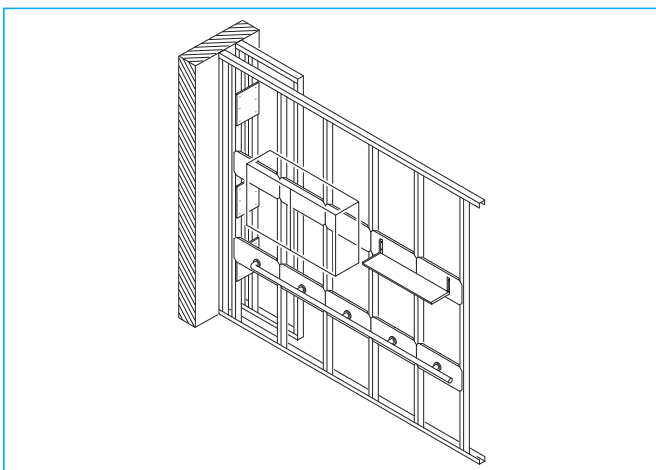
I. Attach using crimping pliers

II. Stud profile

### AQUAPANEL® Traverse: installation

#### Sanitary mounts

Standard sanitary mounts are used to bear greater loads. Various types of mount are available for the various sanitary objects. Sanitary mounts are secured using either side U-bracing profiles or are anchored directly into the original flooring. Manufacturer guidelines should be followed when assembling.



**AQUAPANEL® Traverse: arrangement and loading**

### AQUAPANEL® Traverse

<b>Axis frame dimensions</b>	600/625 mm
<b>Height</b>	approx. 290 mm
<b>Thickness of metal</b>	0.75 mm with special anti-corrosion layer
<b>M type</b>	Without impregnated wood packing
<b>MH type</b>	With core-impregnated MDF filler, approx. 18 mm thick

## Installation of access panels

Alutop access panels can be installed in all partition walls and plumbing walls built with AQUAPANEL® Cement Board Indoor. They are easy to install and safe to handle.

Tiled walls which comprise AQUAPANEL® Cement Board Indoor and installed access panels must be tested for water impermeability, as confirmed by the BBW 0215069 test report of LGA Bayern.

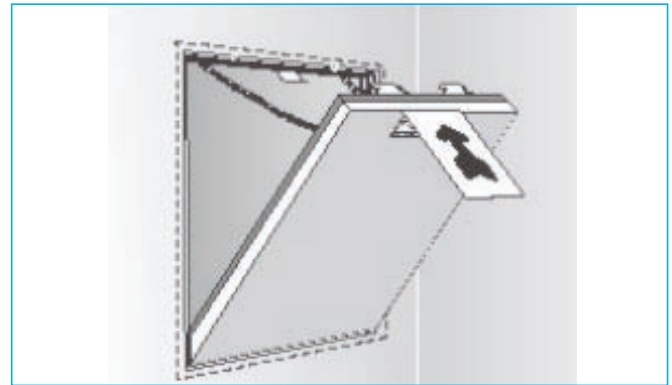
### Product features

- Frames of anodised aluminium profiles
- All-round expanded natural rubber seal for sealing against water spray
- Anti-drop device on inside cover
- Simple and convenient to operate
- Invisible when closed, robust closing and hinge joint mechanism

### Installation

- Make wall opening: size of opening = desired internal dimension plus 6 mm clearance all round.

- Make assembly opening according to the tiled section. The outer frame of the opening is dependent on the tiled section
- Position the outer frame, align the tiled section correspondingly and affix free from distortion, aligning the closing system on the ceiling
- Screw the external frame onto the wall framework
- Adjust the safety chain of the inside cover and fasten
- Fit inside cover
- Test correct functioning
- Complete wall panelling
- Level out transitions
- If necessary surface sealing may be used, affix tiles corresponding to tiled section using the thin-bed fixing technique
- Tile the wall surface in accordance with the guidelines
- Test correct functioning
- Cut joint packing to size and install



### Technical specification (example wall)

AQUAPANEL® Access Panels, spray water protected, for non-load-bearing, space-enclosing partition or shaft wall constructions or wall linings without fire protection requirements.

Panelling	12.5 mm AQUAPANEL® Cement Board Indoor
Desired internal dimension (B x H)	400 x 400 mm
Actual internal dimension (B x H)	415 x 415 mm
Construction opening (B x H)	427 x 427 mm
Tile dimension	100 x 100 mm
Tile thickness	6 mm
Joint width	3 mm
Adhesive thickness	2 mm
Construction execution	Standard splash-proof
Operating range	Partition wall
Splash water resistance certificate	PB-Nr. BBW0215069 LGA Nürnberg

AQUAPANEL® Cement Board Indoor	Wall/ceiling
<b>Panelling thickness (mm)</b>	12.5 2 x 12.5
<b>Standard size* B x H (LD in mm)</b>	300 x 300 400 x 400 500 x 500

\* other sizes on request.

### Note: Ceiling applications

Access panels can also be installed in ceiling constructions. If applicable, please state this when ordering.

# Single layer partition wall, metal single stud frame

Fire resistance duration: 30 min. (EI30)

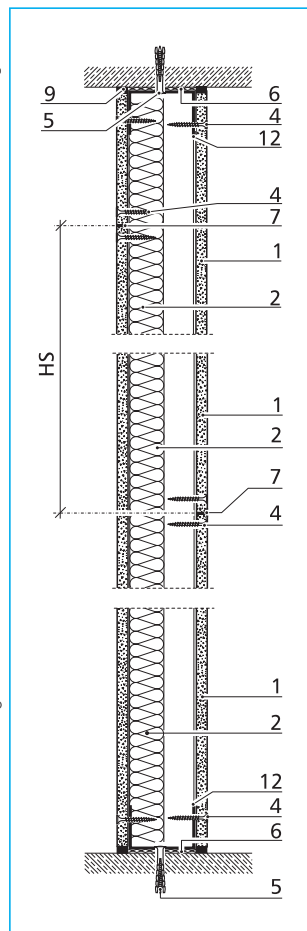
$R_{w,R} \leq 44 \text{ dB}$

## Abbreviations

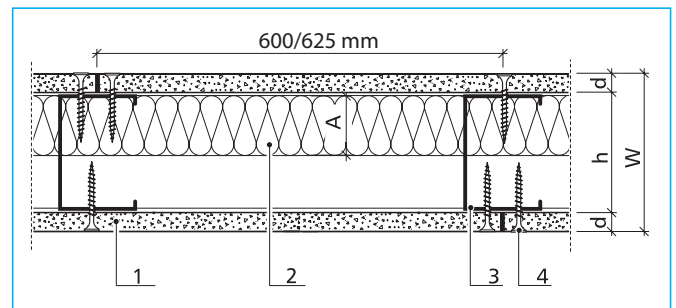
- W Wall thickness (mm)
- d Thickness of the AQUAPANEL® Cement Board Indoor panel
- D/A Thickness of insulation layer (mm)
- h Profile bridge height (mm)
- HS Half width of panel (mm)
- a Possible expansion joint movement  $\leq 20 \text{ mm}$

## Description of material

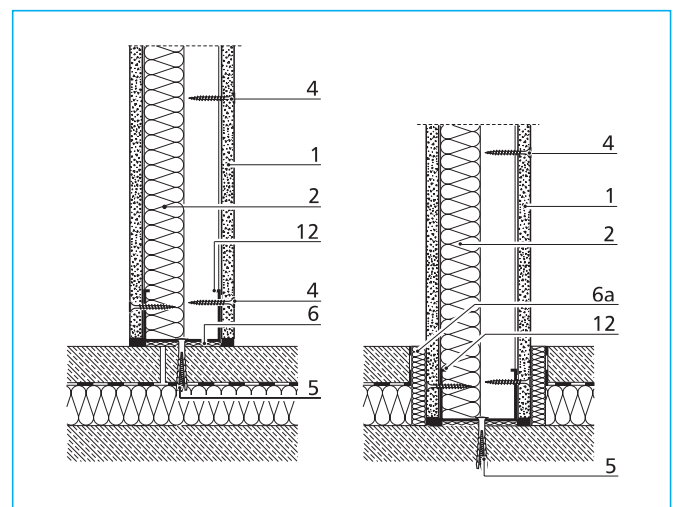
- 1 AQUAPANEL® Cement Board Indoor
- 1b AQUAPANEL® Cement Board Indoor board strips in profile widths
- 2 Insulation material
- 3 CW-profile
- 4 AQUAPANEL® Maxi Screw
- 5 Approved fixing method
- 6 Insulating strips e.g. sealing tape/partition wall kit
- 6 a Edge insulation strips
- 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)
- 9 Permanently flexible sealant
- 12 UW-profile



Vertical cross-section



Single fixture mount, single layer of panelling, horizontal cross-section



Floor connections

## Approved maximum wall height in m (including ceramics)

AQUAPANEL® Cement Board Indoor	1 x 12.5 mm per wall side without fire protection requirement	
	Installation range 1	Installation range 2
1) CW-profile 50/0.6	3.00	2.75
2) CW-profile 75/0.6	5.00	4.00
3) CW-profile 100/0.6	6.00	5.00

## Physical properties

AQUAPANEL® Cement Board Indoor	Profile	Wall thickness (mm)	Mineral wool (A1, Melting point >1000°C)		Fire resistance class Test certificate	Sound insulation $R_{w,R}$ dB Test certificate	
			Thickness (mm)	Gross density (kg/m³)			
1 x 12.5 mm per wall side	CW 50/0.6	75	50	22	EI30 (*) 3258/1525	42	420001276-1
	CW 75/0.6	100	-	-	EI30 3220/5032	-	-
	CW 100/0.6	125	-	-	EI30 3220/5032	-	-
			80	Partition felt	-	44	420001590-1

(\*) Without mineral wool.

## Ideal for residential units, administration or commercial buildings

### Special notes

When building the metal framework, follow the standard guidelines supplied by Knauf.

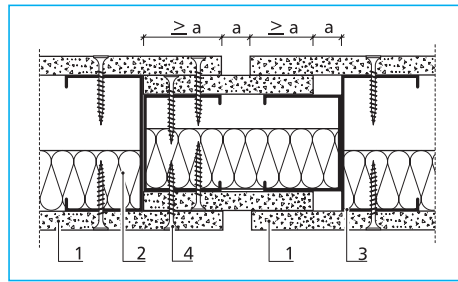
In rooms with continuous high levels of damp or chemical contamination such as commercial kitchens, swimming pools, saunas or chemical laboratories, use profiles with increased corrosion protection.

Non-load-bearing partition walls should have expansion joints at least every 7.2/7.5 metres. In addition, building expansion joints must be accommodated.

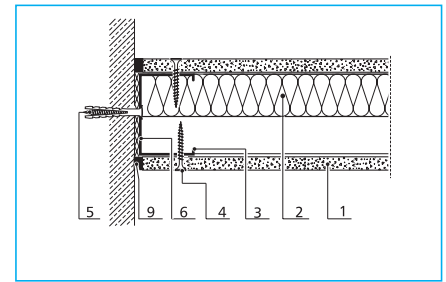
A further improvement in the sound reduction level of 1 to 3 dB can be achieved through using special sound insulation profiles, e.g. Knauf MV profile.

The stated construction physical characteristics, static and construction properties can only be achieved when exclusive use is made of recommended products.

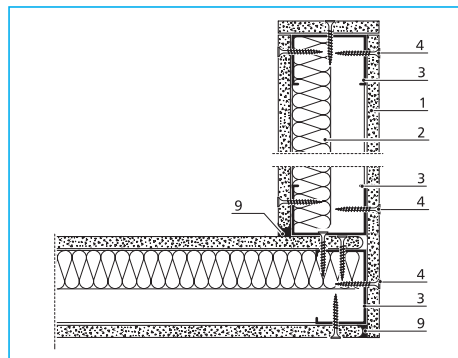
To fasten other console loads such as sanitary items, see separate instructions on page 18.



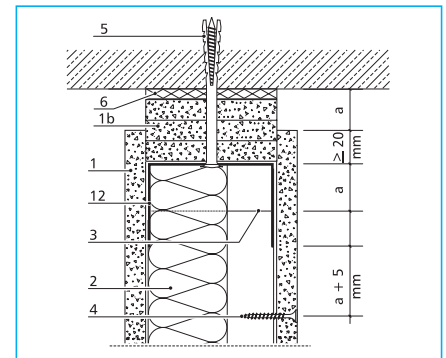
**Expansion joint, E130**



**Connection to solid walls**



**Corner formation and end of free-standing wall**



**Sliding ceiling connection**

### Material requirements per square metre wall

Material requirements for metal single stud frame with AQUAPANEL® Cement Board Indoor single-layer panelling, without offcut and loss.

Material	Single layer
CW-profile	2.0 lfm
UW-profile	0.7 lfm
Sealing tape/partition wall kit	0.7 lfm
Approved fixing method	1.6 pieces
AQUAPANEL® Cement Board Indoor	2 m <sup>2</sup>
AQUAPANEL® Maxi Screws	30 pieces
AQUAPANEL® Joint Adhesive (PU)	100 ml
AQUAPANEL® Interior Primer	approx. 100 g
Insulation material	1 m <sup>2</sup>
Permanently flexible sealant	

# Double layer partition wall, metal single stud frame

Fire resistance duration: 30 to 120 min. (EI30 – EI120)

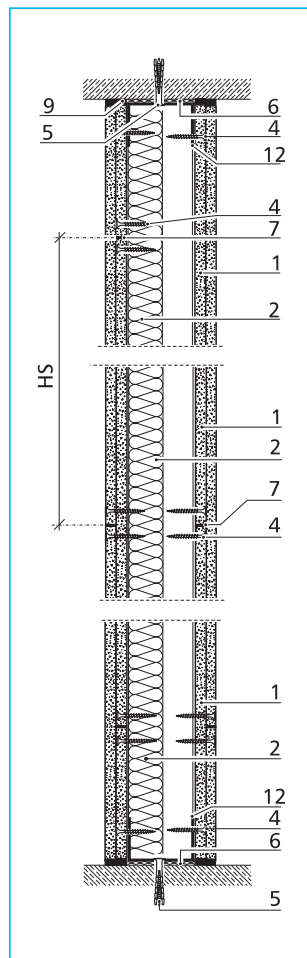
$R_{w,R} \leq 51 \text{ dB}$

## Abbreviations

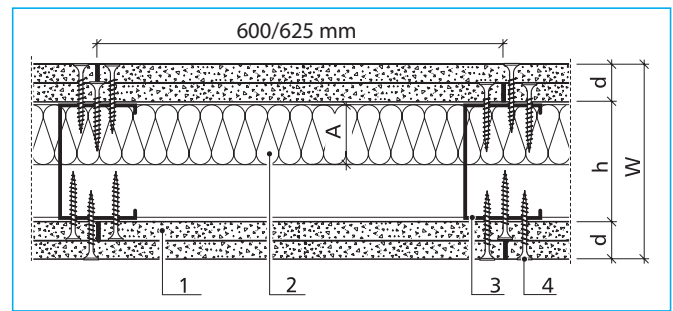
- W Wall thickness (mm)
- d Thickness of the AQUAPANEL® Cement Board Indoor panel
- D/A Thickness of insulation layer (mm)
- h Profile bridge height (mm)
- HS Half width of panel (mm)

## Description of material

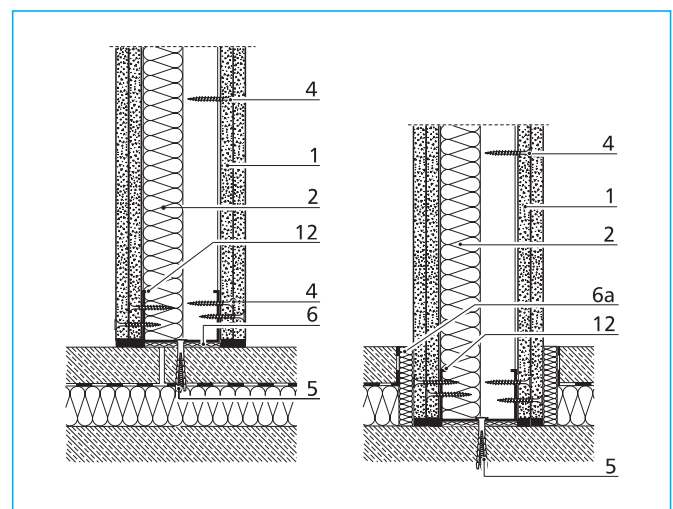
- 1 AQUAPANEL® Cement Board Indoor
- 1b AQUAPANEL® Cement Board Indoor board strips
- 2 Insulation material
- 3 CW-profile
- 4 AQUAPANEL® Maxi Screw
- 5 Approved fixing method
- 6 Insulating strips e.g. sealing tape/partition wall kit
- 6 a Edge insulation strips
- 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)
- 9 Permanently flexible sealant
- 12 UW-profile
- 28 Expansion joint profile



Vertical cross-section



Single fixture mount, double layer of panelling, horizontal cross-section



Floor connections

## Approved maximum wall height in m (including ceramics)

AQUAPANEL® Cement Board Indoor	2 x 12.5 mm per wall side without fire protection requirement	
	Installation range 1	Installation range 2
1) CW-profile 50/0.6	4.00	3.50
2) CW-profile 75/0.6	6.00	5.00
3) CW-profile 100/0.6	7.00	6.50

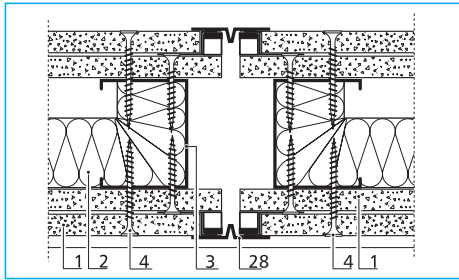
## Physical properties

AQUAPANEL® Cement Board Indoor	Profile	Wall thickness (mm)	Mineral wool (A1, Melting point >1000°C)		Fire resistance class Test certificate	Sound insulation $R_{w,R}$ dB Test certificate	
			Thickness (mm)	Gross density (kg/m³)			
2 x 12.5 mm per wall side	CW 50/0.6	100	50	22	EI30 (*) 3258/1525	49	420001276-2
			60	25	EI90 3015/2882	-	-
	CW 75/0.6	125	60	50	EI120 3015/2882	-	-
			60	25	EI90 3321/2155	-	-
	CW 100/0.6	150	60	50	EI120 3321/2155	-	-
			80	Partition felt	-	49	420001590-2
	Noise control profile	80	Partition felt	-	51	420001590-8	

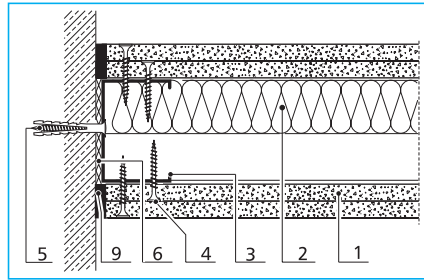
(\*) Without mineral wool.



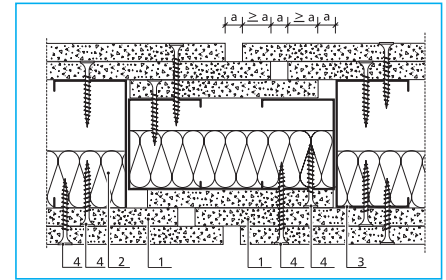
## Ideal for residential units, administration or commercial buildings



**Expansion joint for walls without fire protection requirement**



**Connection to solid walls**



**Expansion joint, F90**

### Special notes

When building the metal framework, follow the standard guidelines supplied by Knauf.

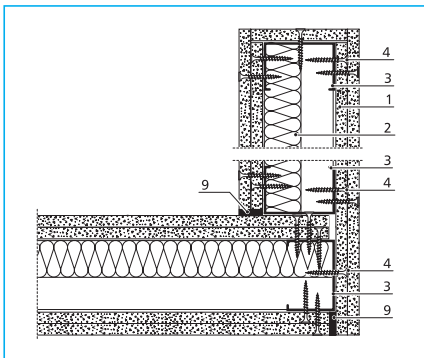
In rooms with continuous high levels of damp or chemical contamination such as commercial kitchens, swimming pools, saunas or chemical laboratories, use profiles with increased corrosion protection.

Non-load-bearing partition walls should have expansion joints at least every 7.2/7.5 metres. In addition, building expansion joints must be accommodated.

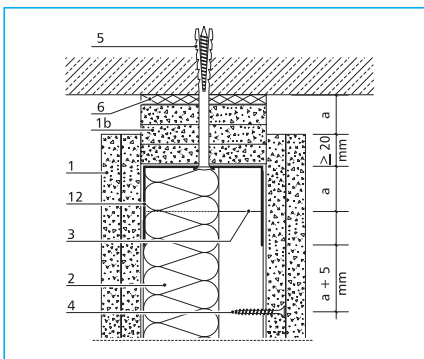
A further improvement in the sound reduction level of 1 to 3 dB can be achieved through using special sound insulation profiles, e.g. Knauf MV profile.

The stated construction physical characteristics, static and construction properties can only be achieved when exclusive use is made of recommended products.

To fasten other console loads such as sanitary items, see separate instructions on page 18.



**Corner formation and end of free-standing wall**



**Sliding ceiling connection**

### Material requirements per square metre wall

Material requirements for metal single stud frame with AQUAPANEL® Cement Board Indoor double-layer panelling, without offcut and loss.

Material	Double layer
CW-profile	2.0 lfm
UW-profile	0.7 lfm
Sealing tape/partition wall kit	0.7 lfm
Approved fixing method	1.6 pieces
AQUAPANEL® Cement Board Indoor	4 m <sup>2</sup>
AQUAPANEL® Maxi Screws	60 pieces
AQUAPANEL® Joint Adhesive (PU)	200 ml
AQUAPANEL® Interior Primer	approx. 100 g
Insulation material	1 m <sup>2</sup>
Permanently flexible sealant	

# Partition wall with metal double stud frame

$R_{w,R} \leq 61 \text{ dB}$

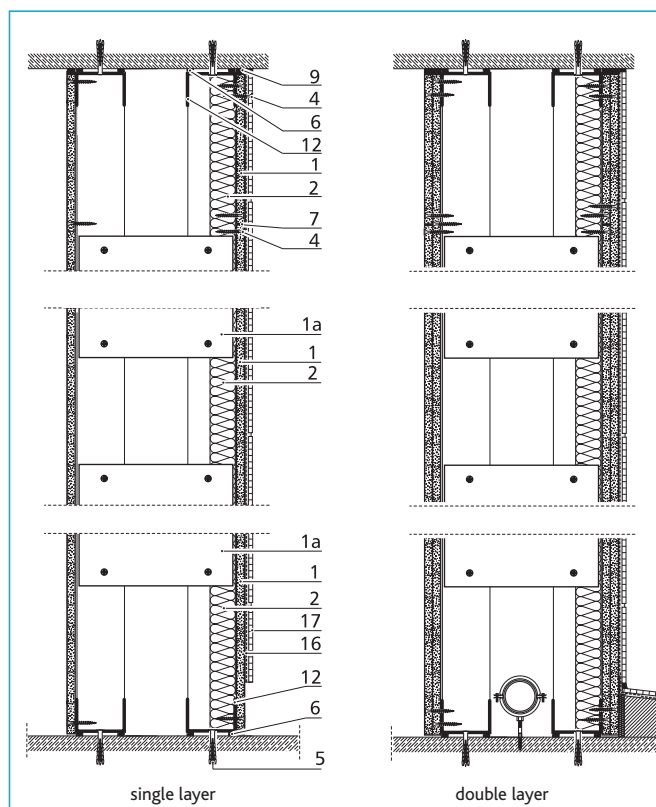
## Abbreviations

- W Wall thickness (mm)  
 d Thickness of the AQUAPANEL® Cement Board Indoor panel  
 D/A Thickness of insulation layer (mm)  
 h Profile bridge height (mm)

- sealing strip/partition wall kit for sound protection requirements; foam rubber; edge insulation strips  
 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)  
 9 Permanently flexible sealant  
 12 UW-profile  
 16 Flexible adhesive  
 17 Ceramic tiles or stoneware

## Description of material

- 1 AQUAPANEL® Cement Board Indoor  
 1 a AQUAPANEL® Cement Board Indoor panel strips 300 mm high  
 Distance from floor  $\leq 300 \text{ mm}$   
 Distance from each other  $\leq 1.000 \text{ mm}$   
 2 Insulation material  
 2 a Insulation strips  
 3 CW-profile  
 4 AQUAPANEL® Maxi Screws  
 5 Approved fixing method  
 6 Insulating strips e.g.



Partition wall with double fixture mounts, horizontal cross-section

## Maximum wall height for metal double stud frame in m (including ceramics)

AQUAPANEL® Cement Board Indoor	1 x 12.5 mm per wall side max. wall height (m)		2 x 12.5 mm per wall side max. wall height (m)	
	Installation range 1	Installation range 2	Installation range 1	Installation range 2
Profile-line up connected with ties or supported against each other	without fire protection requirement	without fire protection requirement	without fire protection requirement	without fire protection requirement
1) 2 x CW 50/0.6	3.00	2.75	4.00	3.50
2) 2 x CW 75/0.6	4.50	4.00	5.40	4.90
3) 2 x CW 100/0.6	5.50	5.00	7.00	6.50

## Physical properties

AQUAPANEL® Cement Board Indoor	Profile	Wall thickness (mm)	Mineral wool (A1, Melting point >1000°C)		Sound insulation $R_{w,R}$ dB Test certificate
			Thickness (mm)	Gross density (kg/m³)	
1 x 12.5 mm per wall side Double stud frame	2 x CW 50/0.6 connected with ties	> 125	2 x 50 2 x 40	22 100	51 420001276-3 54 (*) 0066.05-P244

(\*) No ties, studs separated by 2 x 2.5 mm insulation strips.

# Ideal as a plumbing wall or party wall

## Physical properties

AQUAPANEL® Cement Board Indoor	Profile	Wall thickness (mm)	Mineral wool (A1, Melting point >1000°C)		Sound insulation $R_{w,R}$ dB Test certificate
			Thickness (mm)	Gross density (kg/m³)	
2 x 12.5 mm per wall side Double stud frame	2 x CW 50/0.6 connected with ties	> 150	2 x 40	100	61(*) 0067.05-P244

(\*) No ties, studs separated by 2 x 2.5 mm insulation strips.

Double stud walls can be panelled with either single or double layers of AQUAPANEL® Cement Board Indoor. An important benefit of AQUAPANEL® Cement Board Indoor is that a single layer of panelling is sufficient as a tile backing board.

Double-stud walls can be executed in three variants:

- With two frameworks, joined to the third point using AQUAPANEL® Cement Board Indoor strips in rigid compression.
- With two frameworks butted against each other, separated by mineral wool insulation strips,
- With two separate frameworks.

For the first and second cases, the given permissible wall heights apply. With two separate frameworks, the wall heights for independent wall linings apply (see page 34).

### Special notes

When building the metal framework, follow the standard guidelines supplied by Knauf.

In rooms with continuous high levels of damp or chemical contamination such as commercial kitchens, swimming pools, saunas or chemical laboratories, use profiles with increased corrosion protection.

The stated construction physical characteristics, static and construction properties can only be achieved when exclusive use is made of recommended products.

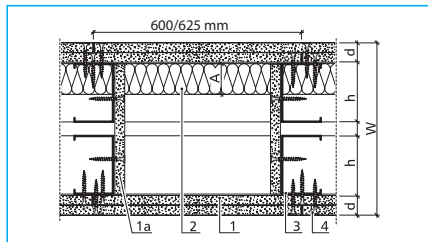
To fasten other console loads such as sanitary items, separate measures are required (see. Page 18).

The double stud wall with double panelling and an insulation layer of 2 x 40 mm rock wool is suitable as a party wall, as long as the flanking components meet the building requirements.

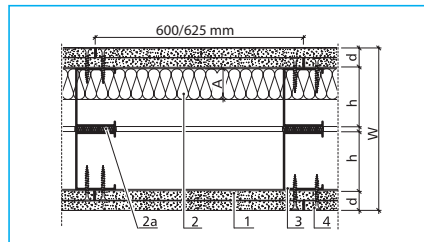
### Material requirements per square metre wall

Material requirements for metal double stud frame with AQUAPANEL® Cement Board Indoor without offcut and loss:

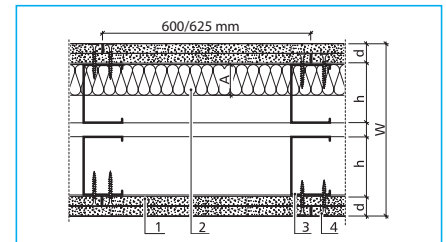
Material AQUAPANEL® Cement Board Indoor	Single layer	Double layer
AQUAPANEL® Cement Board Indoor	2.0 m²	4.0 m²
AQUAPANEL® Cement Board Indoor panel strips	0.3 m²	0.3 m²
CW-profile	4.0 lfm	4.0 lfm
UW-profile	1.4 lfm	1.4 lfm
Sealing tape/partition wall kit	1.4 lfm	1.4 lfm
Approved fixing method	3.2 pieces	3.2 pieces
AQUAPANEL® Maxi Screws	30 pieces	60 pieces
AQUAPANEL® Joint Adhesive (PU)	100 ml	200 ml
AQUAPANEL® Interior Primer	approx. 100 g	approx. 100 g
Insulation material depending on requirement	1 or 2 m²	1 or 2 m²
Permanently flexible sealant		



Double stud frame with ties



Double stud frame with mineral wool strips

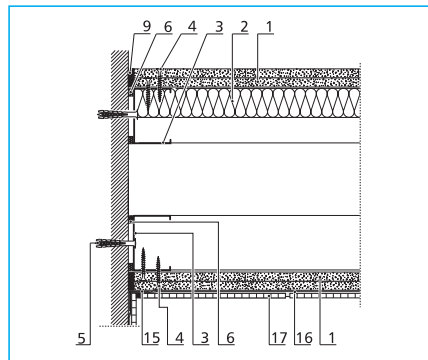


Separated double stud frames

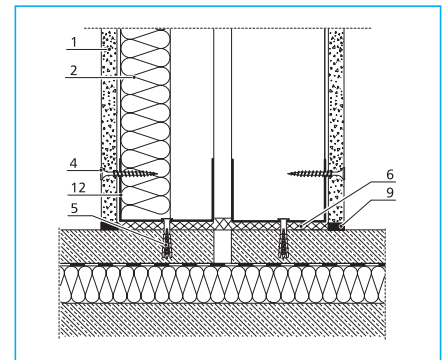
# Partition wall with metal double stud frame, details

## Description of material

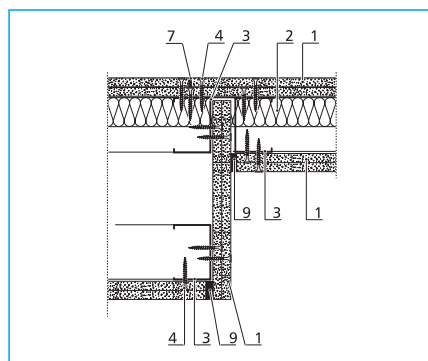
- 1 AQUAPANEL® Cement Board Indoor
- 2 Insulation material
- 3 CW-profile
- 4 AQUAPANEL® Maxi Screw
- 5 Approved fixing method
- 6 Insulation strips e.g. sealing tape/partition wall kit
- 6 a Edge insulation strips
- 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)
- 9 Permanently flexible sealant
- 12 UW-profile
- 12 a L wall interior corner, profile
- 15 Sealing e.g. surface sealing tape inserted at surface thickness
- 16 Flexible adhesive
- 17 Ceramic tiles or stoneware



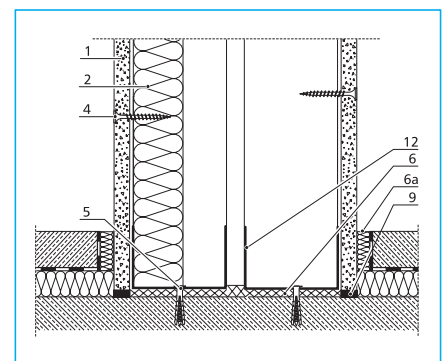
**Connection to solid walls**



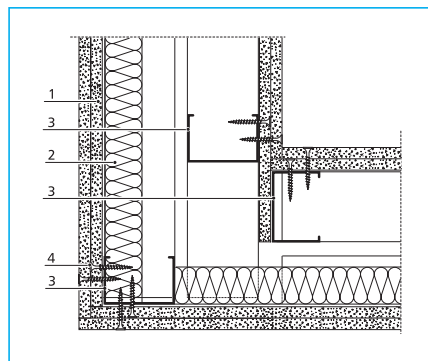
**Connection to floating floor screed with separation joint**



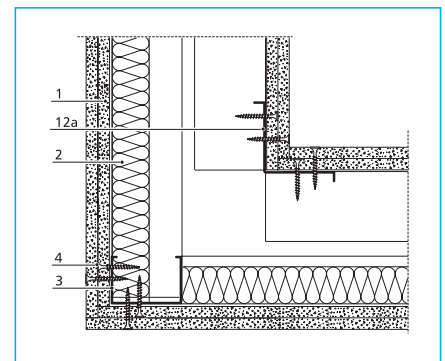
**Connection to simple stud walls**



**Connection to solid ceilings**

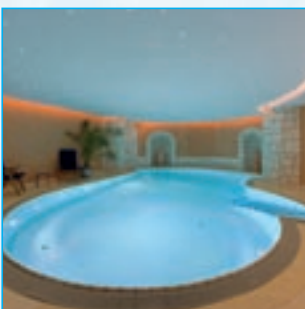
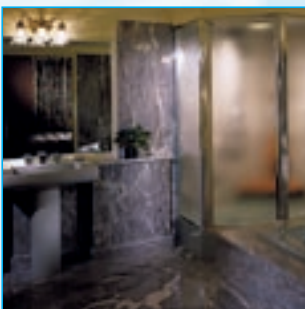
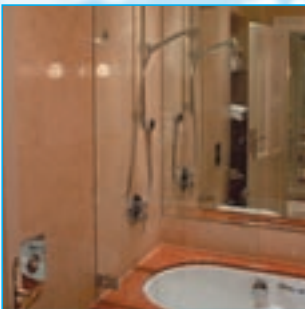


**Corner formation, variant 1**



**Corner formation**

*The ideal tile backing board for wet and humid areas*



# Partition wall, timber framing

Fire resistance duration: 30 – 60 min.

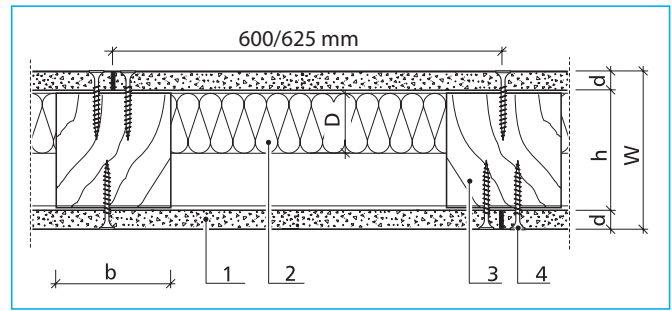
$R_{w,R} \leq 42 \text{ dB}$

## Abbreviations

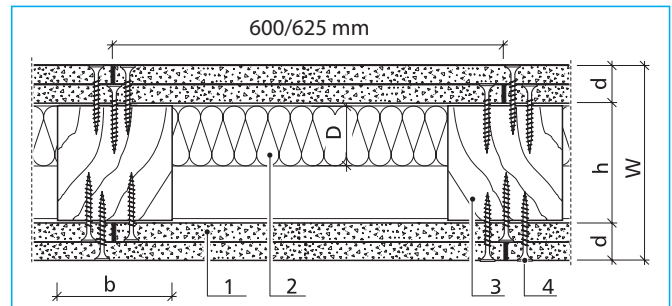
- W Wall thickness (mm)
- d Thickness of the AQUAPANEL® Cement Board Indoor panel
- D/A Thickness of insulation layer (mm)
- b/h Cross-section of the timber framing (mm/mm)
- HS Half width of panel (mm)

## Description of material

- 1 AQUAPANEL® Cement Board Indoor
- 2 Insulation material
- 3 Supporting and foundation battens, softwood grade S10
- 4 AQUAPANEL® Maxi Screws, clips or wood screws
- 5 Galvanized woodscrews 8 x 100 mm with plastic pins 10 x 40 mm
- 6 Insulation strips e.g. sealing tape/partition wall kit
- 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)
- 8 Woodscrews 6 x 100 mm
- 9 Permanently flexible sealant



Wooden stud frame, single-layer panelling, horizontal section



Wooden stud frame, double-layer panelling, horizontal section

## Maximum wall height in m according to DIN 4103, Part 4 \*\*

Timber framing	without fire protection requirement		with fire protection requirement	
	Installation range 1	Installation range 2	Installation range 1	Installation range 2
Timber frame min b/min h (mm/mm)				
80/60	4.10	4.10	4.10	4.10

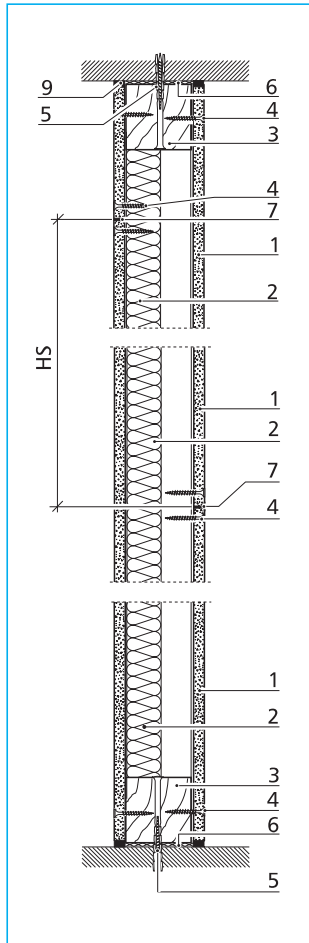
## Physical properties

AQUAPANEL® Cement Board Indoor	Profile	Wall thickness (mm)	Mineral wool (A1, Melting point >1000°C)		Fire resistance class Test certificate	Sound insulation $R_{w,R}$ dB Test certificate	
			Thickness (mm)	Gross density (kg/m³)			
1 x 12.5 mm per wall side	HS 60/60	85	85	85	EI60 3032/2752	36(*)	420001590-6
2 x 12.5 mm per wall side	HS 60/60	110	40	14	-	42(*)	420001590-6

(\*) Mineral wool  $\geq 40\text{mm}$ ;  $\geq 14 \text{ kg/m}^3$ .

(\*\*) Apply national building regulations.

# Particularly suitable for housing construction and for wooden stud structures



Vertical section

For connection to floors and ceilings and for studs, use flat, warp-free grade S10 wood with a moisture content of less than 20%.

### Installing the connection timbers

The connection timbers are fastened with at least one 6 mm diameter woodscrew per metre wall length or an equivalent, approved anchoring device.

For side fastening of walls to wooden components, we recommend two 12 mm diameter woodscrews. The wall lengths must not exceed 5000 mm.

When installing the AQUAPANEL® Cement Board Indoor panels on the timber frame, follow the instructions for screwing and glueing given on page 9.

When fastening the AQUAPANEL® Cement Board panels, galvanized or rust-free clips or screws can be used as an alternative to the AQUAPANEL® Maxi Screw. For wood screws, minimum b/h measurements of 80/60 must be selected.

**Clamp type:**  
Haubold SD 9150 CRF (Ø 2.0 mm, L = 50 mm) oder Bühnen Q 21 BAB/LQ21 BLB (Ø 1.8 mm, L = 50 mm), Minimum edge distance of 30 mm

**Clamping device:**  
Haubold PN 9180 XII or Bühnen SQ S 55

**Screwnail type:**  
Haubold RNC-S 28/45 RF (Ø 2.8 mm, L = 45 mm, Torx 15), Minimum edge distance of 20 mm

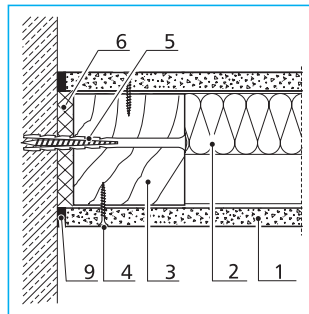
**Nail device:**  
Haubold RNC 65 S/W I

**Fastening distances from each other:**  
Board edge: 150 mm  
Board centre: 75 mm

### Material requirements per square metre wall

Material requirements for wooden frameworks with AQUAPANEL® Cement Board Indoor without offcut and loss.

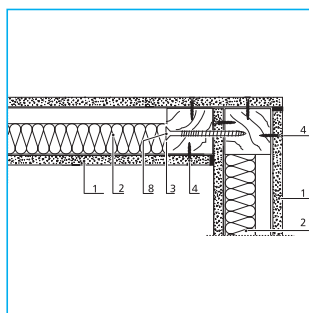
Material	Single layer	Double layer
Square timber 80/60	2.7 lfm	2.7 lfm
Sealing tape/partition wall kit	0.7 lfm	0.7 lfm
Wood screws 8 x 100 mm plus peg	1.6 pieces	1.6 pieces
AQUAPANEL® Cement Board Indoor	2 m <sup>2</sup>	4 m <sup>2</sup>
AQUAPANEL® Maxi Screws or clips or wood screws	30 pieces 52 pieces	60 pieces 104 pieces
AQUAPANEL® Joint Adhesive (PU)	100 ml	200 ml
AQUAPANEL® Interior Primer	approx. 100 g	approx. 100 g
Insulation material	1 m <sup>2</sup>	1 m <sup>2</sup>
Permanently flexible sealant		



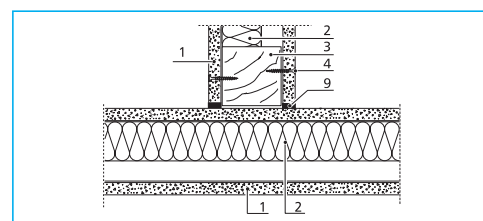
Wall connection

### Special notes

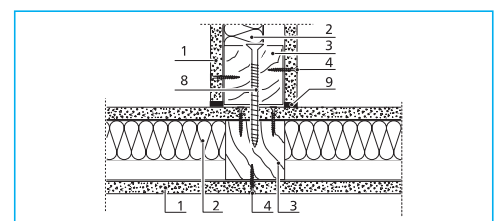
For all walls with wooden frameworks we recommend adhering to national regulations. Table 1, DIN 4103, part, 4, page 3, line 2 can be used to determine approved wall heights. The penetration depth of the screws in a wooden framework is 5 times the shank diameter, but not less than 24 mm. Non-load-bearing partition walls should have expansion joints at least every 7.2/7.5 metres. Building expansion joints must also be applied. The stated construction physical characteristics, static and construction properties can only be achieved when exclusive use is made of recommended products.



Corner formation



T connection of two partition walls, variant 1



T connection of two partition walls, variant 2

# Partitions with mixed panelling

Fire resistance duration: 30 to 90 min. (EI30 – EI120)

$R_{w,R} \leq 54 \text{ dB}$

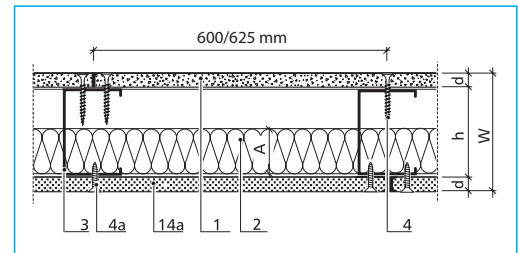
## Abbreviations

- W Wall thickness (mm)
- d Total thickness of the panelling
- A Thickness of insulation layer (mm)
- h Profile bridge height (mm)

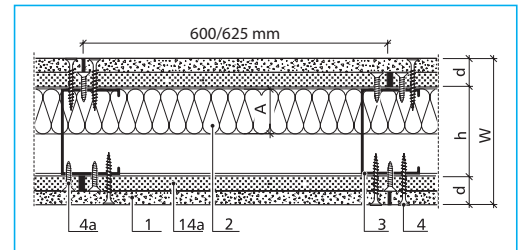
## Description of material

- 1 AQUAPANEL® Cement Board Indoor
- 2 Insulation material
- 3 C wall profile
- 4 AQUAPANEL® Maxi Screw
- 4 a Quick-build screw 3.5 x 25 mm
- 6 Insulation strips e.g. sealing tape/partition wall kit
- 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)
- 9 Permanently flexible sealant
- 14 a Knauf fire protection plate GKF, 12.5 mm

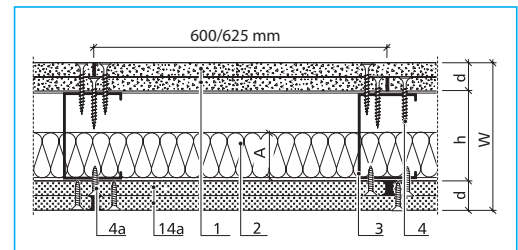
**Mixed construction F30**  
 1 x 12.5 mm AQUAPANEL®  
 Cement Board Indoor +  
 1 x 12.5 mm GKF\*



**Mixed construction F90**  
 1 x 12.5 mm AQUAPANEL®  
 Cement Board Indoor +  
 1 x 12.5 mm GKF both sides\*



**Mixed construction F90**  
 2 x 12.5 mm AQUAPANEL®  
 Cement Board Indoor +  
 2 x 12.5 mm GKF\*



(\*) National regulations Germany ABP

## Physical properties

AQUAPANEL® Cement Board Indoor	Profile	Wall thickness (mm)	Mineral wool (A1, Melting point >1000°C)		Fire resistance class Test certificate (*)	Sound insulation $R_{w,R}$ dB Test certificate	
			Thickness (mm)	Gross density (kg/m³)			
1 x 12.5 mm AQUAPANEL® Cement Board Indoor + 1 x 12.5 mm GKF	CW 50/06	75	50	22	-	44	420001276-4
	CW 75/06	100	40	40	F30 P-3239-5122	-	
			60	25	F30 P-3239-5122	-	
	CW 100/06	125	40	40	F30 P-3239-5122	-	
			60	25	F30 P-3239-5122	-	
			80	14	-	45	420001590-3
2 x 12.5 mm AQUAPANEL® Cement Board Indoor + 2 x 12.5 mm GKF	CW 50/06	100	50	22	-	51	420001276-5
	CW 75/06	125	60	25	F90 P-3243-5162	-	
	CW 100/06	150	60	25	F90 P-3243-5162	-	
			80	14	-	50	420001590-4
1 x 12.5 mm AQUAPANEL® Cement Board Indoor + 1 x 12.5 mm GKF on both sides	CW 75/06	125	60	25	F90 P-3243-5162	-	
	CW 100/06	150	60	25	F90 P-3243-5162	-	
			80	Partition felt	-	51	420001590-5
	Noise control profile	150	2 x 40	100	F90 P-3243-5162	54	0065.05-P244



### Maximum wall height for wall with mixed panelling in m (including tiles)

AQUAPANEL® Cement Board Indoor + 12.5 mm GKF	without fire protection requirement			
	1 x 12.5	2 x 12.5	1 x 12.5	2 x 12.5
	mm per wall side		mm per wall side	
	Installation range 1		Installation range 2	
1) CW-profile 50/0.6	3.00	4.00	2.75	3.50
2) CW-profile 75/0.6	4.50	5.50	3.75	5.00
3) CW-profile 100/0.6	5.00	6.50	4.25	5.75

### Material requirements per square metre of wall

Material requirements for wall with mixed panelling with AQUAPANEL® Cement Board Indoor and GKF, without offcut and loss

Material	Single layer	Double layer
CW-profile	2.0 lfm	2.0 lfm
UW-profile	0.7 lfm	0.7 lfm
Sealing tape/partition wall kit	0.7 lfm	0.7 lfm
Approved fixing method	1.6 pieces	1.6 pieces
AQUAPANEL® Cement Board Indoor	1 m <sup>2</sup>	2 m <sup>2</sup>
AQUAPANEL® Maxi Screws	15 pieces	30 pieces
AQUAPANEL® Joint Adhesive (PU)	50 ml	100 ml
AQUAPANEL® Interior Primer	approx. 100 g	approx. 50 g or 100 g
Insulation material	1 m <sup>2</sup>	1 m <sup>2</sup>
Permanently flexible sealant		
Knauf fire protection plate GKF, 12.5 mm	1 m <sup>2</sup>	2 m <sup>2</sup>
Quick-build screws	15 pieces	30 pieces

### Special notes

When building the metal framework, follow the standard guidelines supplied by Knauf.

In rooms with continuous high levels of damp or chemical contamination such as commercial kitchens, swimming pools, saunas or chemical laboratories, use profiles with increased corrosion protection.

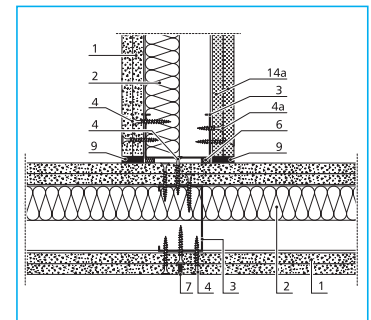
Non-load-bearing partition walls should have expansion joints at least every 7.2/7.5 metres.

Building expansion joints must also be applied.

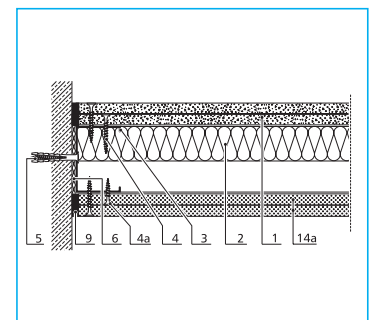
A further improvement in the sound reduction level of 1 to 3 dB can be achieved through using special sound insulation profiles, e.g. Knauf MV profile.

The stated construction physical characteristics, static and construction properties can only be achieved when exclusive use is made of recommended products.

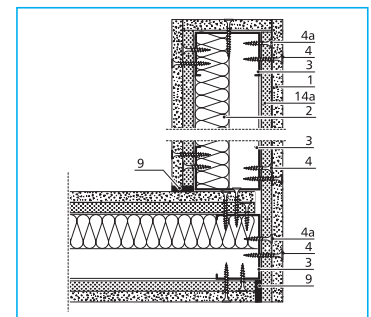
To fasten other console loads such as sanitary items, separate measures are required (see. Page 18).



**T connection**



**Connection to solid walls**



**Corner formation and wall connection**

# Independent wall linings/shaft walls

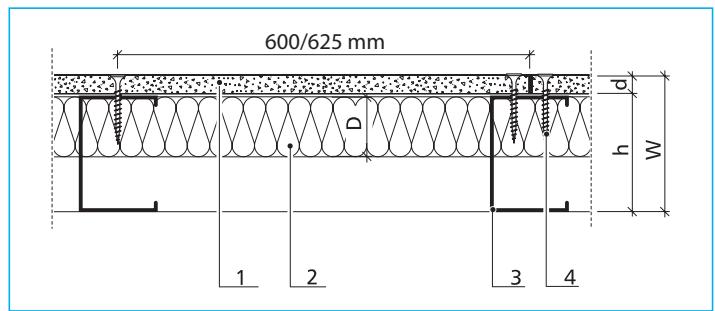
## Fire resistance duration: EI30 from both sides

### Abkürzungen

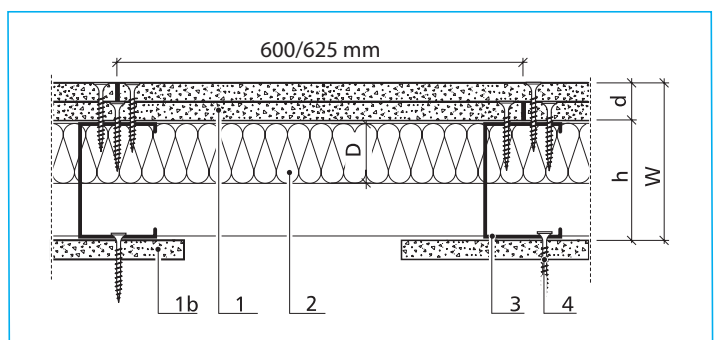
- W Wall thickness (mm)
- d Thickness of the AQUAPANEL® Cement Board Indoor panel
- D/A Thickness of insulation layer (mm)
- h Profile bridge height (mm)
- HS Half width of panel (mm)

### Description of material

- 1 AQUAPANEL® Cement Board Indoor
- 1b AQUAPANEL® Cement Board Indoor panel strips 100 x 100 mm as installation aid
- 2 Insulation material, if desired
- 3 CW-profile
- 4 AQUAPANEL® Maxi Screw
- 5 Approved fixing method
- 6 Insulation strips e.g. sealing tape/partition wall kit
- 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)
- 9 Permanently flexible sealant
- 12 UW-profile



Wall lining, single layer of panelling, horizontal section



EI30 wall lining, double layer of panelling, horizontal section

### Maximum wall height in m for independent wall lining/shaft wall

#### without fire protection requirement

AQUAPANEL® Cement Board Indoor	1 x 12.5 mm		2 x 12.5 mm	
	Installation range 1	Installation range 2	Installation range 1	Installation range 2
1) CW-profile 50/0.6	2.50	2.40	2.60	2.50
2) CW-profile 50/07 with additional fixture at max. distance of 100 cm	3.20	2.75	4.00	3.50
3) CW-profile 75/0.6	3.75	3.30	4.00	3.50
4) CW-profile 100/0.6	4.50	4.10	4.60	4.20

### Physical properties

AQUAPANEL® Cement Board Indoor	Profile	Wall thickness (mm)	Mineral wool (A1 or A2)		Fire resistance class Test certificate	R <sub>w,R</sub> dB
			Thickness (mm)	Gross density (kg/m³)		
2 x 12.5 mm single side	CW 75/0.6	100	-	-	EI30 P-3029/2722TM	-

## Ideal for independent wall linings or shaft walls

### Special notes

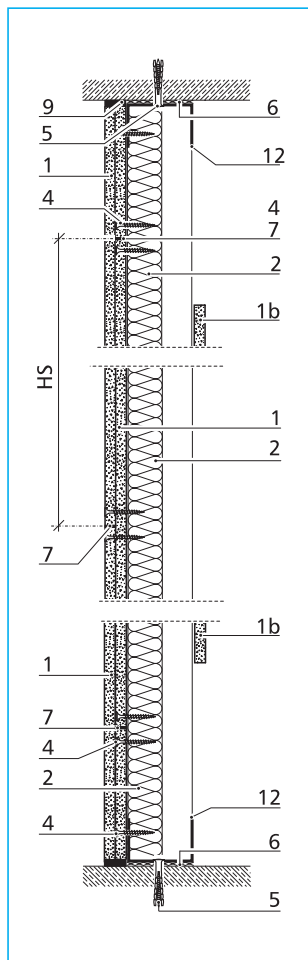
Tiled walls with AQUAPANEL® Cement Board Indoor and in-built alutop-inspection openings are tested for impermeability.

When building the metal framework, follow the standard guidelines supplied by Knauf.

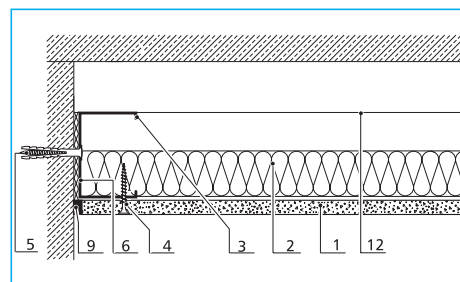
In rooms with continuous high levels of damp or chemical contamination such as commercial kitchens, swimming pools, saunas or chemical laboratories, use profiles with increased corrosion protection.

The stated construction physical characteristics, static and construction properties can only be achieved when exclusive use is made of recommended products.

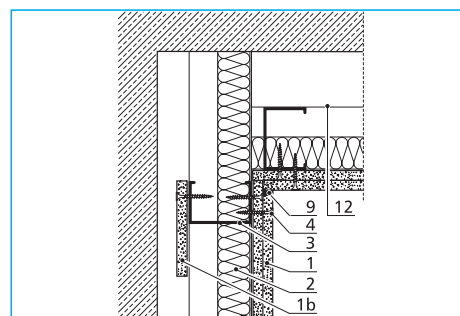
If larger loads ( $\geq 0.4$  kN/m) need to be fastened to the facings, the C wall profiles spaced at less than 1000 mm must be attached to the solid wall in such a way as to ensure tensile strength, e.g. using angled, galvanized flat steel 4/30 mm.



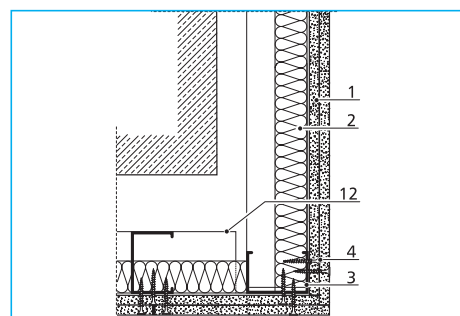
**EI30 wall lining, vertical section**



**Connection to solid walls**



**Formation of an inner corner**



**Formation of an outer corner**

### Material requirements per square metre of wall

Material requirements for independent wall linings, without off-cut and loss

Material	Single layer	Double layer
CW-profile	2.0 lfm	2.0 lfm
UW-profile	0.7 lfm	0.7 lfm
Sealing tape/partition wall kit	0.7 lfm	0.7 lfm
Approved fixing method	1.6 pieces	1.6 pieces
AQUAPANEL® Cement Board Indoor	1 m <sup>2</sup>	2.0 m <sup>2</sup>
AQUAPANEL® Maxi Screws	15 pieces	30 pieces
AQUAPANEL® Joint Adhesive (PU)	50 ml	100 ml
AQUAPANEL® Interior Primer	approx. 50 g	approx. 50 g
Insulation material	1 m <sup>2</sup> if necessary	
Permanently flexible sealant		

# Directly fastened wall linings

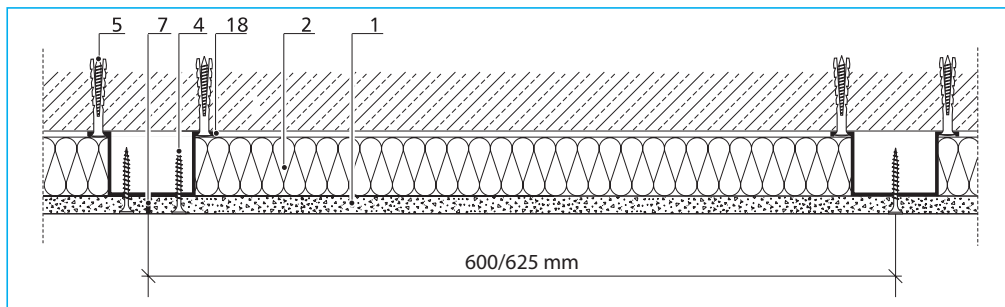
## To improve the heat insulation or sound insulation

### Special notes

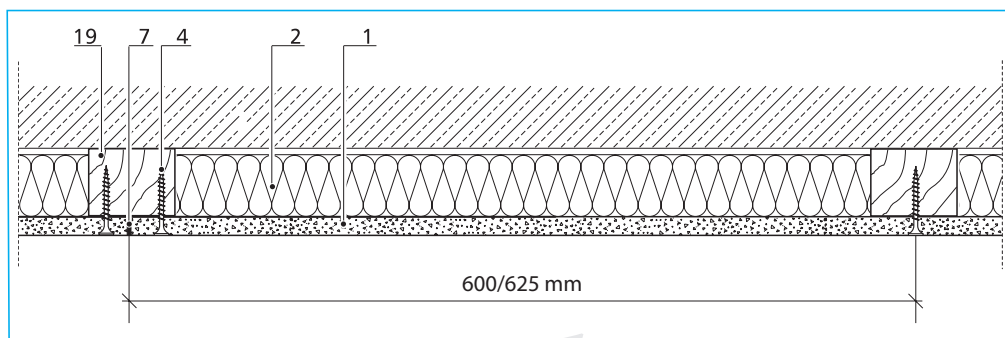
With continuous directly fastened wall linings there is no limitation in construction height.

To improve sound insulation, the fastening points must be spaced as widely as possible (maximum 625mm). The preferred option is an acoustically-engineered "weak" fastening using sprung tracks or an acoustical mounting.

Before improving the heat insulation with a wall lining, it is advisable to calculate the dew point and align construction to this, paying particular attention to the arrangement of the vapour retarder.



**Mounting on alignable acoustical mounting, hat profiles or direct hangers**

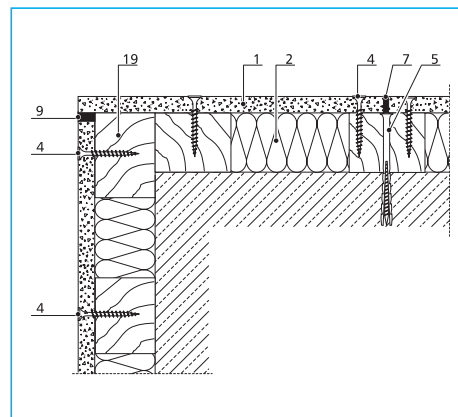


**Attachment to timber frame**

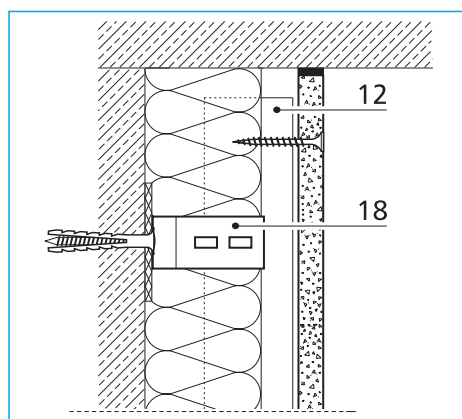
## Ideal as wall covering or improvement

### Description of material

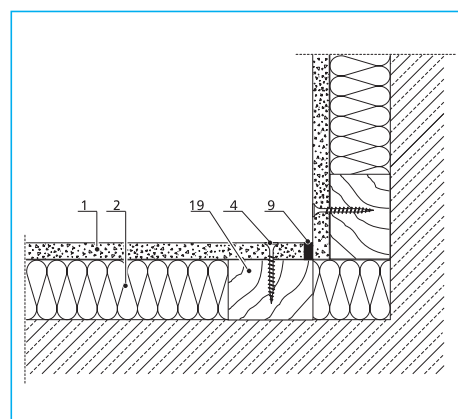
- 1 AQUAPANEL® Cement Board Indoor
- 2 Insulation material
- 4 AQUAPANEL® Maxi Screw
- 5 Approved fixing method
- 7 Glued joint with AQUAPANEL® Joint Adhesive (PU)
- 9 Permanently flexible sealant
- 12 UW-profile
- 18 Alignable acoustical mounting, Hat profile e.g. Knauf 98/15/06 or direct hanger
- 19 Wooden batten  
b =  $\geq 50$  mm



**Outer corner**



**Facing with directly attached UW-profile**



**Inner corner**

### Material requirements per square metre of wall

Material requirements for directly fastened wall linings, without off-cut and loss

Material	
AQUAPANEL® Cement Board Indoor	1 m <sup>2</sup>
AQUAPANEL® Maxi Screws	15 pieces
AQUAPANEL® Joint Adhesive (PU)	50 ml
AQUAPANEL® Interior Primer	approx. 50 g
Insulation material	0.90 m <sup>2</sup>
Permanently flexible sealant	

# Details for wet areas

## Connections to bath tubs and floor areas

### Description of material

- 1 AQUAPANEL® Cement Board Indoor
- 6 a Edge Insulation Strips
- 6 b Felt strips
- 9 Permanently flexible fungicidal joint mastic
- 9 a Sealing tape
- 15 Sealing e.g. surface sealing tape laid in Knauf surface seal
- 16 Flexible adhesive
- 17 Tiles or stoneware
- 25 Sealing ring
- 26 Hollow wall installation kit
- 27 Mounting plate

When constructing wet and damp rooms, it is essential to pay attention to the watertightness of the construction.

Installation passages as well as all joints and corners must be closed with permanently flexible, fungicidal joint mastic.

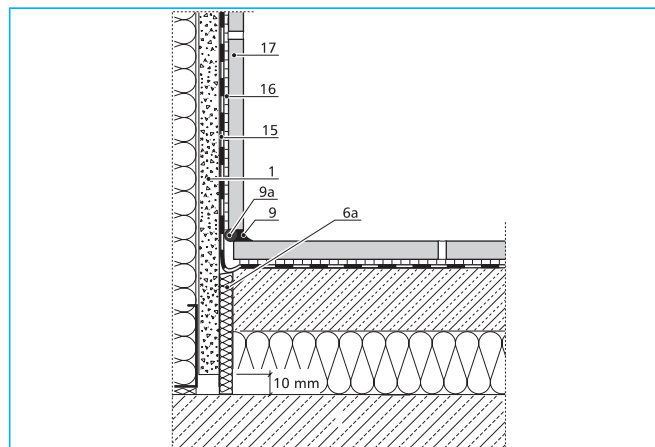
Passages for pipes or fittings must be made approx. 10 mm bigger than the relevant built-in installation. The gap between the sanitary items and the tiles (approx. 5 mm) must be closed with permanently flexible fungicidal joint mastic.

The procedure is done in two stages:

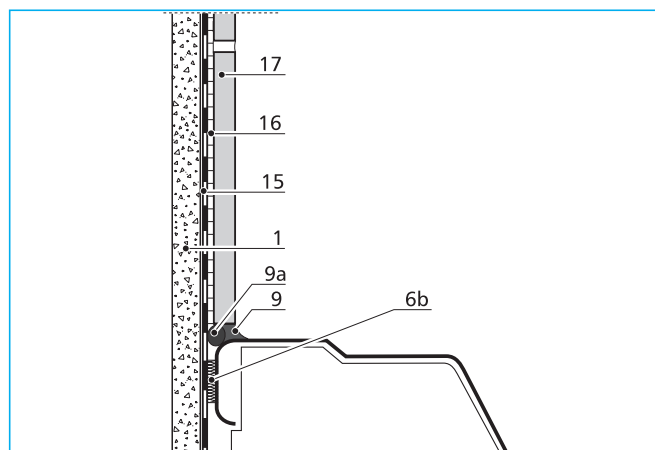
- After panelling and
- After tiling

Open board edges must be primed before injection to enhance adhesion of the joint mastic.

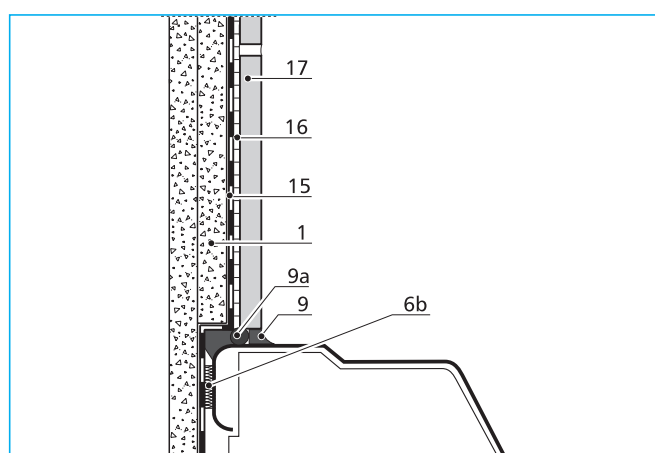
The transfer of impact sound via sanitary items on the partitions must be kept as low as possible. Therefore, an insulation strip e.g. felt must be placed between the sanitary items and the panels.



**Wall-floor-connection**



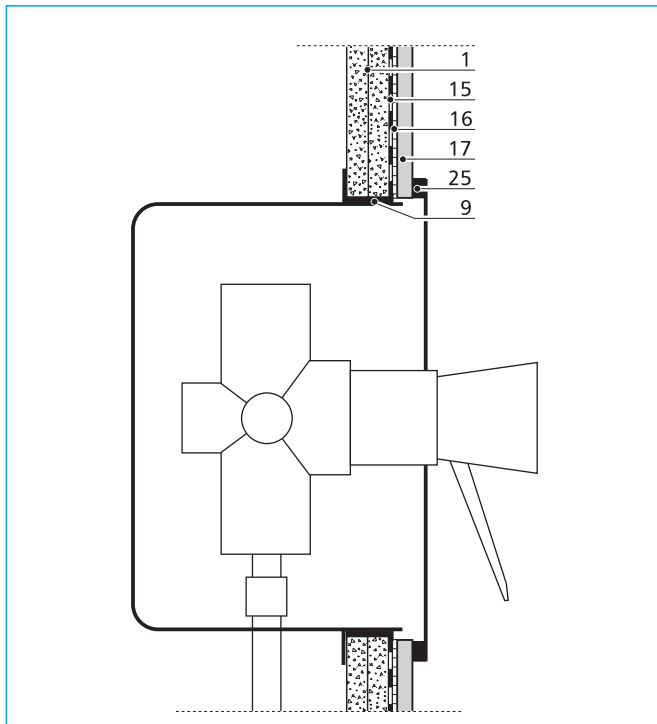
**Bath connection, single layer of panelling**



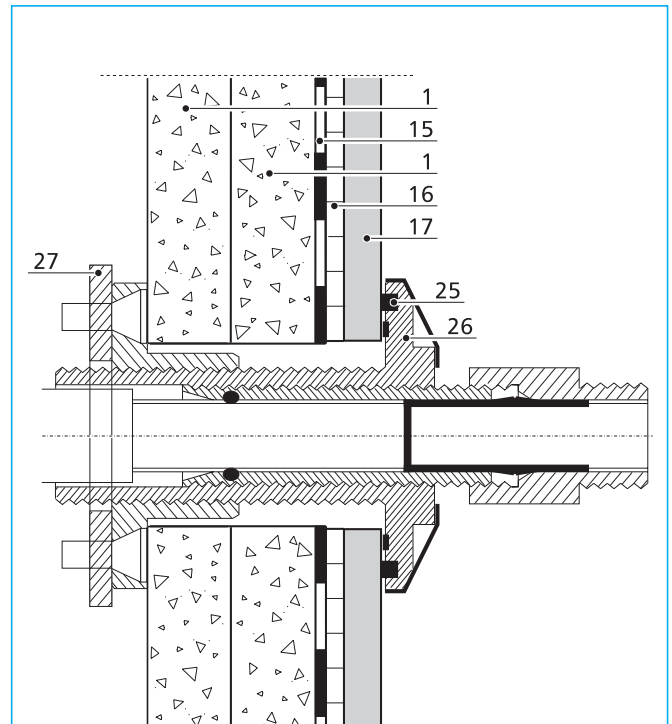
**Bath connection, double layer of panelling**

## When should AQUAPANEL® Cement Board Indoor be used?

Area of application	Sealing measures
Shower areas, bathrooms, kitchens, toilets in private households as well as sanitary areas in hotel rooms	Sealing of areas where walls meet or walls and floors meet; sealing of any cut-outs for pipes etc., if applicable.
Damp rooms and wet rooms such as public showers, sanitary areas in public and commercial sectors, as well as commercial kitchens, dairies and breweries, having limited chemical contamination and under high load.	Sealing of areas where walls meet or walls and floors meet; sealing of any cut-outs for pipes etc., if applicable. In addition, sealing of the entire surface of the AQUAPANEL® Cement Board is necessary.



**Flush-mounted fitting under plaster**



**Cut-out for pipe**

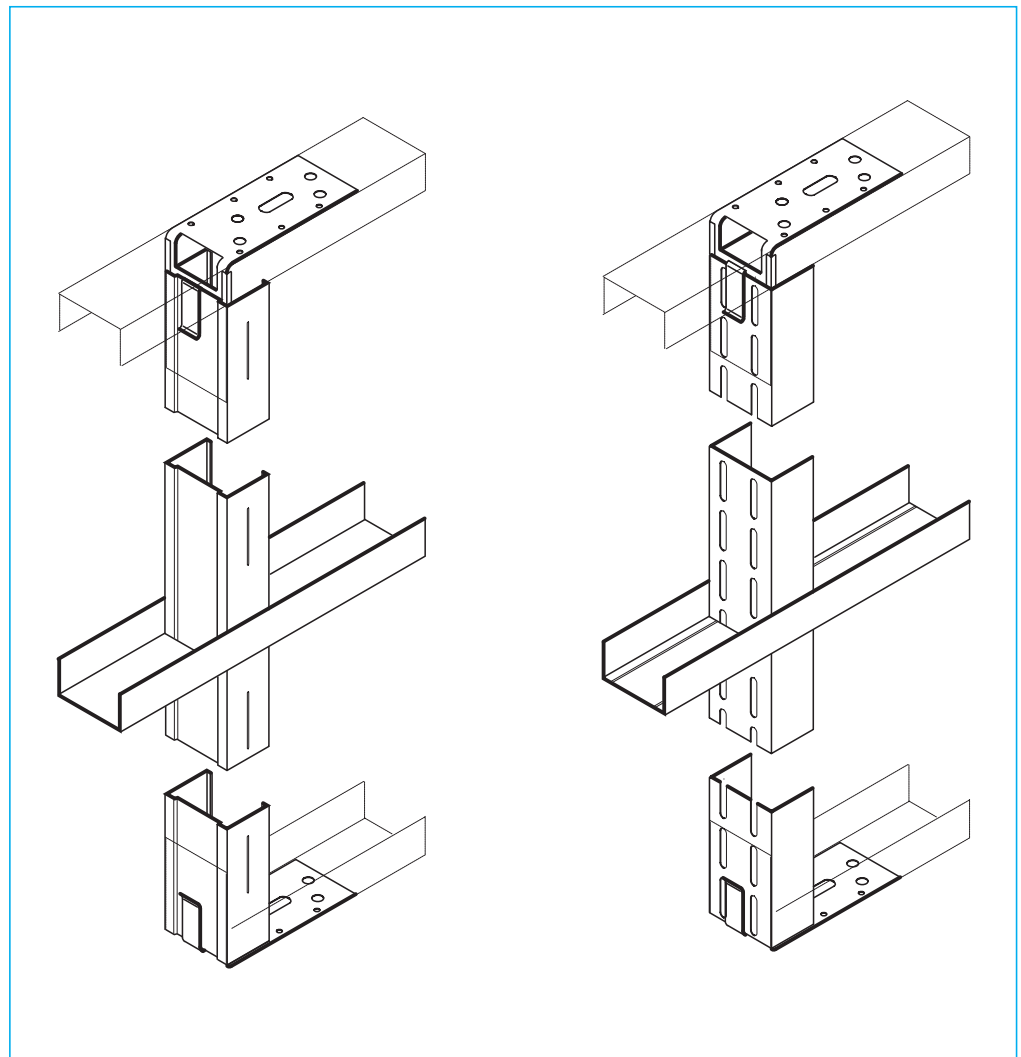
# Installation of door frames

## Selection of frameworks for AQUAPANEL® Cement Board Indoor

The formation of the framework depends on the wall height, the door width and the weights of the door panels.

### Maximum door weight

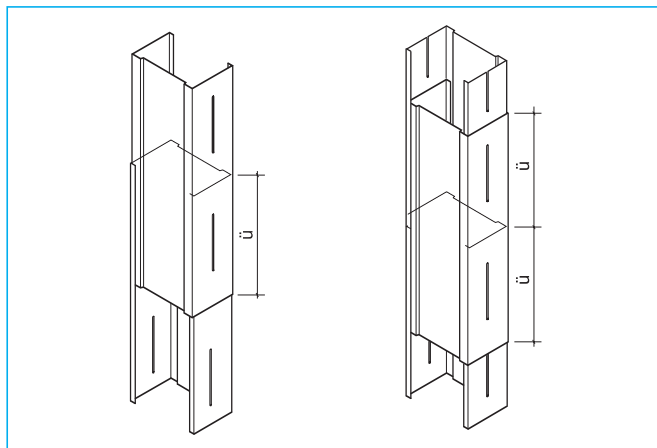
Profile	Weight
CW 50	≤ 30 kg
CW 75	≤ 40 kg
CW 100	≤ 40 kg
UA 50	≤ 50 kg
UA 75	≤ 75 kg
UA 100	≤ 100 kg



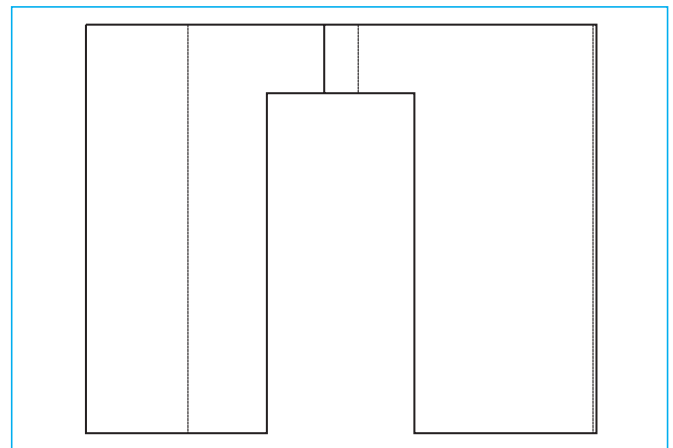
Variant CW-Profile

Variant UA-Profile

Profile	Overlap ü
CW / UA 50	≥ 50 cm
CW / UA 75	≥ 75 cm
CW / UA 100	≥ 100 cm



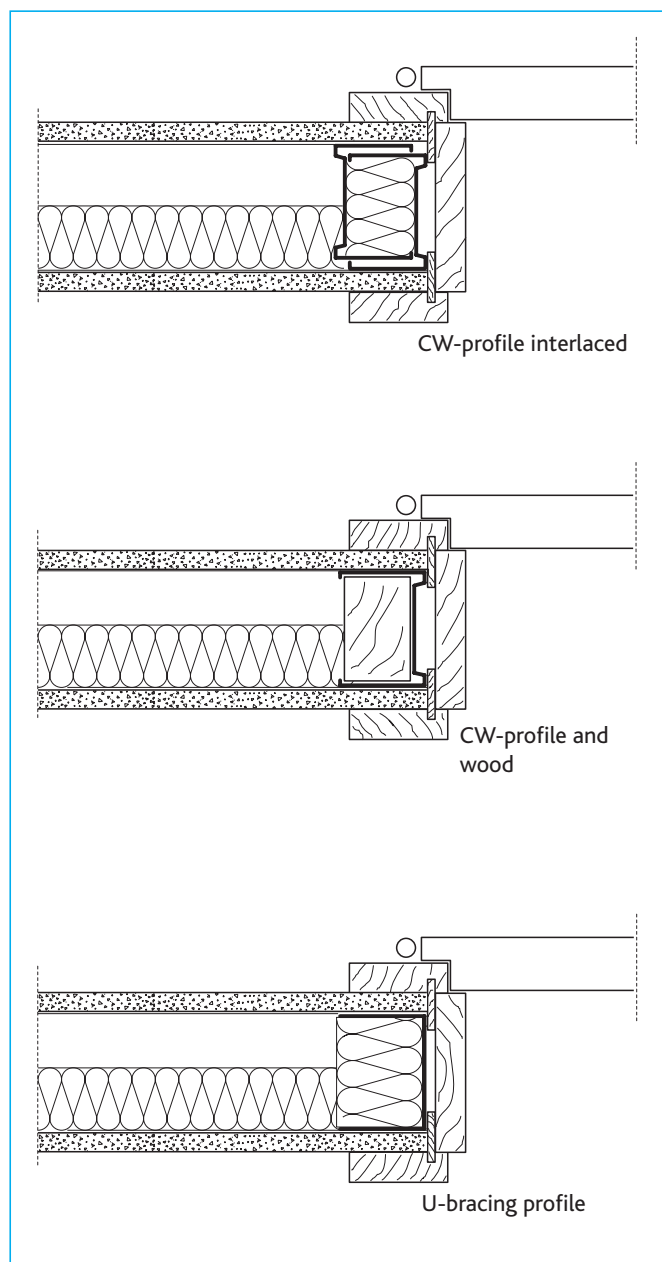
Extension of CW-profiles



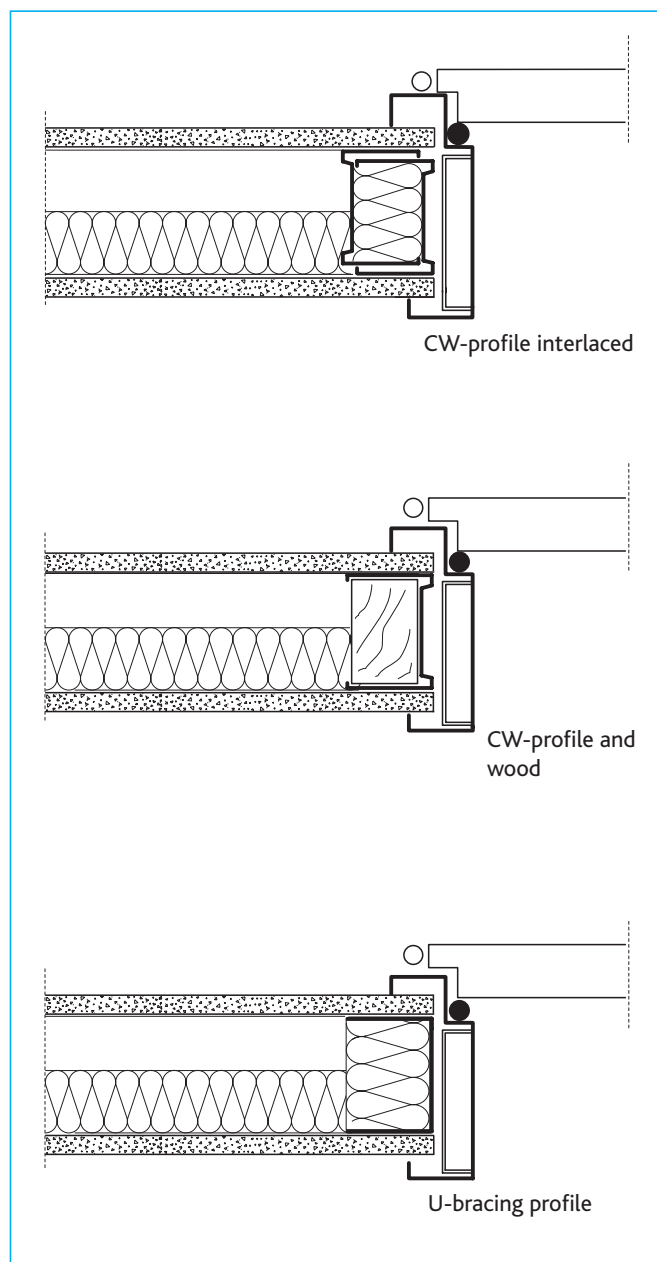
Construction of doorway



## Details



*Inside door with wooden frame*

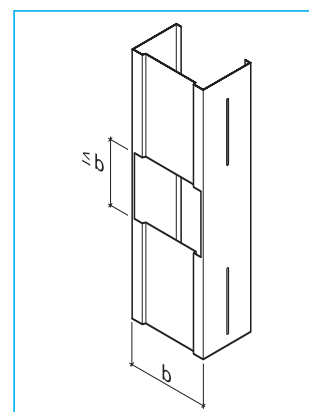


*Inside door with metal frame*

### Maximum cut-outs in CW-profiles

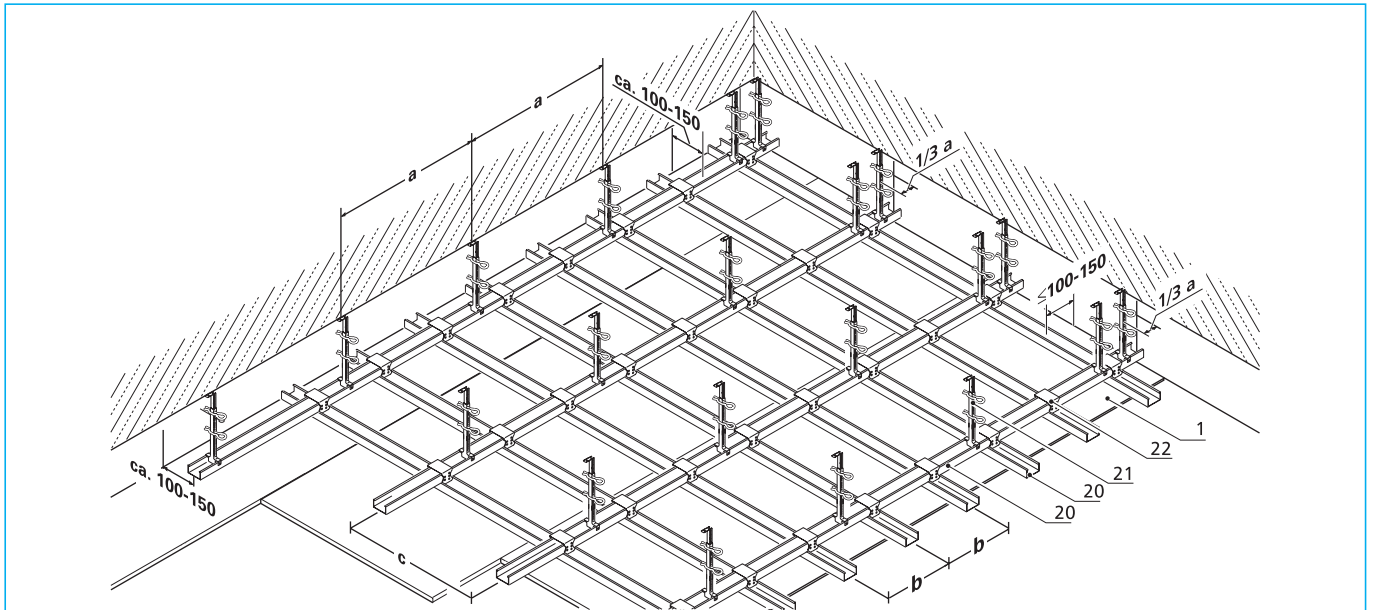
As well as the standard H-punch, the following holes can be produced:

Metal stud frame	Layer	Number of holes
CW 50	2-sided	1 per profile
CW 75/100	1 side	1 per profile
	2-sided	2 per profile



# Suspended ceiling with metal framing

## Fire resistance period during fire load from the room side: EI30



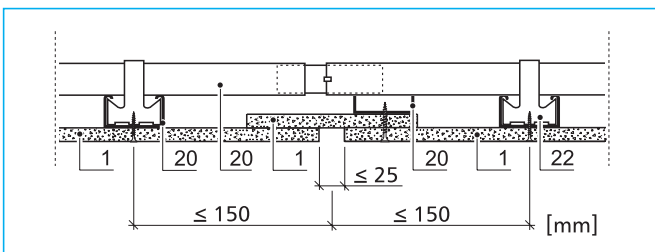
Suspended ceiling with metal framework, viewed from above

### Distance between base battens/supporting laths and suspension points

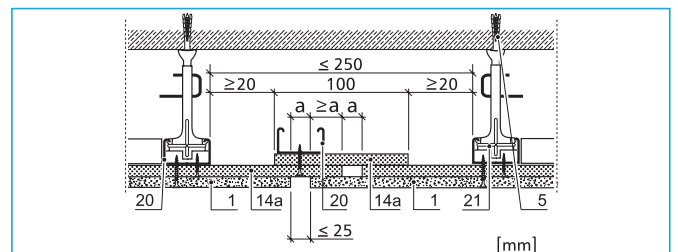
Layer options	Ceiling weight	Hangers	Distance (mm)		
			a	b	c
1) 1 x 12.5 mm	approx. 20 kg/m <sup>2</sup>	0.40 kN	750	300/312.5	1000
2) 1 x 12.5 mm AQUAPANEL® Cement Board Indoor + 1 x 12.5 mm GKF	approx. 35 kg/m <sup>2</sup>	0.40 kN	750	300/312.5	750
3) 2 x 12.5 mm AQUAPANEL® Cement Board Indoor	approx. 39 kg/m <sup>2</sup>	0.40 kN	525	300/312.5	750

### Fire grading period during fire load from the room side

Layer	Mineral wool (A1, Melting point >1000°C)		Fire resistance class	
	Thickness (mm)	Gross density (kg/m <sup>3</sup> )	Test certificate	Test certificate
1) 1 x 12.5 mm AQUAPANEL® Cement Board Indoor + 1 x 12.5 mm GKF	-	-	EI30	3461/7923-Mer
	-	-	EI30	3461/7923-Mer
	-	-	EI30	3461/7923-Mer
2) 2 x 12.5 mm AQUAPANEL® Cement Board Indoor	2 x 40	50	EI30	c. Pr-02-02.092



Expansion joint



Expansion joint fire protection requirements

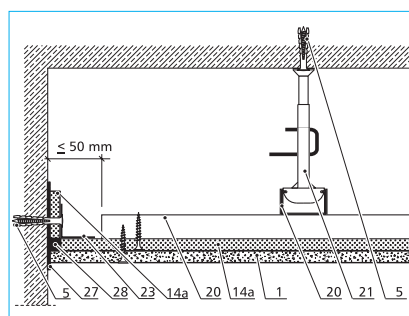
## Ideal for residential units, administration or commercial buildings

### Description of material

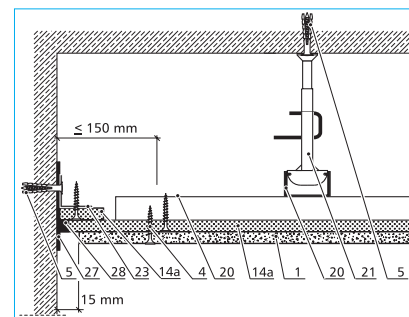
- 1 AQUAPANEL® Cement Board Indoor
- 4 AQUAPANEL® Maxi Screw
- 5 Construction authority-approved fixing methods
- 9 Permanently flexible sealant
- 14 a Knauf fire protection plate GKF, 12.5 mm
- 20 C-ceiling profile EN 13964
- 21 Nonius hanger with safety clips or direct ceiling hanger
- 22 Cross connector
- 23 Angle profile
- 24 U-Section profile e.g. UD-Profile 28/27
- 27 Dividing strips
- 28 Filling

### Abbreviations

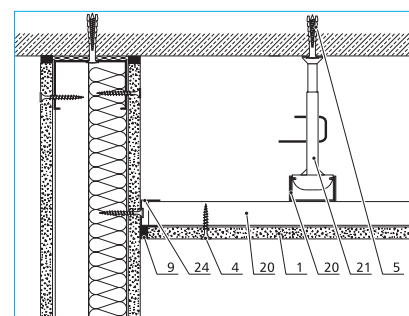
- a Distance (mm) of the Nonius or direct ceiling hanger
- b Distance (mm) of the bearing profile (C ceiling-profile 60/27/0.6)
- c Distance (mm) of the basic profile (C-ceiling profile 0/27/0.6)



**Connection to solid walls for suspended ceilings with fire protection requirements**



**Schattenfuge**



**Connection to light partition walls for suspended ceilings without fire protection requirements**

### Special notes

- The framework of suspended ceilings is constructed in accordance with EN 13964.
- Please follow the installation instructions on page 14.
- Built-in units such as lamps and ventilation extractors may load the framework in terms of its bearing capability.
- Large loads must be attached to separate suspensions.
- Suspended ceilings with fire protection requirements may not be stressed with extra loads.
- In rooms with continuous high levels of damp or chemical

contamination such as commercial kitchens, swimming pools, saunas or chemical laboratories, use profiles with increased corrosion protection.

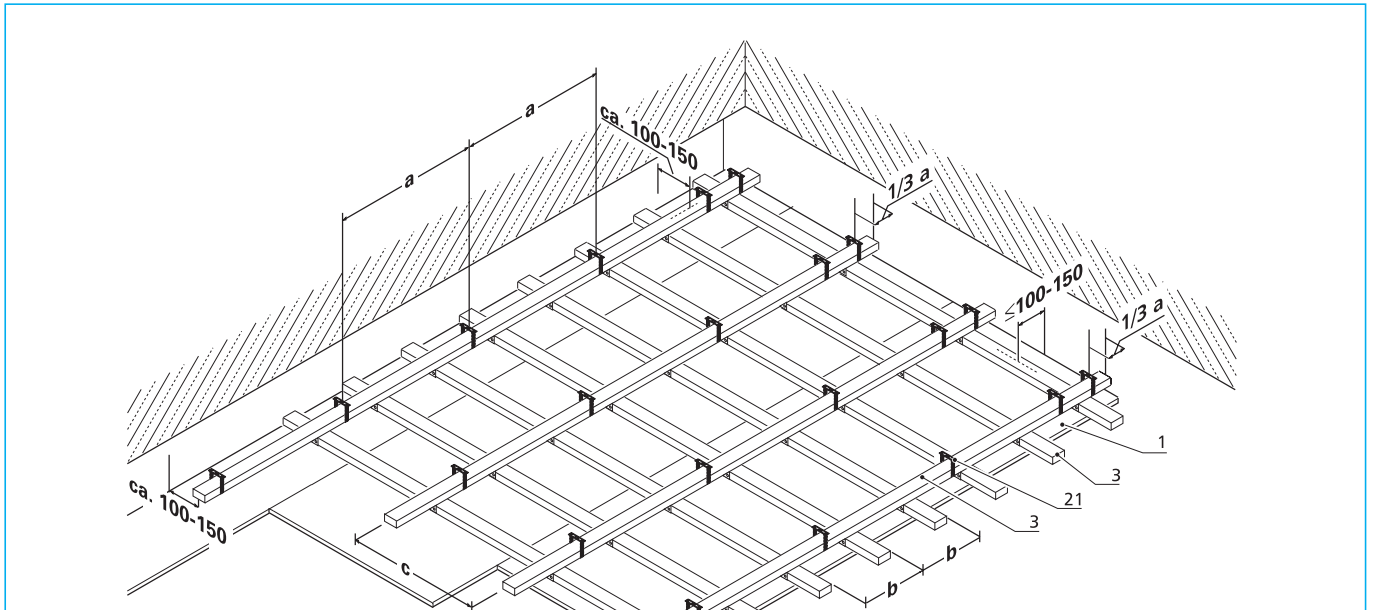
- A load case of internal pressure is not taken into account in the above construction information.
- The ceiling void must remain free from condensation.

### Material requirements per square metre ceiling

AQUAPANEL® material requirements for suspended ceiling with metal framing with AQUAPANEL® Cement Board Indoor, without offcut and loss.

Material	Single layer	Double layer	
	1 x AQUAPANEL® Cement Board Indoor	1 x AQUAPANEL® Cement Board +	2 x AQUAPANEL® Cement Board
CD profile according to EN 13964	4.6 lfm	1 x GKF	2 m <sup>2</sup>
Cross connector according to EN 13964	4.1 pieces	1 m <sup>2</sup>	-
Nonius hanger with safety clip	1.8 pieces	25 pieces	50 pieces
Approved fixing method	1.8 pieces	19 pieces	-
AQUAPANEL® Cement Board Indoor	1 m <sup>2</sup>	0.7 kg	1.4 kg
12.5 mm GKF	-	2.1 lfm/m <sup>2</sup>	4.2 lfm/m <sup>2</sup>
AQUAPANEL® Maxi Screws	25 pieces	approx. 50 g	approx. 50 g
Quick-build screws	-	-	1 m <sup>2</sup>
AQUAPANEL® Joint Filler - Grey	0.7 kg	-	-
AQUAPANEL® Joint Adhesive (PU)	2.1 lfm/m <sup>2</sup>	-	-
AQUAPANEL® Interior Primer	approx. 50 g	-	-
Mineral wool (melting point > 1000° C)	-	-	-

# Suspended ceiling with timber framing



Suspended ceiling with wooden framework, viewed from above

## Distance between base battens/supporting laths and suspension points

Layer with AQUAPANEL® Cement Board Indoor	Ceiling weight	Distance (mm)		
		a	b	c
1) 1 x 12.5 mm	approx. 20 kg/m <sup>2</sup>	600	300/312.5	600
2) 1 x 12.5 mm + 1 x GKF 12.5	approx. 35 kg/m <sup>2</sup>	600	300/312.5	600
<b>Directly-secured with only one batten</b>				
3) 1 x 12.5 mm	approx. 20 kg/m <sup>2</sup>	-	300/312.5	600
4) 2 x 12.5 mm	approx. 35 kg/m <sup>2</sup>	-	300/312.5	600

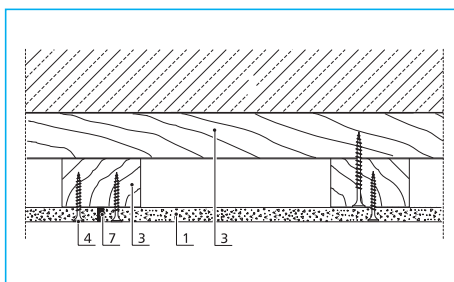
## Especially suitable in residential buildings and in wooden constructions

### Description of the material

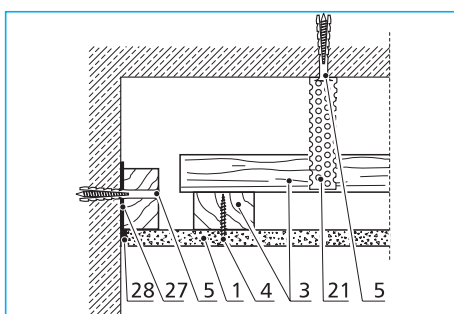
- 1 AQUAPANEL® Cement Board Indoor
- 2 Insulation material coat
- 3 Batten and lath framework 40/60
- 4 AQUAPANEL® Maxi Screw
- 5 Construction authority-approved fixing methods
- 7 AQUAPANEL® Joint Filler – Grey with AQUAPANEL® Interior Tape
- 14 a Knauf fire protection plate GKF, 12.5 mm
- 21 Direct hanger
- 27 Dividing strips
- 28 Filling
- 29 Expansion joint profile

### Abbreviations

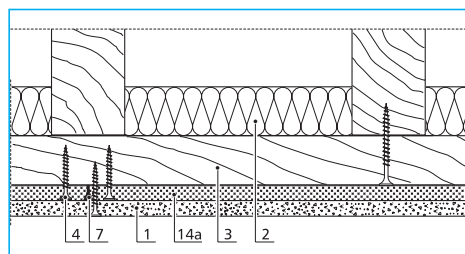
- a Distance (mm) of direct hanger
- b Distance (mm) of the batten framework 40/60
- c Distance (mm) of the lath framework 40/60



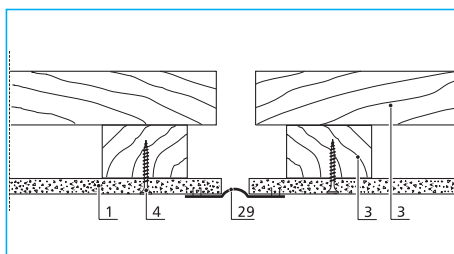
**Direct fastening under solid ceilings, e.g. garages or cellar ceilings**



**Connection to solid walls**



**Direct fastening under wooden ceilings**



**Expansion joint for ceilings without fire protection requirements**

### Special Notes

- The framework of suspended ceilings is constructed in accordance with EN 13964.
- Please follow the installation instructions on page 14.
- Built-in units such as lamps and ventilation extractors, may load the framework in terms of its bearing capability.
- Large loads must be attached to separate suspensions.
- Suspended ceilings with fire protection requirements may not be stressed with extra loads.
- A load case of internal pressure is not taken into account in the above construction information.

The stated construction physical characteristics, static and construction properties can only be achieved when exclusive use is made of recommended products.

### Material requirements per square metre ceiling

Material requirements for suspended ceiling with AQUAPANEL® Cement Board Indoor, without offcut and loss, construction with lath and batten framework

Material	Single layer	Double layer
Wood panel 40/60 according to EN 13964	5.3 lfm	5.3 lfm
Wood screws	6.3 pieces	6.3 pieces
Direct hanger	3.5 pieces	3.5 pieces
Approved fixing method	3.5 pieces	3.5 pieces
AQUAPANEL® Cement Board Indoor	1 m <sup>2</sup>	1 m <sup>2</sup>
GKF 12.5 mm	-	1 m <sup>2</sup>
AQUAPANEL® Maxi Screws	25 pieces	25 pieces
Quick build screws	-	19 pieces
AQUAPANEL® Joint Filler - Grey	0.7 kg	0.7 kg
AQUAPANEL® Joint Adhesive (PU)	2.1 lfm/m <sup>2</sup>	2.1 lfm/m <sup>2</sup>
AQUAPANEL® Interior Primer	approx. 50 g	approx. 50 g

# Basis of calculation

## Basis of calculation for wall systems with AQUAPANEL® Cement Board Indoor (wall area: 2.70 m x 3.00 m)

Layer		
Material requirement	Unit	Per m <sup>2</sup>
AQUAPANEL® Cement Board Indoor, single layer	m <sup>2</sup>	1
AQUAPANEL® Maxi Screws	piece	15
AQUAPANEL® Joint Adhesive (PU) (1 cartridge for 6.5 m <sup>2</sup> )	ml	50
AQUAPANEL® Interior Primer (primer/water 1:2)	g	approx. 40-60
AQUAPANEL® Joint Filler and Skim Coating - White (d ≥ 4mm)	kg	3.5
AQUAPANEL® Interior Reinforcing Mesh	m <sup>2</sup>	1.1 m
AQUAPANEL® Q4 Finish	kg per 1 mm thickness	approx. 1.7
Permanently flexible sealant		
Installation time (min.)	Per m <sup>2</sup> (installation by hand)	Per m <sup>2</sup> (installation by machine)
Installation of AQUAPANEL® Cement Board Indoor, including screws and joint adhesive	15 Minutes	-
AQUAPANEL® Interior Primer	1 Minute	-
AQUAPANEL® Joint Filler and Skim Coating - White	12-15 Minutes	7 Minutes
AQUAPANEL® Interior Reinforcing Mesh	4-5 Minutes	4-5 Minutes
AQUAPANEL® Q4 Finish	approx. 9 Minutes (± 2 Minutes, depends on surface quality)	-

## Basis of calculation for ceiling systems with AQUAPANEL® Cement Board Indoor (ceiling area: 3.00 m x 4.00 m)

Layer		
Material requirement	Unit	Per m <sup>2</sup>
AQUAPANEL® Cement Board Indoor, single layer	m <sup>2</sup>	1
AQUAPANEL® Maxi Screws	piece	25
AQUAPANEL® Interior Tape 10cm width	lfm/m <sup>2</sup>	2.1
AQUAPANEL® Interior Primer	g	approx. 40-60
AQUAPANEL® Joint Filler - Grey	kg	0.7
AQUAPANEL® Joint Filler and Skim Coating - White (d ≥ 4mm)	kg	3.5
AQUAPANEL® Interior Reinforcing Mesh	m <sup>2</sup>	1.1 m
AQUAPANEL® Q4 Finish	1 mm thickness	approx. 1.7
Montage time (min.)	Per m <sup>2</sup> (installation by hand)	Per m <sup>2</sup> (installation by machine)
Montage of AQUAPANEL® Cement Board Indoor, including screws, joint filler and tape	18 Minutes	-
AQUAPANEL® Interior Primer	1 Minute	-
AQUAPANEL® Joint Filler and Skim Coating - White	12-15 Minutes	7 Minutes
AQUAPANEL® Interior Reinforcing Mesh	4-5 Minutes	4-5 Minutes
AQUAPANEL® Q4 Finish	approx. 9 Minutes (± 2 Minutes, depends on surface quality)	-

# Technical data

## Physical properties

Width (mm)	900
Length (mm)	1200/1250/2400/2500
Thickness (mm)	12.5
Min. bending radius (m) for 900 mm wide board	3
Min. bending radius (m) for 300 mm wide strip	1
Weight (kg/m <sup>2</sup> ) approx.	approx. 15
Dry density (kg/m <sup>3</sup> ) approx.	approx. 1050
Flexural strength (N/mm <sup>2</sup> )	≥ 6.2
pH value	12
Modulus of elasticity (N/mm <sup>2</sup> ) approx.	approx. 5000
Thermal conductivity $\lambda_r$ (W/(m·K))	0.36
Thermal expansion (10 <sup>-6</sup> /K)	7
Water vapour diffusion resistance $\mu$ (-)	30
Change in dimensions from dry to water-saturated (%)	0.11
Building Material Class	Non-combustible; A1 according to EN 13501

## Sample specification

Item	Unit	Specification	Individual price (€)	Total price (€)
1.1	m	Framework made from wooden single fixture mount, stud spacing o.c. distance 600/625mm		
1.2	m	Framework made from metal single fixture mount, galvanized UW/CW profile, stud spacing o.c. distance 600/625mm		
2.1	m <sup>2</sup>	Insulating wall panel as cavity insulation, pushed tightly between studs to prevent sliding		
3.1	m <sup>2</sup>	Additional panelling of the profile with panelling strips (shaft wall)		
3.2	m <sup>2</sup>	Single-layer, double-sided panelling (single-sided for shaft wall) made from AQUAPANEL® Cement Board Indoor, joints fixed with AQUAPANEL® Joint Adhesive (PU), screwed together with AQUAPANEL® Maxi Screws		
3.3	m <sup>2</sup>	Two-layered, double-sided panelling (single-sided for shaft wall) made from AQUAPANEL® Cement Board Indoor (second layer installed on top of first layer but with joints staggered), joints fixed with AQUAPANEL® Joint Adhesive (PU), screwed onto metal framework with AQUAPANEL® Maxi Screws		
4.1	m <sup>2</sup>	Priming of the wall surface with AQUAPANEL® Interior Primer		
5.1	m <sup>2</sup>	Tiling of the wall surface using flexible tile adhesive, e.g. Knauf Flex Adhesive 25 Plus and flexible joint mortar, e.g. Knauf Rapid Flex Joint		
6.1	m <sup>2</sup>	Smoothing of the untiled area with AQUAPANEL® Joint Filler and Skim Coating - White, reinforcing of the entire surface with AQUAPANEL® Interior Reinforcing Mesh		

Technical data

**Knauf USG Systems GmbH & Co. KG**  
Zur Helle 11  
D-58638 Iserlohn  
Germany

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