

DREAMERS

Design REsearch, implementation And Monitoring of Emerging technologies for a new generation of Resilient Steel buildings

Report with technical specifications for non-structural elements

Deliverable D3.2

WP 3: Executive design of the electric and mechanical systems, structural design of the façade and of the non-structural components, definition of the technical specifications to achieve the targeted sustainability

Task 3.2: Report with technical specifications for non-structural elements

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1. Introduction

This report summarizes the technical specifications for non-structural components (Knauf drywall system for partition, external wall and modular ceiling). For each system, the product datasheets are appended to the technical description.

2. Partition Wall – Single metal stud frame – Fire rating 120

Knauf metal stud partition W112: single metal stud frame with a double-layer cladding on each side with a double layer of Knauf Diamant board and sound insulation panels in the gap.

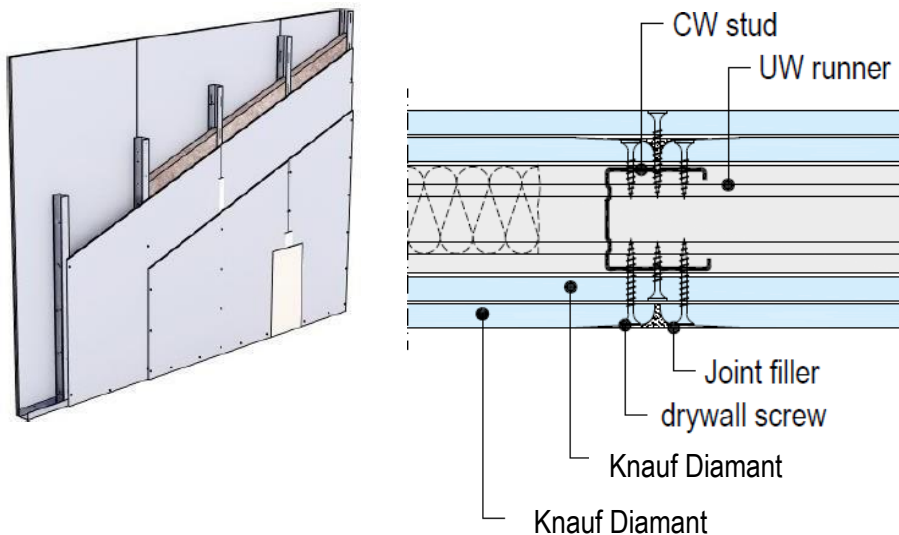


Fig. 1 – W112 Axonometry and horizontal section

Delivery and installation of a non-load-bearing single-stud interior wall with metal framework, cladded with a double layer of **Knauf Diamant** on each side.

Wall thickness: 125 mm Wall height: 4,00 m

Sound Insulation rating = 63 dB

The solution consists of:

- A single metal frame with Knauf profiles made up of steel DX51D+Z-N-A-C with a thickness of 0,6 mm, CE marked according to EN 14195 – 2005, composed of:
 - U runners: **U profile 40/100/40** mm;
 - C studs: single **C profile 50/100/50** (*) mm, maximum spacing 600 mm.

(*) check the profile section and the spacing according to the max. Height of the partition and the designed load.

- One layer of glass mineral wool, conforming EN 13162 - R2F A1
- **Knauf Diamant** (DFH2IR) board as inside and outside layer of the cladding, CE marked according to EN 520, fixed to the C studs with drywall screws with the following characteristics:
 - λ : 0.25 W/mK
 - Weight 12.8 kg/m²
 - fire reaction class A2-s1,d0 referring EN13501-1
 - VOC emission: A+
 - Density: c.a. 1000 kg/m³
 - EPD

Treat the joints between boards with Knauf jointfiller and reinforcing tape. Cover the heads of the screws with Knauf jointfiller.



K716F.it

Diamant®

05/2020

Knauf Diamant®

Lastre in gesso rivestito GKFI altamente prestazionali

Descrizione	Campo di applicazione	Caratteristiche
■ Classificazione della lastra - EN 520 DFH2IR ■ Colore del cartone blu ■ Colore marchio retro: rosso - Formati - Spessore lastre 12,5 mm ■ 2000x1200 mm Art. 272305 ■ 3000x1200 mm Art. 272307 - altri formati su richiesta - Stoccaggio - Conservare su pallet in luogo asciutto - Normativa di riferimento - UNI EN 520	Le lastre Knauf Diamant® sono lastre in gesso rivestito altamente prestazionali, vengono utilizzate in ambienti interni sia in nuove realizzazioni che per ristrutturazioni, conciliano elevate esigenze di isolamento acustico, requisiti di sicurezza antincendio, grande robustezza e sono utilizzabili anche in ambienti umidi. Impiego: ■ Aule scolastiche ■ Corridoi / zone di passaggio ■ Ospedali / case di cura ■ Edilizia residenziale ■ Uffici ■ Alberghi Per locali umidi si intendono quelli con umidità relativa ambientale ≤ 70% (ad esempio bagni o cucine domestiche). Fissaggio: Utilizzare le apposite viti Diamant® per il fissaggio delle lastre Diamant® sulle orditure metalliche: ■ Viti XTN 23 Ø3,9 ■ Viti XTN 38 Ø3,9 ■ Viti HGP 55 Ø3,9	■ Lastra universale per ogni impiego ■ Pareti a elevata resistenza meccanica ■ Possibilità di maggiori carichi applicati ■ Maggiore durezza superficiale ■ Ridotto assorbimento dell'umidità ■ Maggiore coesione del nucleo sotto l'azione del fuoco ■ Nucleo speciale di gesso per elevato isolamento acustico ■ Facile da applicare ■ Non infiammabile ■ Curvabile ■ Nucleo armato con fibre minerali e additivi per una migliore coesione sotto l'azione del fuoco

K716F.it Knauf Diamant®

Lastre in gesso rivestito GKF1 altamente prestazionali



Dati tecnici

■ Dimensioni della lastra (in mm):



■ Forma dei bordi

- Bordi longitudinali rivestiti di cartone: **AK**



- Bordi trasversali tagliati: **SK**



■ Raggi di curvatura minimi

- A secco: $r \geq 2.750 \text{ mm}$

- A umido: $r \geq 1.000 \text{ mm}$



Tipo di lastra:

Tipo di lastra:	DFH2IR	EN 520
Classe di reazione al fuoco EN 13501-1:	A2-s1,d0	EN 520
Fattore di resistenza alla diffusione del vapore acqueo μ :		EN ISO 10456
■ a secco	10	
■ a umido	4	
Conducibilità termica λ :	W/(m·K) 0,25	EN ISO 10456
Capacità d'assorbimento d'acqua (totale):	% ≤ 10	EN 520
Densità	kg/m ³ ≥ 1000	
Peso della lastra:	kg/m ² ca. 12,8	
Carico a flessione		EN 520
- Longitudinale:	N ≥ 725	
- Trasversale:	N ≥ 300	
Durezza superficiale (indentazione)	mm Ø ≤ 15	EN 520

Certificazioni



EPD secondo ISO 14025 e EN 15804

Note

Per la posa fare riferimento alle indicazioni riportate sulla norma UNI 11424 e alla documentazione tecnica Knauf.

Per le lastre Diamant® sono disponibili anche:

- DoP (Dichiarazione di Prestazione)
- Scheda di Sicurezza
- Scheda ambientale
- EPD Environmental Product Declaration

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Frameworks

04/2021

C PROFILE 50/100/50

Metal frameworks

Description

Metal framework for Knauf system self-bearing walls and suspended ceilings.

All Knauf frameworks comply with the UNI EN 14195-2005 and DIN 18182-1 standards concerning measurements, material identification, checks, and markings.

KNAUF frameworks are made of DX 51 D+Z-MN-A-C steel with a yield strength $\geq 300 \text{ N/mm}^2$, in compliance with the UNI EN 10346-2009 standard. The Zn 99% primary zinc coating complies with the UNI EN 10346 standard. All framework surfaces are protected through passivation and oiling during the profiling stage.

Storage

Store in closed and covered warehouses. Should you have to store them outdoors, place the packages slightly tilted, to allow rainwater to slide down, and protect them with suitably ventilated polyethylene sheets to prevent condensation.

Trademarks and identification

Knauf frameworks are marked on the flanges with a black ink print that identifies the manufacturer, production plant, production data, and reference standards for both framework production and raw material conformity.

Notes

Use "nail tip" fasteners for 0.6 mm thick profiles.
Use Tek screws for 0.8-1.0 mm thick profiles.

Features

- Non-combustible
- Boxed profiles available upon request
- Suitable for Knauf D11 self-bearing indoor systems
- Suitable for Knauf W11 indoor systems

C PROFILE 50/100/50

Metal frameworks



Geometric dimensions and mechanical features



* Nominal profile dimensions in mm

0.6 mm thickness	
Cross-sectional area	128.10 mm ²
Highest moment of inertia	209579 mm ⁴
Lowest moment of inertia	39835 mm ⁴
0.8 mm thickness	
Cross-sectional area	171.47 mm ²
Highest moment of inertia	279778 mm ⁴
Lowest moment of inertia	54156 mm ⁴
1.0 mm thickness	
Cross-sectional area	205.58 mm ²
Highest moment of inertia	330857 mm ⁴
Lowest moment of inertia	57813 mm ⁴

Profile extension

Knauf Profile	Overlap
*C/slotted 50	≥ 50 cm
*C/slotted 75	≥ 75 cm
*C/slotted 100	≥ 100 cm

Profile joints must be staggered vertically.
Crimp or tighten the profiles in the overlap area



Crimp tool

Solution 1	Solution 2	Solution 3
2 C profiles boxed one inside the other	2 C profiles secured and boxed with an additional C profile	2 C or slotted profiles secured and bound at the back with an additional U profile

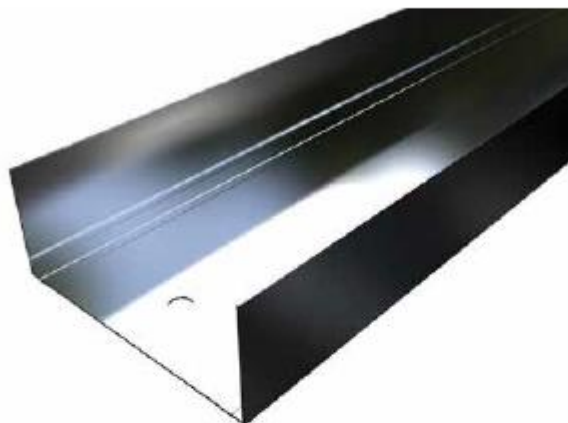
Table (product code, thickness, dimensions, and weight)

Description	Length (mm)	Width (mm)	m/pack (mm)	Weight/m Pcs/pack
C Profile 50/100/50 th. 0.6 mm	3000	100	288	0.95 kg/m
	3500	100	384	8 pcs/box
	4000	100	-	12 boxes/pack
	Length: up to 6000 mm	100	-	8 pcs/box 6 boxes/pack
C Profile 50/100/50 th. 0.8 mm	Length: up to 6000 mm	100	-	1.24 kg/m 8 pcs/box 12 boxes/pack
	Length: up to 6000 mm	100	-	8 pcs/box 6 boxes/pack
C Profile 50/100/50 th. 1.0 mm	Length: up to 8000 mm	100	upon request	1.59 kg/m 8 pcs/box 6 boxes/pack

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Frameworks

04/2021

U TRACK PROFILE 40/100/40

Metal frameworks

Description

Metal framework for Knauf system self-bearing walls and suspended ceilings.

All Knauf frameworks comply with the UNI EN 14195-2005 and DIN 18182-1 standards concerning measurements, material identification, checks, and markings.

KNAUF frameworks are made of DX 51 D+Z-MIN-A-C steel with a yield strength ≥ 300 N/mm², in compliance with the UNI EN 10346-2009 standard. The Zn 99% primary zinc coating complies with the UNI EN 10346 standard. All framework surfaces are protected through passivation and oiling during the profiling stage.

Storage

Store in closed and covered warehouses. Should you have to store them outdoors, place the packages slightly tilted, to allow rainwater to slide down, and protect them with suitably ventilated polyethylene sheets to prevent condensation.

Trademarks and identification

Knauf frameworks are marked on the flanges with a black ink print that identifies the manufacturer, production plant, production data, and reference standards for both framework production and raw material conformity.

Notes

Use "nail tip" fasteners for 0.6 mm thick profiles.
Use Tek screws for profiles 0.8 mm thick profiles

Features

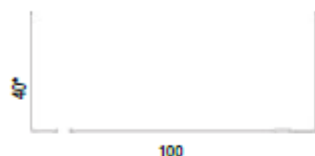
- Non-combustible
- Boxed profiles available upon request
- Suitable for Knauf D11 self-bearing indoor systems
- Suitable for Knauf W11 indoor systems

U TRACK PROFILE 40/100/40

Metal frameworks



Geometric dimensions and mechanical features



* Nominal profile dimensions in mm

0.6 mm thickness	
Cross-sectional area	105.67 mm ²
Highest moment of inertia	162434 mm ⁴
Lowest moment of inertia	15477 mm ⁴
0.8 mm thickness	
Cross-sectional area	140.65 mm ²
Highest moment of inertia	215370 mm ⁴
Lowest moment of inertia	20487 mm ⁴

Table (product code, thickness, dimensions, and weight)

Description	Length (mm)	Width (mm)	m/pack (mm)	Weight/m Pcs/pack
U Track Profile 40/100/40 th. 0.6 mm	3000	100	360	0.80 kg/m 8 pcs/box 15 boxes/pack
	4000	100	640	
U Track Profile 40/100/40 th. 0.8 mm	3000	100	360	1.07 kg/m 8 pcs/box 15 boxes/pack
	4000	100	640	

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Technical data sheet

04/2021

SCREWS

Fasteners for drywall systems

V.R. nail tip screws	Dimensions mm	Description
	Ø 3.5x25 Ø 3.5x35 Ø 3.5x45 Ø 3.5x55	Phosphate steel self-lapping nail tip "HS" screw with a flat countersunk bumpel-shaped head, fine thread ø 3.5 mm.
212 nail tip screws	Ø 3.9x25 Ø 3.9x35 Ø 3.9x45 Ø 3.9x55	Phosphate steel self-lapping nail tip "HS" screw with a flat countersunk bumpel-shaped head, fine thread ø 3.9 mm.
221 Tek screws	Ø 3.5x25 Ø 3.5x35 Ø 3.5x45	Phosphate steel self-lapping TEKS screw with a flat countersunk bumpel-shaped head, 3.5 mm fine thread for sheet metal more than 0.10 mm thick.
Washer head screws	Ø 4.2x12.7 Ø 4.2x12.7	Galvanised steel nail tip "HS" screws for fastening sheet metal onto sheet metal, max 2 mm thick. Galvanised steel TEKS screws for fastening sheet metal onto sheet metal, max 2 mm thick.

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3. Exterior Wall – Knauf Aquapanel Exterior partition

Delivery and installation of Knauf Exterior Wall as double stud system, installed between floors with intermediate board

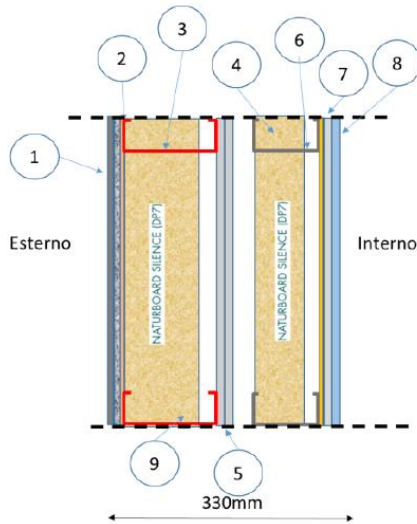


Fig. 2 -Knauf exterior wall horizontal section

Min. wall thickness: 330 mm Max Height: 4000 mm

The solution consists of:

- Exterior metal frame with **Knauf profiles MgZ** made up of steel DX51D+Z-N-A-C with additional Zinc-Magnesium coating, profile thickness of 0,6 mm, CE marked according to EN 14195 – 2005, composed of:
U runners: **MgZ U profile 40/150/40** mm;
C studs: single **MgZ C profile 50/150/50** (*) mm, maximum spacing 400 mm.
- Interior metal frame with **Knauf profiles** made up of steel DX51D+Z-N-A-C with profile thickness of 0,6 mm, CE marked according to EN 14195 – 2005, composed of:
U runners: **U profile 40/100/40** mm;
C studs: single **C profile 50/100/50** (*) mm, maximum spacing 400 mm.

To prevent thermal and acoustic bridges and to compensate uneven surfaces, adhere self-adhesive decoupling tape to the web of the UW runner.

(*) check the profile section and the spacing according to the max. Height of the partition and the designed load. Dimension to be checked according to the thermal performances required.

To prevent thermal bridges at the slab edge, insulate the section in front of floors with a layer of glass wool insulation according to building physical requirements, before applying the water barrier.

Thermal and sound insulation materials between studs:

- Single layer of rockwool **Knauf InsulationNaturboard Silence (**)**, conforming EN 13162 produced with Ecos[□] Technology, placed **in the gap of the external metal framework**. Technical data: dimensions 600x1000 mm, thickness 120 mm, density 70 kg/m³, λ_D : 0,034 W/mK, fire reaction class A1 (EN 13501-1), vapor resistance $\mu = 1$. Knauf products are endowed with the Euceb brand to ensure bio-solubility and compliance with note Q of European Directive 97/69 / EC.
- Single layer of rockwool **Knauf InsulationNaturboard Silence (**)**, conforming EN 13162 produced with Ecos[□] Technology, placed **in the gap of the internal metal framework**. Technical data: dimensions 600x1000 mm, thickness 80 mm, density 70 kg/m³, λ_D : 0,034 W/mK, fire reaction class A1 (EN 13501-1), vapor resistance $\mu = 1$. Knauf products are endowed with the Euceb brand to ensure bio-solubility and compliance with note Q of European Directive 97/69 / EC.

Cladding of the exterior side with **Knauf Aquapanel Outdoor** board, CE marked according to EN 12467 and ETA, fixed to the external MgZ C studs with **Aquapanel Maxi Screws SB 25**, with the following characteristics:

- λ : 0.35 W/mK
- Weight 16 kg/m²
- fire reaction class A1 referring EN13501-1
- VOC emission: A+
- Density: c.a. 1150 kg/m³
- MoR: ≥ 7 MPa (EN 12467)
- EPD

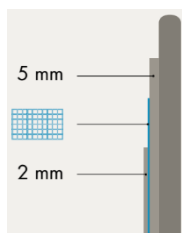
Before the installation of the Aquapanel Outdoor Apply **AQUAPANEL® Water-Resistive Barrier** with overlapping joints of at least 10 cm over the whole of the surface.

Apply **AQUAPANEL® Water-Resistive Barrier** with overlapping joints of at least 10 cm over the whole of the surface.

Apply **AQUAPANEL® Cement Board Outdoor** panels horizontally. Arrange front edge joints (vertical) on center of profile flanges. Leave a gap of 3-5 mm between boards alongside the long and front edges (horizontal and vertical) using a suitable spacer.

Immediately after fixing the boards, protect the wall from weathering by filling all the joints with **AQUAPANEL® Joint Filler – grey**. Right after that embed **AQUAPANEL® Tape** (10 cm) centered alongside all joints and finally cover the screws heads with Joint Filler grey.

AQUAPANEL® Cement Board Outdoor must be rendered with **AQUAPANEL® Exterior Basecoat**. When applying the **AQUAPANEL® Exterior Basecoat**, create a layer of average 5 mm thickness. Gently embed/place the **mesh**. Overlap all joints of the mesh at least 10 cm.



On top of the mesh, add an extra 2 mm basecoat layer with a smooth trowel to close the surface and to eliminate unevenness. Total thickness of the mesh-reinforced basecoat should be 5-7 mm. When these steps are completed, the mesh lies in the first third of the basecoat. Before continuing with the next steps, allow a curing time of 1 day per mm of layer thickness.* Protect fresh basecoat from the effects of frost, rapid drying and weathering

**All time specifications given here are depending on climate conditions.*

The application of the exterior coating/rainscreen façade should follow the technical specification of the manufacturer and the feasibility of the solutions should be checked

For fastening information, refer to the document: [Fastening And Penetration 1.0 web.pdf \(aquapanel.com\)](#)

- **Knauf GKB (A)** board as a double layer between studs (applied to the external framework), CE marked according to EN 520, fixed to the C studs with specific drywall screws with the following characteristics:
 - λ : 0.21 W/mK
 - Weight 8.5 kg/m²
 - fire reaction class A2-s1,d0 referring EN13501-1
 - VOC emission: A+
 - Density: c.a. 680 kg/m³
 - EPD

- **Knauf GKB Advanced + BV (A)** board as outside layer of the internal cladding, CE marked according to EN 520, fixed to the C studs with drywall screws (**V.R. 25 mm**), with the following characteristics:
 - λ : 0.20 W/mK
 - Weight 8.5 kg/m²
 - fire reaction class A2-s1,d0 referring EN13501-1
 - VOC emission: A+
 - Density: c.a. 680 kg/m³
 - EPD

- **Knauf Diamant (DFH2IR)** board as inside layer of the internal cladding, CE marked according to EN 520, fixed to the C studs with specific drywall screws XTN (**XTN 38**) with the following characteristics:
 - λ : 0.25 W/mK
 - Weight 12.8 kg/m²
 - fire reaction class A2-s1,d0 referring EN13501-1
 - VOC emission: A+
 - Density: c.a. 1000 kg/m³

Treat the joints between boards with Knauf jointfiller and reinforcing tape. Cover the heads of the screws with Knauf jointfiller.



AQUAPANEL®

10/2019

AQUAPANEL® Cement Board Outdoor

The ideal substrate for exterior walls in ventilated or water-managed (directly-applied) systems. Also for façade renovations and exterior ceiling applications

AQUAPANEL®



Physical properties

Length (mm)	1200/2400/1250/2500	900/2000/2400/2500/2800/3000	900/2000/2500
Width (mm)	900	1200	1250
Depth (mm)	12.5	12.5	12.5
Min. bending radius for 900/1200/1250 mm wide board	3	3	3
Min. bending radius for 300 mm wide strip	1	1	1
Weight (kg/m ²)	approx. 16	approx. 16	approx. 16
Dry bulk density (kg/m ³) according to EN 12467	approx. 1150	approx. 1150	approx. 1150
Bending strength (MPa) according to EN 12467	≥ 7	≥ 7	≥ 7
Tensile strength perpendicular to the plane of the board (N/mm ²) according to EN 319	0.65	0.65	0.65
Shearing strength (N) according to EN 520	607	607	607
pH-value	12	12	12
Thermal conductivity (W/mK) according to EN ISO 10456	0.35	0.35	0.35
Thermal expansion (10 ⁻⁶ K ⁻¹)	7	7	7
Water vapour diffusion coefficient μ (-) according to EN ISO 12572	66	66	66
Length variation 65% - 85% humidity (mm/m) according to EN 318	0.23	0.23	0.23
Thickness variation 65% - 85% humidity (%) according to EN 318	0.2	0.2	0.2
Building material class according to EN 13501	A1 non-combustible	A1 non-combustible	A1 non-combustible

Description

AQUAPANEL® Cement Board Outdoor is a robust, non-combustible building panel made of aggregated Portland cement with coated glass fibre mesh embedded in back and front surfaces. It offers all the benefits of a dry panel system with the strength of brick and block.

The ends are cut square and edges are reinforced for extra strength (the EasyEdge®). The panel provides a solid base that withstands extreme weather conditions.

Application

AQUAPANEL® Cement Board Outdoor is used in exterior applications for walls and ceilings as a directly-applied (water-managed) or ventilated system.

Furthermore, AQUAPANEL® Cement Board Outdoor can also serve as a substrate for ceramic and other linings as well as thermal insulation composite systems (ETICS).

European technical approval ETA-07/0173 has been issued for AQUAPANEL® Cement Board Outdoor.

The panel is also certified according to the criteria of the Institute for Building Biology in Rosenheim, Germany, report no. 3016-848.

Characteristics

- Alternative to brick and block-work
- Drying for faster progress
- Weather and water-resistant
- Strong, robust, impact-resistant and non-combustible
- Can be cut to shape using "score and snap" technique
- Simple and easy to install
- Can be bent when dry - up to 1 metre bending radius

Handling and installation

AQUAPANEL® Cement Board Outdoor is attached to a vertical stud frame. The substructure should be selected according to the static requirements. Depending on these requirements, it is possible to use single or double-layer planking or a combination with other Knauf construction boards. All necessary accessories are available in the AQUAPANEL® accessory range.

Installation time - wall:
approx. 15 min/m² (including screws, joint tape and joint filler).

Installation time - ceiling:
approx. 18 min/m² (including screws, joint tape and joint filler).

Stud spacing

Wall: 600 (625) mm horizontal installation
(according to the static requirements, smaller distances are necessary)
Ceiling: 300 (312.5) mm



AQUAPANEL®

08/2017

AQUAPANEL® Maxi Screws

For fastening AQUAPANEL® Cement Board

AQUAPANEL®



Description

AQUAPANEL® Maxi Screws have been specially developed for fixing AQUAPANEL® Cement Board on to timber and metal frameworks of differing thicknesses. Both needlepoint and drillpoint versions with countersunk are available. AQUAPANEL® Maxi Screws can be used for both wall and ceiling applications in interior and exterior applications.

Scope/area of application

AQUAPANEL® Maxi Screw SN has 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 countersunk.

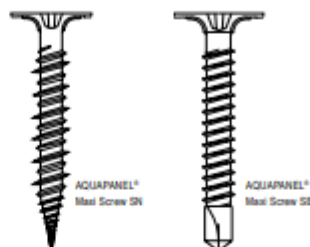
- AQUAPANEL® Maxi Screw SN 25 can be used for a single-layer panel on a metal framework.
- AQUAPANEL® Maxi Screw SN 39 is suitable for a single or double layer boards on a metal framework or a single-layer panel on a wooden framework.
- AQUAPANEL® Maxi Screw SN 55 can be used for a double layer of boards on a wooden framework or for a triple layer of boards on a metal framework.

AQUAPANEL® Maxi Screw SB has 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 countersunk.

- AQUAPANEL® Maxi Screw SB 25 can be used for a single layer of boards.
- AQUAPANEL® Maxi Screw SB 39 is suitable for a single or double layer of boards.

All AQUAPANEL® Maxi Screws have a special corrosion-proof coating, which gives a guaranteed 720 hours corrosion resistance in a salt spray test.

The drive is the common dry lining system PH2.



Processing

The screws are installed flush so that the screw heads are level with the plane of the board. Screw spacing ≤ 250 mm. Distance from edge ≥ 15 mm. The use of screwdrivers with depth control is recommended.

Material coverage

Wall: 15 pieces / m², stud spacing 600/625 mm

Ceiling: 25 pieces / m², profile spacing 300/312.5 mm

Method of delivery

AQUAPANEL® Maxi Screw SN 25: 1000 pieces/pack Item code: 87319

AQUAPANEL® Maxi Screw SB 25: 250 pieces/pack Item code: 94730

AQUAPANEL® Maxi Screw SN 39: 500 pieces/pack Item code: 53500

AQUAPANEL® Maxi Screw SB 39: 250 pieces/pack Item code: 58549

AQUAPANEL® Maxi Screw SN 55: 250 pieces/pack Item code: 95644

Collated screws are available on request.

	Timber framework		Metal framework				
	Single layer	Double layer	Metal thickness 0.6 – 0.7 mm			Metal thickness 0.8 – 2.0 mm	
			Single layer	Double layer	Triple layer	Single layer	Double layer
AQUAPANEL® Maxi Screw SN 25			x				
AQUAPANEL® Maxi Screw SB 25						x	
AQUAPANEL® Maxi Screw SN 39	x		x	x			
AQUAPANEL® Maxi Screw SB 39						x	x
AQUAPANEL® Maxi Screw SN 55		x			x		

AQUAPANEL®

www.AQUAPANEL.com

aqpanel.info@knauf.com

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AQUAPANEL® is a registered trademark.

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AQUAPANEL®

08/2017

AQUAPANEL® Joint Filler - grey

Cement-bound joint filler

AQUAPANEL®



Description

AQUAPANEL® Joint Filler – grey is a cement-bound filling material for full-surface skim coating of joints by hand. The joints are filled with AQUAPANEL® Joint Filler – grey and reinforced with AQUAPANEL® Tape (10 cm).

As a joint filler, the product is suitable for use with AQUAPANEL® Cement Board Indoor (ceiling) and AQUAPANEL® Cement Board Outdoor (wall and ceiling).

Preparation of the substrate

AQUAPANEL® Cement Board panels must be dry, clean and dust-free and fixed firmly onto a substructure.

Mixing

Stir 20 kg AQUAPANEL® Joint Filler – grey into approx. 6.8 l of cold, clean water (0.34 l water/kg AQUAPANEL® Joint Filler – grey). We recommend the use of a 600 rpm stirring machine. Use a clean mixing container and mixing tool.

Processing/application

Tools: Float/smoothing trowel.

Fill joints, place AQUAPANEL® Tape (10 cm) and press in with a trowel. Allow the previous coating to dry or harden before applying another coat if required. Also cover the screwheads.

Clean tools and equipment immediately after use with water.

Material coverage

- Joints: approx. 0.7 kg/m²

Technical data

Reaction to fire	A1
Water absorption	W2
Water vapour diffusion coefficient (table value EN 1745)	$\mu = 5$ (wet cup) $\mu = 20$ (dry cup)
Thermal conductivity $\lambda_{10, dry, mat}$ table value according to EN 1745	≤ 0.45 W/(mK), P=50% ≤ 0.49 W/(mK), P=90%

Working time

The material begins to harden approx. 45 minutes after stirring. Dirty mixing containers and tools, and high temperatures or wind can shorten the working time. Do not use the material once it begins to stiffen.

Wall joint: approx. 12 minutes/m² (incl. board installation, screw fixation and application of the joint tape – AQUAPANEL® Cement Board Outdoor only).

Ceiling joint: approx. 18 minutes/m² (incl. installation, screws and laying the joint tape).

Working temperature/climate

AQUAPANEL® Joint Filler – grey should only be applied to AQUAPANEL® Cement Board panels once they have acclimatised to the ambient climatic conditions. The material, ambient and substrate temperature must not fall below +5°C.

Method of delivery/storage

- 20 kg/bag
- Store bags in a dry place. Pour the contents of damaged bags into a container and use first.
- Unopened storage life approx. 12 months

Item code: 131094

AQUAPANEL®

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 ⓘ aquapanel.info@knauf.com

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AQUAPANEL®

08/2017

AQUAPANEL® Exterior Basecoat

Cement-based mortar enhanced with synthetic resin

AQUAPANEL®



Description

AQUAPANEL® Exterior Basecoat is a cement-bound, synthetic resin-enhanced basecoat. It is used for basecoating AQUAPANEL® Cement Board Outdoor when finishing with a thin layer of finishing plaster, decorative render or paint.

Preparation of the substrate

Ensure that the surfaces of the AQUAPANEL® Cement Board Outdoor are dry and dust-free. Ensure that no offsets, open joints or unevenness tolerances are present outside of the required specifications. Make sure the AQUAPANEL® Joint Filler - grey, into which AQUAPANEL® Tape (10 cm) is embedded, is adequately hardened and dry.

Form connections to adjoining building components with suitable sealing tape. Fit plaster stop beads at windows and doors to form the joint to the plaster system. Make sure all external corners have a mesh corner angle fitted.

Mixing

For manual application: stir the contents of the bag into approx. 5 litres of water. Apply and work the mixed plaster within 45 minutes.

For application by machine: Add approx. 140 litres of water initially and adjust to give a thin consistency.

Processing/application

Apply AQUAPANEL® Exterior Basecoat 5-7 mm thick, spread to achieve a flat surface free from irregularities. Embed the AQUAPANEL® Reinforcing Mesh over the full surface, keeping it free of folds, close to the surface and with 10 cm joint overlaps. Laying time is approx. 15 min. Open time is approx. 20 min at approx 20°C. For plaster layers < 1 mm thick or for felted surfaces or those to be painted, the 20 cm wide AQUAPANEL® Exterior Reinforcing Tape is required over the board joints. In this case, the AQUAPANEL® Tape (10 cm) can be omitted. AQUAPANEL® Reinforcing Mesh is then placed over the whole surface area.

The total thickness of the reinforcing layer formed by the AQUAPANEL® Exterior Basecoat and the AQUAPANEL® Reinforcing Mesh should be a minimum of 5 mm. Processing time for the mixed plaster is 45 minutes at approx. 20°C. Before further processing allow a drying time of 1 day per mm of thickness.

Technical data

AQUAPANEL® Exterior Basecoat is a general purpose rendering mortar (GP) for internal and external use (CS IV) according to EN 998 - 1.

Reaction to fire	A1
Water absorption	W2
Water vapour diffusion coeff. μ	$\mu = 5$ (wet cup)
table value according to EN 1745	$\mu = 20$ (dry cup)
Thermal conductivity $\lambda_{10, dry, max}$	≤ 0.47 W/(mK), P=50%
table value according to EN 1745	≤ 0.54 W/(mK), P=90%

Material coverage

- Basecoat 5 mm application approx. 7.8 kg/m², using a standard trowel
- 3.2 m²/bag

Working time

Manual: approx. 8-10 minutes/m²
Machine: approx. 5 minutes/m²

Working temperature/climate

Do not use when air and/or wall temperatures are below +5°C. Protect fresh plaster from the effects of frost and rapid drying.

Method of delivery/storage

- 25 kg/bag
- Protect against moisture, storage life 12 months in a dry area

Item code: 49157

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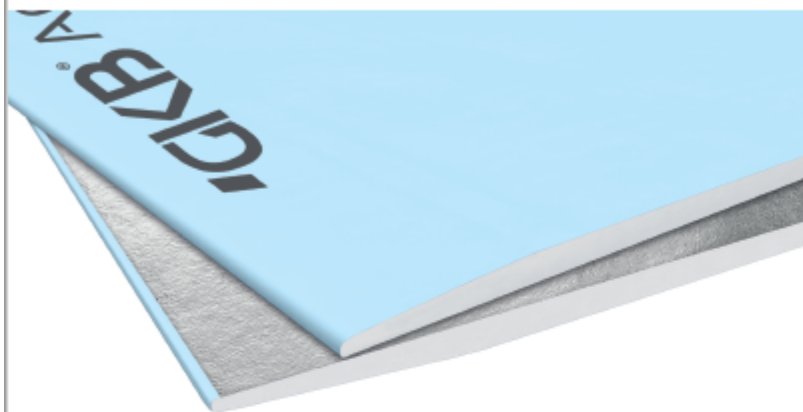
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KNAUF



Lastra GKB Advanced

07/2020

Lastra Knauf GKB Advanced con barriera al vapore (B.V.)

Lastra standard in gesso rivestito con barriera al vapore

Descrizione	Campo di applicazione	Caratteristiche
■ Classificazione della lastra UNI EN 520 ■ Colore cartone Formati Spessore lastra 12,5 mm ■ 2000x1200 mm ■ 3000x1200 mm Stoccaggio Conservare su pallet o bearers in luogo asciutto Normativa di riferimento UNI EN 14190	Le lastre Knauf GKB Advanced sono le lastre standard in cartongesso ultraleggero, dotate di nuova tecnologia Li-Tek, adatte per qualsiasi campo di applicazione in interni, soprattutto per esigenze di ridotti pesi quali ristrutturazioni, sopraelevazioni, edilizia antisismica. Grazie alla presenza della barriera al vapore sul retro, costituita da un foglio di alluminio dello spessore di 15 µm, garantiscono una bassissima permeabilità al vapore. Impiego ■ Pareti divisorie ■ Contropareti ■ Intonaco a secco ■ Controsoffitti ■ Velelte	■ Facili da applicare grazie al suo ridotto peso ■ Ergonomica, più maneggevole ■ Ultraleggera ■ Tecnologia costruttiva innovativa Li-Tek ■ Non combustibili ■ Flessibilità aumentata ■ Ridotte dilatazioni o restringimenti al variare delle condizioni climatiche ■ Indicate per il controllo della condensa interstiziale ■ Ideali per il recupero igrometrico di pareti in muratura esistenti

Lastra Knauf GKB Advanced con barriera al vapore (BV)



Lastra standard in gesso rivestito con barriera al vapore

Dati tecnici

Dimensione lastra

1200 mm



da 2000 - 3000 mm

Forma dei bordi

■ Bordi longitudinali rivestiti di cartone: AK



■ Bordi trasversali tagliati: SK



Tipo di lastra

A

UNI EN 520

Fattore di resistenza al vapore acqueo (μ)

Lastra spessore 12,5 mm

UNI EN ISO 12572

Secco

9,2

Umido

5,7

Barriera al vapore 15 μ m

>500000

Conducibilità termica (λ)
(solo lastra in gesso rivestito)

W/(m·K)

0,19

UNI EN 12664

Densità

kg/m³

≥ 600

Peso delle lastre

Lastra spessore 12,5 mm

kg/m²

≥ 7,5

Carico a flessione

UNI EN 520

Lastra spessore 12,5 mm:

■ Longitudinale

N

≥ 550

■ Trasversale:

N

≥ 210

Certificazioni



■ Conforme ai requisiti CAM (Criteri Ambientali Minimi) sul contenuto di riciclato secondo UNI EN ISO 14021

Note

Per l'installazione delle lastre fare riferimento anche alla norma UNI 11424, alle schede tecniche e ai manuali di posa Knauf.

Altri documenti disponibili:

- DoP (Dichiarazione di Prestazione)
- Scheda di Sicurezza

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Stabilimento Stalenti e Becco:

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Stabilimento Stalenti Intonaci:

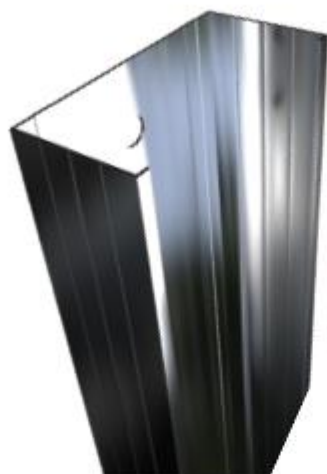
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Orditure

11/2016

Profilo C 50/150/50 MgZ

Orditure metalliche

Descrizione

Orditure metallica per la realizzazione di pareti, contropereti e controsoffitti autoportanti per Sistema AQUAPANEL® (vedi scheda tecnica Sistema AQUAPANEL®).

Tutte le orditure Knauf sono conformi alle norme di prodotto UNI EN 14195-2005 e DIN 18182-1 per misure, identificazione materiale, controllo e contrassegno.

Le orditure Knauf sono realizzate in acciaio DX 51 D+Z -M/N-A-C, avente un carico di snervamento $\geq 300 \text{ N/mm}^2$ conforme alla norma europea UNI EN 10346-2009. Rivestimento con soluzione solida di magnesio-zinco ad elevata resistenza alla corrosione, anche per impieghi esterni.

Stoccaggio

È consigliato lo stoccaggio in magazzini coperti e chiusi. Nell'eventualità di stoccaggio all'aperto porre i pacchi leggermente inclinati, al fine di consentire il deflusso dell'acqua piovana, e protetti con fogli di polietilene ventilati per evitare fenomeni di condensa.

Marchi ed identificazione

Le orditure Knauf sono contraddistinte sulle ali con una inchiostatura nera che identifica: il produttore, lo stabilimento, i dati di produzione, la normativa di riferimento sia per la produzione delle orditure che per la conformità della materia prima.

Note

Rivestimento	Trattamento
MgZ (MZ)	Alluminio 1,6% Magnesio 1,6% Zinco 96,8 %

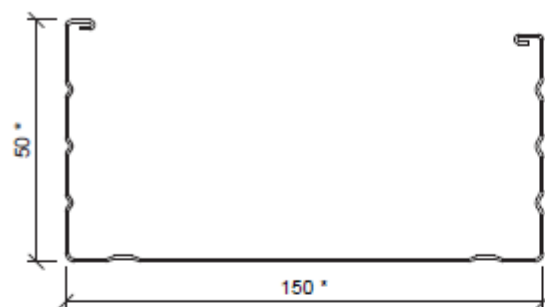
Caratteristiche

- Assoluta garanzia di resistenza alla corrosione delle orditure montate in ambienti umidi e aggressivi chimicamente
- Assenza di residui polverosi sulle attrezzature di produzione e sul prodotto finale
- Protezione dei bordi tagliati
- Tempi di formazione della ruggine rossa 5 volte superiori rispetto allo zinco tradizionale
- Tempi di formazione dell'ossidazione bianca 2,5 volte superiori rispetto allo zinco tradizionale
- Assenza sulle orditure di cromo e olio, prima e dopo la produzione

Orditure metalliche

KNAUF

Caratteristiche geometriche



* Dimensioni nominali del profilo in mm

Spessore 0,6 mm

Area sezione	158,10 mm ²
Inerzia maggiore	535617 mm ⁴
Inerzia minore	45251 mm ⁴

Spessore 0,8 mm

Area sezione	209,79 mm ²
Inerzia maggiore	707839 mm ⁴
Inerzia minore	59051 mm ⁴

Spessore 1,0 mm

Area sezione	256,58 mm ²
Inerzia maggiore	854891 mm ⁴
Inerzia minore	66089 mm ⁴

Dettaglio prolungamento profili

Profili Knauf Sovrapposizione

a "C" / Asolato 150 ≥ 150 cm

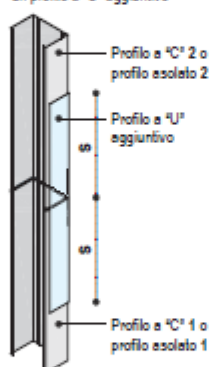
Sfalsare i giunti dei profili nell'altezza
Punzonare o avvitare i profili nell'area di sovrapposizione



Punzonatrice

Soluzione 1

2 Profili a "C" o asolati intestati e vincolati sulla schiena con un profilo a "U" aggiuntivo



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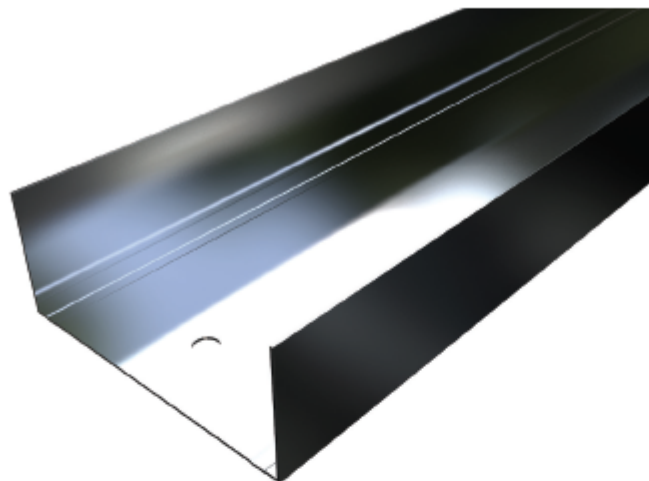
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Orditure

11/2016

Profilo guida U 40/150/40 MgZ

Orditure metalliche

Descrizione

Orditure metalliche per la realizzazione di pareti, contropanelli e controsoffitti per Sistema AQUAPANEL® (vedi scheda tecnica Sistema AQUAPANEL®).

Tutte le orditure Knauf sono conformi alle norme di prodotto UNI EN 14195-2005 e DIN 18182-1 per misure, identificazione materiale, controllo e contrassegno.

Le orditure Knauf sono realizzate in acciaio DX 51 D+Z -MN-A-C, avente un carico di snervamento $\geq 300 \text{ N/mm}^2$ conforme alla norma europea UNI EN 10346-2009. Rivestimento con soluzione solida di magnesio-zinco ad elevata resistenza alla corrosione, anche per impieghi esterni.

Stoccaggio

È consigliato lo stoccaggio in magazzini coperti e chiusi. Nell'eventualità di stoccaggio all'aperto porre i pezzi leggermente inclinati, al fine di consentire il deflusso dell'acqua piovana, e protetti con fogli di polietilene ventilati per evitare fenomeni di condensa.

Marchi ed identificazione

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Note

Rivestimento	Trattamento
MgZ (MZ)	Alluminio 1,6% Magnesio 1,6% Zinco 96,8 %

Caratteristiche

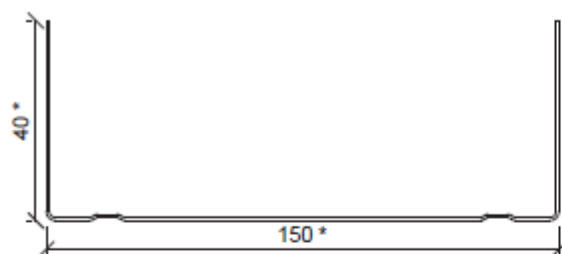
- Assoluta garanzia di resistenza alla corrosione delle orditure montate in ambienti umidi e aggressivi chimicamente
- Assenza di residui polverosi sulle attrezzature di produzione e sul prodotto finale
- Protezione dei bordi tagliati
- Tempi di formazione della ruggine rossa 5 volte superiori rispetto allo zincato tradizionale
- Tempi di formazione dell'ossidazione bianca 2,5 volte superiori rispetto allo zincato tradizionale
- Assenza sulle orditure di cromo e olio, prima e dopo la produzione

Profilo guida U 40/150/40 MgZ

Orditure metalliche

KNAUF

Caratteristiche geometriche



* Dimensioni nominali del profilo in mm

Spessore 0,6 mm

Area sezione	136.67 mm ²
Inerzia maggiore	423019 mm ⁴
Inerzia minore	17183 mm ⁴

Spessore 0,8 mm

Area sezione	181.15 mm ²
Inerzia maggiore	566342 mm ⁴
Inerzia minore	23083 mm ⁴

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4. Modular Ceiling with Knauf Topiq Efficient Pro board

Demountable gypsum ceiling in exposed T-grid system.

Products and materials

Board: KCS Topiq Efficient Pro

Main runner

Type: T-profile

Material: 0.4mm galvanized steel Colour: White

Dimensions: Width < 15 or 24mm > | Height 38mm

Cross-tees

Type: T-profile

Material: 0.4mm galvanized steel Colour: White

Dimensions: Width < 15 or 24mm > | Height 38mm

Wall connection

Type: < L-profile or Shadow line trim > Material: 0.5mm galvanized steel Colour: White

Dimension: < 24x20mm or 15x15x8x25mm >

Suspension

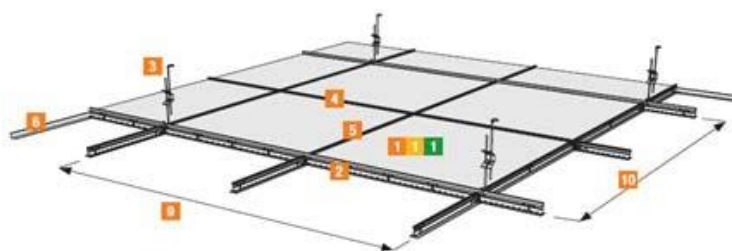
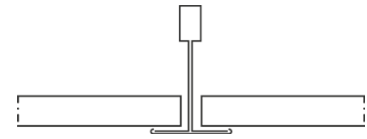
Type: Adjustable hanger Dimension: < xxx - xxx mm >

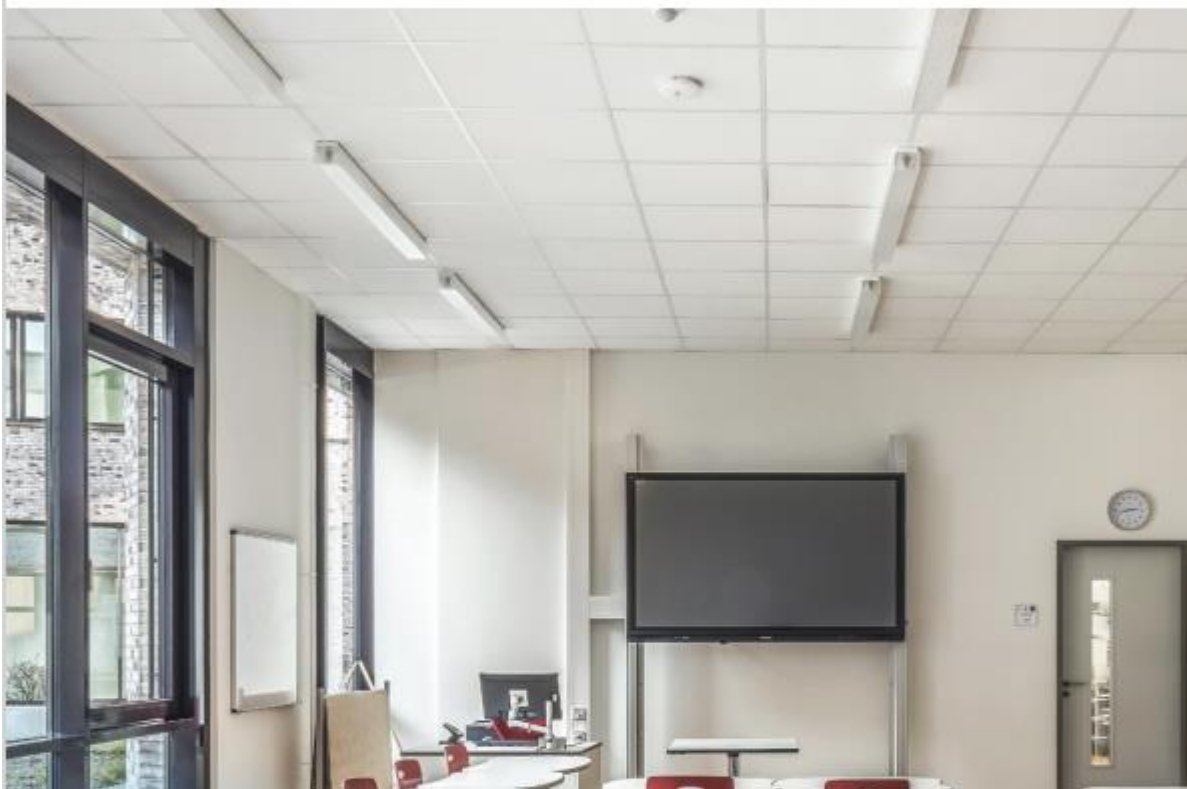
Installation

- Screw spacing for attachment of wall connections max. 300mm c/c and in relation to the required ceiling height < xxx mm > (*min. 120mm*)
- Distance from wall to first hanger in direction of load-bearing (main runner) section ≤ 400 mm.
- Distance between hangers ≤ 1200 mm.
- Distance from wall to first load-bearing (main runner) section ≤ 600 mm.
- Distance between load-bearing (main runner) sections ≤ 1200 mm.
- Subdivision made with cross-tees length 1200 and 600 mm.
- Units of up to 3.0kg can be integrated directly into the ceiling tiles.

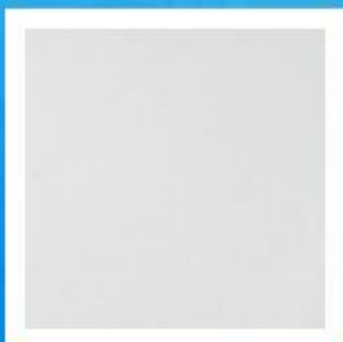
In the case of heavier units, the unit must be installed independently without any load on the ceiling tile.

For loads above 3kg/m², additional hangers must be used.





AMF TOPIQ® Efficient Pro



- AMF TOPIQ® Efficient Pro is a very light stone wool panel with a modern, smooth surface.
- Excellent sound absorption (1.00 α_w)
- Excellent light reflectance (88%)
- ISO 4
- Ideal for offices, classrooms, learning applications and underground garages



knaufceilingsolutions.com



AMF TOPIQ® EFFICIENT PRO

KNAUFCEILING
Solutions

Edge details		Board	Tegular 24/90	Tegular 15/90														
Additional edge details on request																		
Thickness (mm)		20	20	20														
Dimensions (mm)		600 x 600 625 x 625 1200 x 600	600 x 600 625 x 625	600 x 600 625 x 625														
Additional sizes on request																		
System		Exposed demountable - System C																
Weight		2.8 kg / m²																
Colour		White																
Sound absorption		EN ISO 354 $\alpha_w = 1.00$ as per EN ISO 11654 - Class A <table><tr><td>Frequency f (Hz)</td><td>125</td><td>250</td><td>500</td><td>1000</td><td>2000</td><td>4000</td></tr><tr><td>α_w</td><td>0.45</td><td>0.90</td><td>1.00</td><td>0.95</td><td>1.00</td><td>1.00</td></tr></table> NRC = 0.95 as per ASTM C 423			Frequency f (Hz)	125	250	500	1000	2000	4000	α_w	0.45	0.90	1.00	0.95	1.00	1.00
Frequency f (Hz)	125	250	500	1000	2000	4000												
α_w	0.45	0.90	1.00	0.95	1.00	1.00												
Sound attenuation		EN ISO 10848-2 $D_{s,w} = 25$ dB as per EN ISO 717-1 CAC = 25 dB as per ASTM E 413-10																
Sound reduction		EN ISO 10140-2 $R_w = 15$ dB as per EN ISO 717-1																
Fire reaction		Euroclass A1 as per EN 13501-1 RUS KM2 (G1, V1, D1, T1) as per 123-FZ																
Light reflectance		88%																
Humidity resistance		100% RH																
Clean room		ISO 4 as per EN ISO 14644-1																
Indoor air quality		 A	 E1	 IAC														
Cleanability																		
Sustainability		 33%	 M1	 www.bauer-eggel.de/ut132														

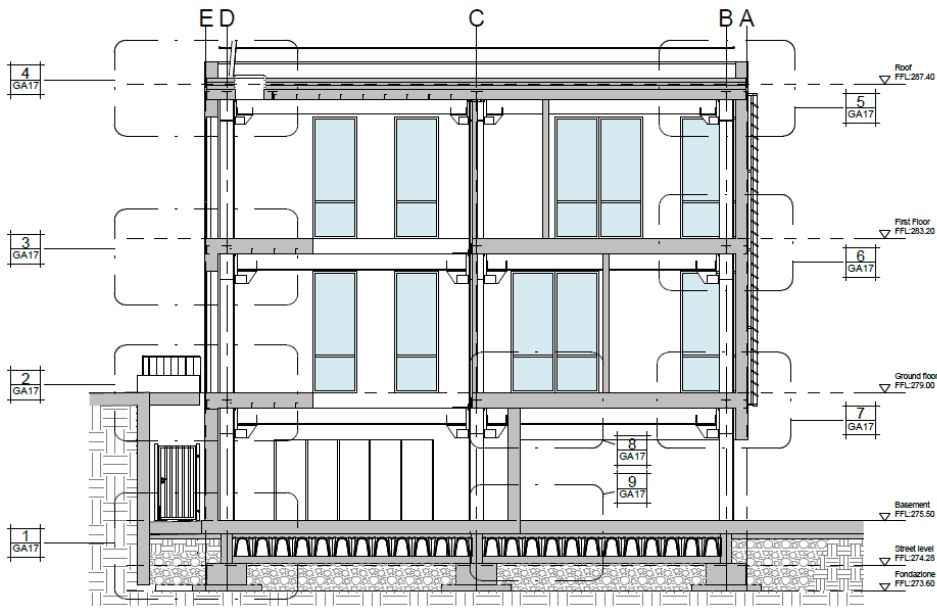
Products may vary from country to country. Please contact your local sales representative.
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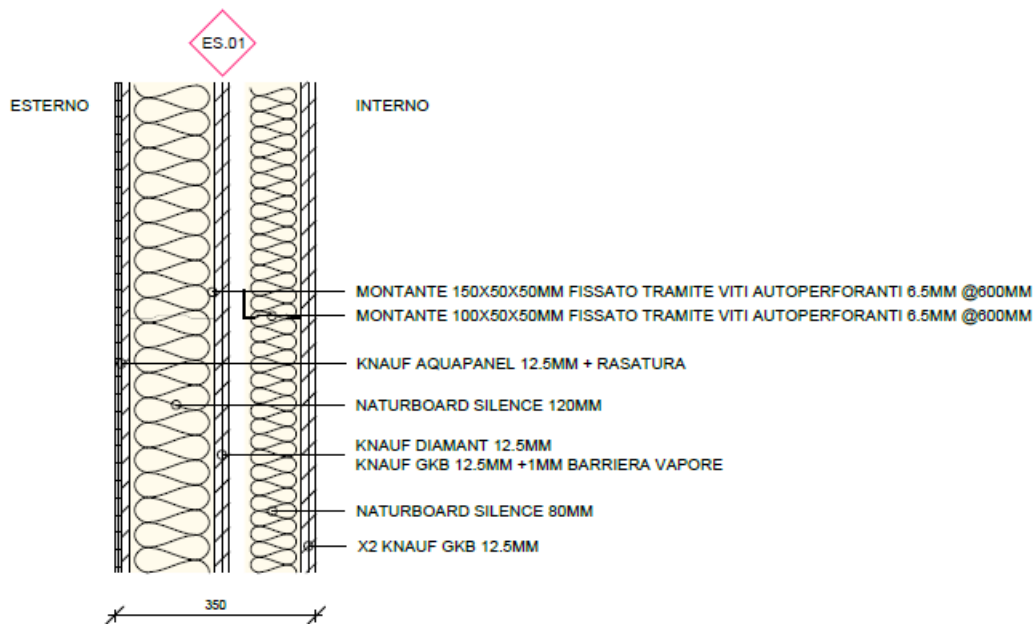
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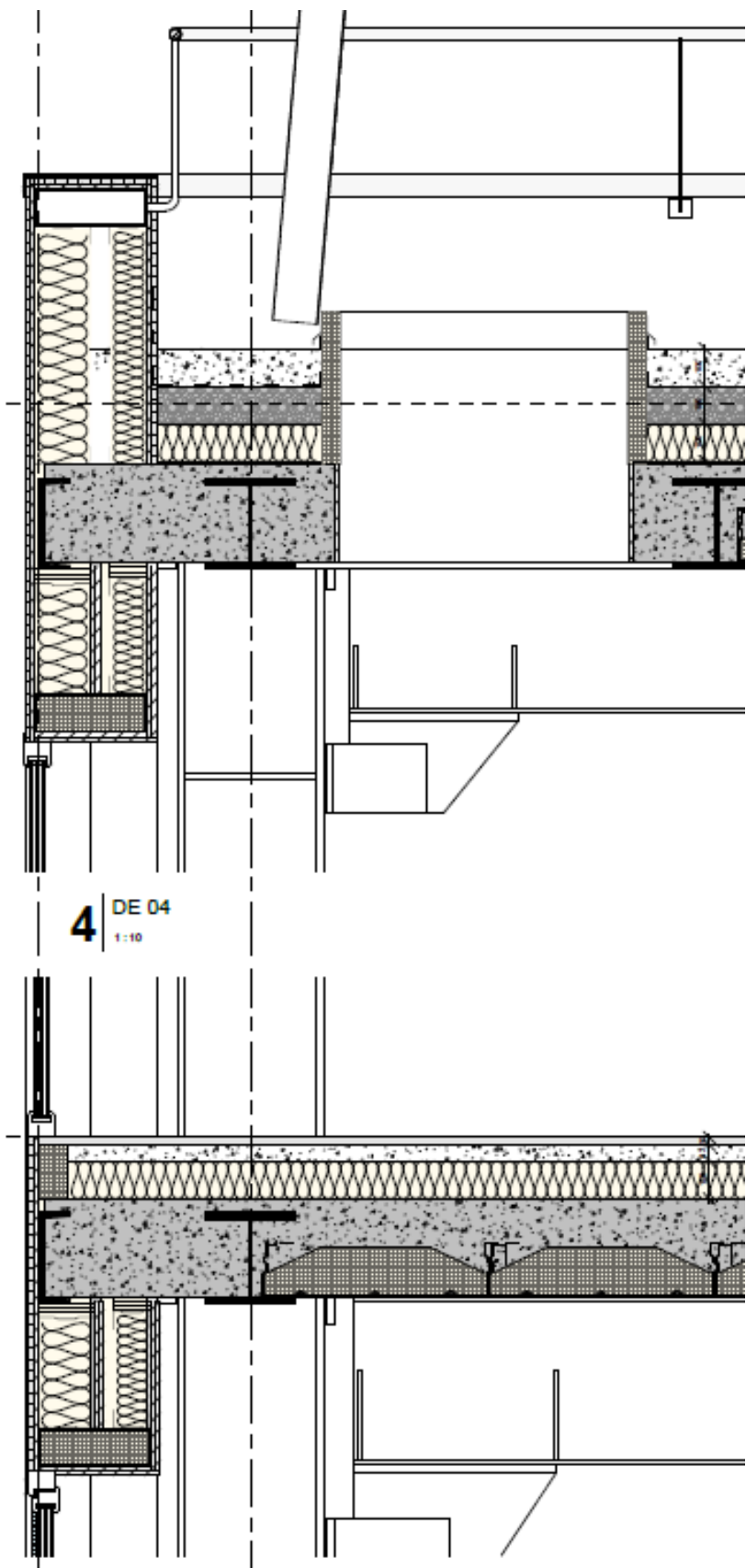
5. Architectural details of Knauf Systems



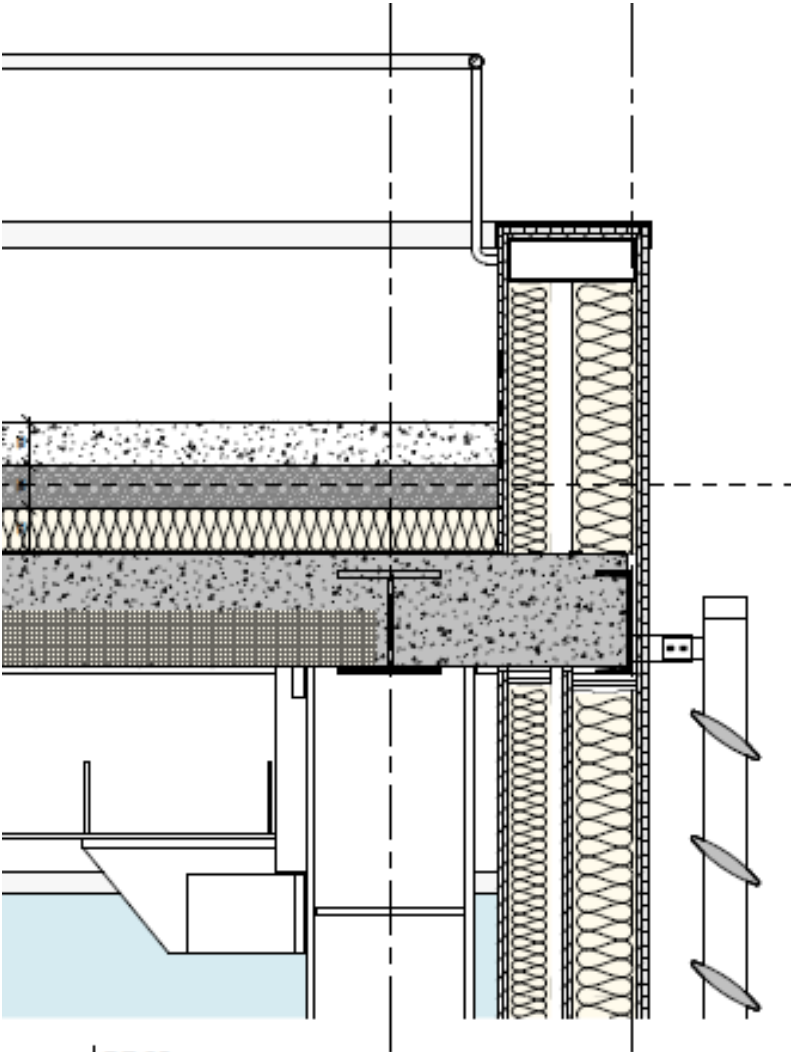
Exterior wall layers



Vertical section – Example 1



Vertical Section – Example 2



5 DE 05
1:10

