

Note on English translation / Hinweise zur englischen Fassung

This is a translation of the Technical Brochure valid in Germany.

All stated details and properties are in compliance with the regulations of the German standards and building regulations. They are only applicable for the specified products, system components, application rules, and construction details in connection with the specifications of the respective certificates and approvals.

Knauf Gips KG denies any liability for applications outside of Germany as this requires changes acc. to the respective national standards and building regulations.



Drywall Systems

FN01.de

Technical Brochure

2018-05

Drywall Solutions in Damp and Wet Rooms

Moisture Protection with Premium Drywalling

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Benefits of drywalling

Modern Knauf Drywall Systems offer huge benefits compared to solid constructions, for example, with regard to moisture protection, fire resistance, sound insulation, space gains and lower weights.



Moisture protection

Knauf drywalling in residential buildings offers solutions that can be applied universally and that at the same time are tailor-made, and can withstand the day-to-day demands, even in wet and damp rooms. Knauf drywall solutions offer the ideal substrate on wall and ceilings and also deliver unlimited design freedom for planning and installation.



Fire protection of buildings one step further

Drywall construction fully utilizes its high-performance features with fire resistance. Irrespective of whether it's a ceiling, wall, beam or column, we have a suitable system solution for every requirement. And where standard systems meet their limits, engineered fire resistance is the problem solver.



Every centimetre counts

Slim construction that offers a huge plus in terms of net surface area. When employing Knauf drywalling systems this can be as much as three percent in comparison to solid construction. At the same time every metre of wall can be used: Fitted cupboards, for example, can be just as easily integrated as water pipes, heating pipes and other domestic and engineering services.



Less weight, more upward scope

But it is not just in terms of surface area, there is also additional scope in the upward direction. Thanks to the considerably lower weight, a vertical extension can be realised from a structural point of view using drywalling. For even more space. And revenues.

Lower loads on the foundation and thus lower initial costs.

Furthermore, drywalling offers even more solutions.



Short construction time

By tailor-made constructions and simple installation.



Room climate

Sustainable climate management as a comfort and health factor.



Flexibility

Quick retrofitting and upgrading for a customized room design.



Sound insulation

Ensure effective peace and quiet with more insulation at less weight.

Foreword

Timber construction and drywalling are significant construction methods of our time. The construction of bathrooms, damp and wet rooms as timber and drywall constructions was insufficiently governed by the standards in the past and required additional codes of practice from the associations and industry.

Introduction

According to the building codes of the German Federal States, built environments are to be erected ensuring that water, moisture as well as other chemical, physical or biological influences, sources of danger as well as unreasonable annoyances do not result.

A built environment subjected to moisture must be protected against moisture penetration for these reasons.

In interiors, drywall constructions with a grid frame made of metal and wood, clad with board-like materials in combination with sealing systems in bathrooms and damp rooms, have proven themselves for decades and are the generally recognized state-of-the-art.

Drywall construction for bathrooms and damp rooms are used, independent of the construction method in hotels, hospitals, schools, office buildings and in residential construction.

Two decisive criteria relevant to the exposure to moisture play a decisive role when drywalling is used in damp and wet rooms. The cladding material as well as the substructure must be considered separately.

When the surface is directly exposed to water, the intensity of the exposure will stipulate the level of sealing and will limit the usability of individual building materials such as gypsum. The German standard DIN 18534 issued in 2017 as a replacement for the previous standard DIN 18195, made some detailed specifications on the matter and divided the level of exposure into classes and assigned these to the respective areas in wet and damp rooms. In the vicinity of local leaks (e.g. fastening, blank plugs applied by the installer) even with a professional level of sealing it is impossible to rule out brief exposure of the gypsum core to water. For this reason, the use of impregnated gypsum board with retarded water absorption is recommended. Corresponding testing in the Knauf laboratory have shown a significantly improved behaviour with impregnated boards.

Impregnation also plays an important role for the second criterion, the relative humidity.

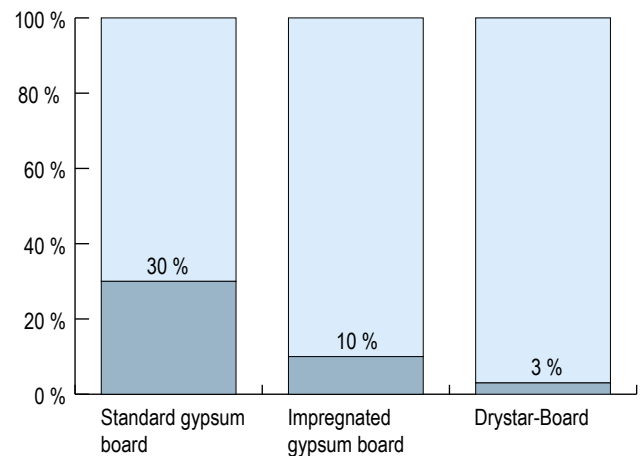
Gypsum building materials are capable of withstanding and reducing moisture peaks due to increased loading caused by rises in air humidity that result, for example, when showering. The changes in the shape as a result of hygric effects are minimal. If the material is saturated continuously the strength will be reduced. The impregnation of the gypsum core retards the absorption of water, particularly during short spikes in the air humidity level and thus prevents saturation of the gypsum core.

DIN 18181 states the following in this respect:

"Gypsum plasterboard may be installed in rooms exposed periodically to high levels of humidity or moisture, provided such rooms are adequately ventilated for moisture extraction purposes. Gypsum moisture-resistant wall board of type H2 (see EN 520) or GKBI/GKFI acc. to DIN 18180 shall preferably be used in this case."

Gypsum boards GKBI/GKFI acc. to EN 520 have a reduced water absorption rate H2 (10 %), Knauf Drystar Board acc. to EN 15283-1 has a reduced water absorption rate H1 (max. 5 %, actual 3 %) in combination with a high resistance to mould.

Retarded water absorption comparison



Gypsum boards are generally not recommended for rooms with continuously high levels of humidity due to their usage.

AQUAPANEL Cement Board is used for high and very high levels of exposure to moisture. AQUAPANEL Cement Board is 100 % water-resistant. Cement board will not change its coherence of structure or its structural properties when exposed to water. Furthermore, AQUAPANEL Cement Board is resistant to mould growth.

The air humidity remains a decisive criteria for the selection of the most suitable corrosion protection of the frame.

The EN 13964 makes some exact stipulations regarding the frame by classifying the exposure classes according to the level of air humidity and corrosivity of the air.

This technical brochure explores the fundamental demands and enables the selection of the correct system solutions for the diverse requirements with premium Knauf system components.



Water action classes acc. to DIN 18534-1

Water action class	Water action	Description	Application examples ^{1) 2)}
W0-I	Low	Surfaces that are not frequently subjected to splash water	<ul style="list-style-type: none"> ■ Areas of wall surfaces located above washbasins in bathrooms and sinks in domestic kitchens ■ Areas of floor surfaces in domestic areas without drains, e.g. in kitchens, domestic utility rooms, guest WCs
W1-I	Moderate	Areas with frequent exposure to splash water or infrequent exposure to process water, without intensified exposure to accumulating water	<ul style="list-style-type: none"> ■ Wall surfaces above bath tubs and in showers in bathrooms ■ Floor surfaces in domestic bathrooms with drain ■ Floor surfaces in bathrooms without/with drain without high level of water exposure from the shower area
W2-I	High	Surfaces with frequent exposure to splash water and / or process water, in particular on the floor where partially intensified by exposure to accumulating water	<ul style="list-style-type: none"> ■ Wall surfaces of showers in sports facilities / commercial areas³⁾ ■ Floor surfaces with drains and/or chutes ■ Floor surfaces in rooms with showers flush to the floor ■ Wall and floor surfaces of sports facilities / commercial areas³⁾
W3-I	Very high	Surfaces with frequent or long exposure to splash water and/or process water and / or water from vigorous cleaning processes, intensified by exposure to accumulating water	<ul style="list-style-type: none"> ■ Surfaces in the areas surrounding swimming pools ■ Surfaces in showers and large scale showers in sporting facilities / commercial areas ■ Surfaces in commercial areas³⁾ (industrial kitchens, laundries, breweries, etc.)

1) It may be useful to assign adjacent not protected areas with the respective higher water action classes, because of their insufficient physical distance or lack of building measures (e.g. shower screens).

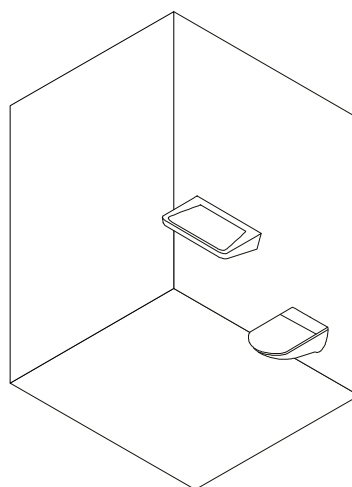
2) The application cases can be assigned to various water action classes to comply with the expected water effects.

3) Sealing surfaces if applicable with additional chemical exposure.

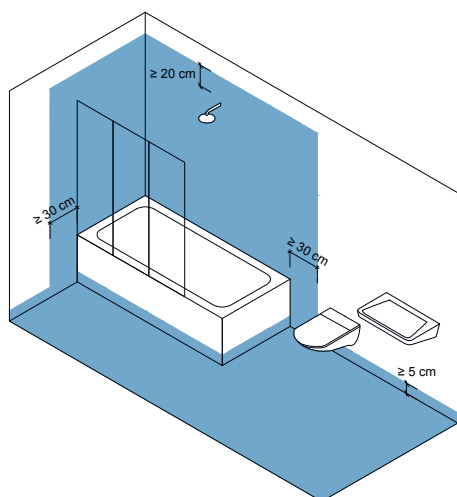
Application examples

Application examples legend

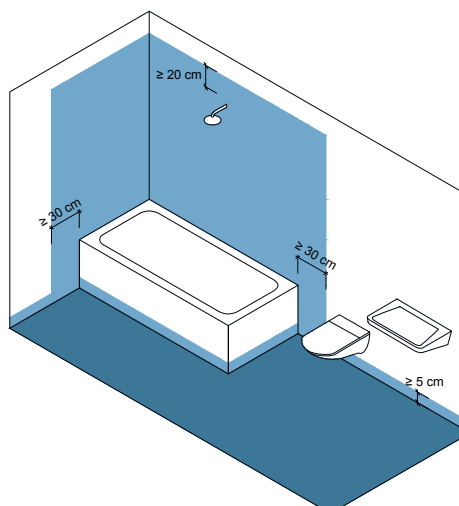
- No or low exposure to splash water, water action class **W0-I**
- Moderate exposure to splash water (splash water zone), water action class **W1-I**
- High exposure to splash water, water action class **W2-I**
- Very high exposure to splash water, water action class **W3-I**



Guest WC

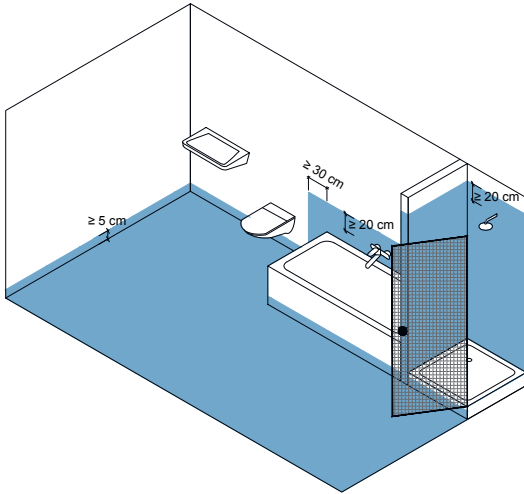


Domestic bathroom with bathtub, handheld shower head and shower screen

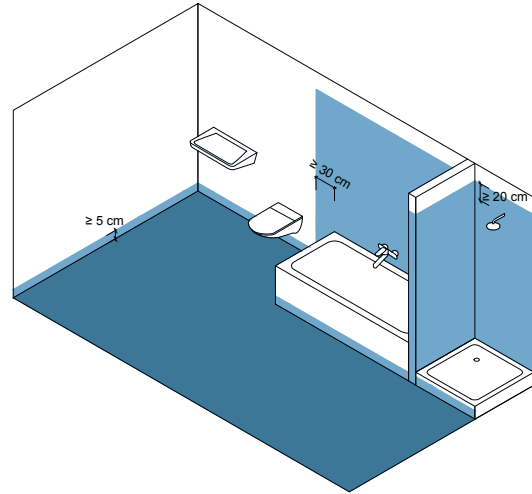


Domestic bathroom with bathtub, handheld shower head without shower screen

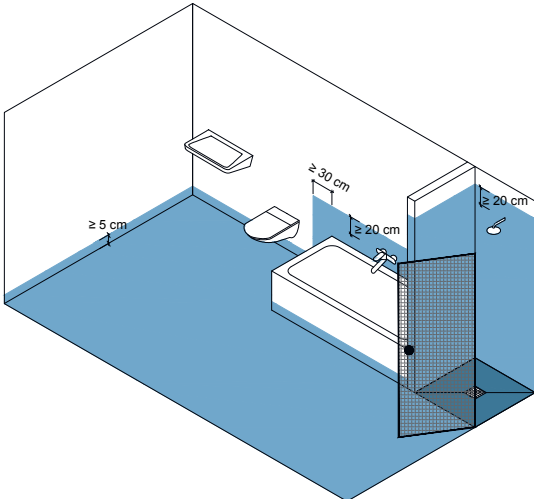
Application examples (continued)



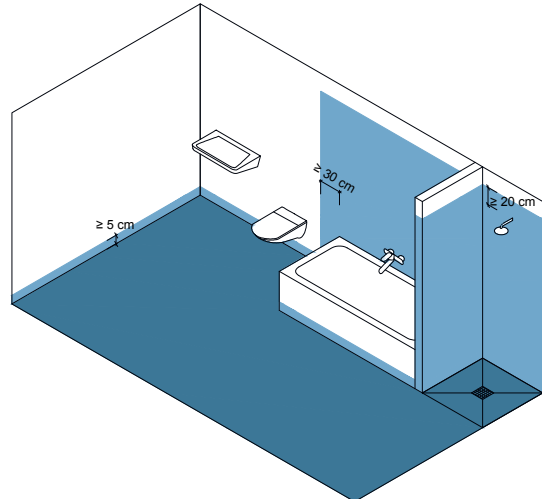
Domestic bathroom with bathtub without shower feature and with a shower tray with effective splash water protection



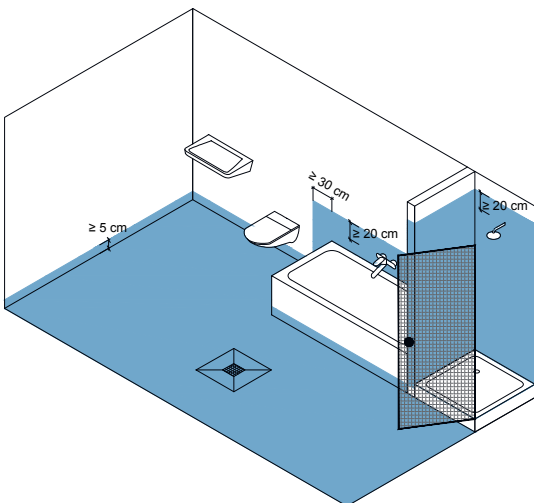
Domestic bathroom with bathtub with shower feature and with a shower tray without effective splash water protection



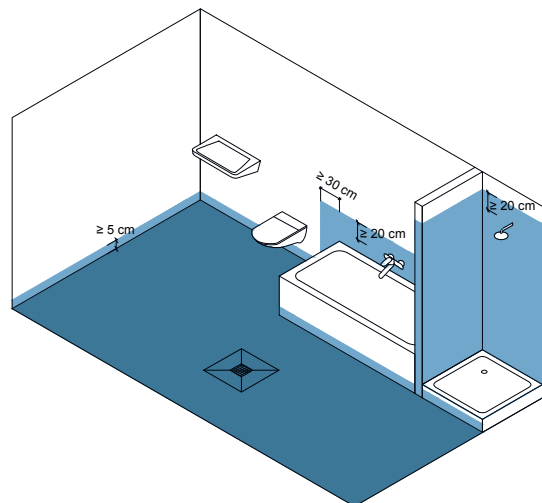
Domestic bathroom with bathtub without shower feature and with a shower flush to the floor with effective splash water protection



Domestic bathroom with bathtub with shower feature and with a shower flush to the floor without effective splash water protection

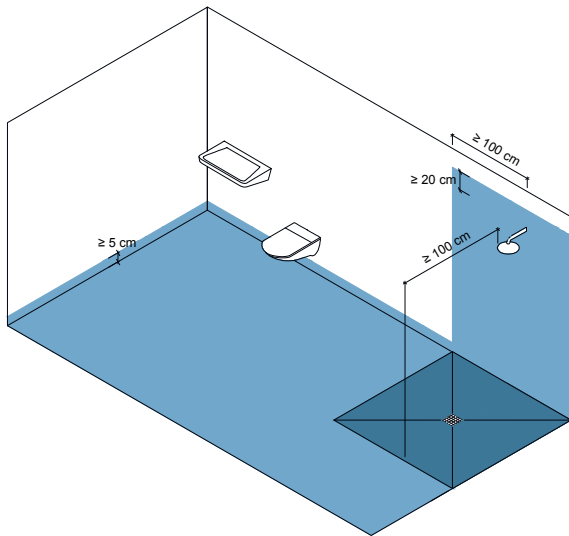


Domestic bathroom with bathtub without shower feature, shower tray with effective splash water protection and with drains not used systematically

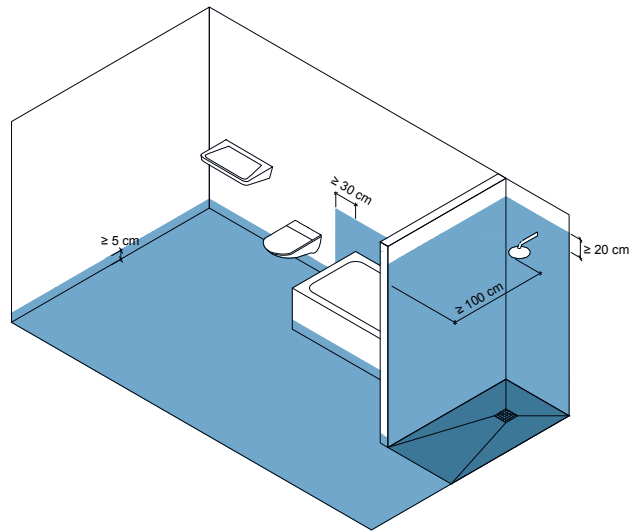


Domestic bathroom with bathtub without shower feature, shower tray without effective splash water protection and with drains not used systematically

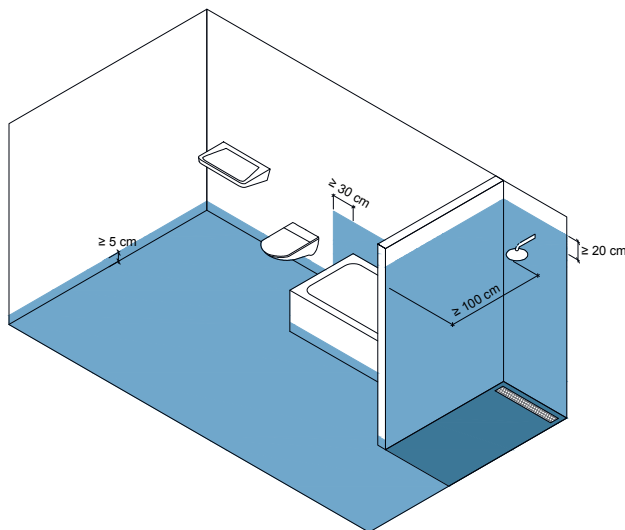
Application examples (continued)



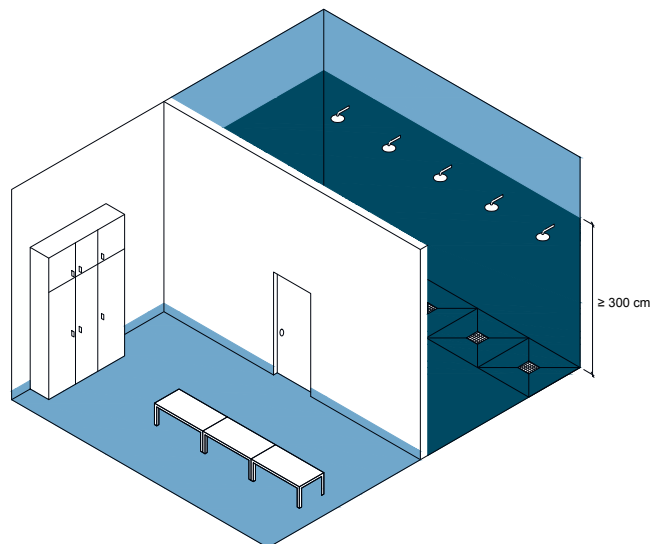
Domestic bathroom with shower flush to the floor without effective splash water protection but with a sufficient water drain zone



Domestic bathroom with bathtub without shower feature and with a shower flush to the floor without effective splash water protection but with a sufficient water drain zone



Domestic bathroom with bathtub without shower feature and with a shower flush to the floor without effective splash water protection but with a sufficient water drain zone



Example for the water action class W3-I
Showers in public swimming pools, fitness studios, etc.

Application examples legend

- No or low exposure to splash water, water action class **W0-I**
- Moderate exposure to splash water (splash water zone), water action class **W1-I**
- High exposure to splash water, water action class **W2-I**
- Very high exposure to splash water, water action class **W3-I**

► Good to know

Further information on professional and permanent application can be found in the Code of Practice 5 "Bäder und Feuchträume im Holz- Trockenbau - Bathrooms and wet rooms in timber and drywall construction" issued by Industriegruppe Gipsplatten im Bundesverband der Gipsindustrie e.V. in Germany.

Determination of substrates acc. to EN 18534-1

Moisture sensitive substrates	Moisture insensitive substrates
<ul style="list-style-type: none"> ■ Gypsum plasters and gypsum lime plasters made of dry gypsum mortar acc. to EN 13279-1 ■ Gypsum wallboards acc. to EN 12859 ■ Gypsum boards with fleece reinforcement to EN 15283-1 ■ Gypsum fibre boards acc. to EN 15283-2 ■ Gypsum boards acc. to DIN 18180 or alt. EN 520 ■ Calcium sulphate based screed acc. to EN 13813 ■ Wood and wooden composite materials 	<ul style="list-style-type: none"> ■ Concrete acc. to EN 206 ■ Lime cement plaster of mortar group CS II/III acc. to EN 998-1 ■ Cement of mortar group CS IV acc. to EN 998-1 ■ Cavity wallboards made of light concrete acc. to DIN 18148 ■ Cementitious mineral wallboards ■ Composite units made of expanded or extruded polystyrene with coating of mortar and mesh reinforcement ■ Aerated concrete boards acc. to DIN 4166 ■ Cementitious screed ■ Corrosion-protected metallic materials ■ Products with Certificate of Usability (abZ/aBG/ETA) for this area

Notes and recommendations for damp-proof sealing acc. to Code of Practice No. 5

Substrate	Water action classes											
	W0-I (low)			W1-I (moderate)			W2-I (high)			W3-I (very high)		
	Floor	Wall	Ceiling	Floor	Wall	Ceiling	Floor	Wall	Ceiling	Floor	Wall	Ceiling
Knauf gypsum board EN 520	–	•	•	X	L-R-B	•	–	–	–	–	–	–
Drystar Board	–	•	•	X	L-R-B	•	–	–	–	–	–	–
Gypsum fibre boards EN 15283-2	•	•	•	L-R-B ¹⁾	L-R-B	•	–	–	–	–	–	–
Knauf gypsum plaster EN 13279-1, e.g. MP 75	X	•	•	X	L-R-B	•	X	–	–	X	–	–
Knauf lime-cement plasters EN 998-1, e.g. Rotkalk	X	•	•	X	• ²⁾	•	X	L-R-B	D	X	MR	S
Knauf flowing screeds EN 13813, e.g. FE 80	•	X	X	L-R-B ¹⁾	X	X	–	X	X	–	X	X
AQUAPANEL Cement Board Indoor/SkyLite	X	•	•	X	• ²⁾	• ²⁾	X	L-R-B	S	X	MR	S
Wood and wooden composite boards	–	–	–	–	–	–	–	–	–	–	–	–

1) Not permissible in areas with drains used systematically (e.g. Barrier free shower areas)

2) Detailed sealing required if water can ingress moisture-sensitive component layers, e.g. insulation.

Legend of symbols

- No sealing is necessary provided that water-repellent surfaces available (apply sealing if deemed necessary and requested by the client or planner)
- X Application not possible
- Application not permissible

Legend of abbreviations

L-R-B S/B liquid or rolls/sheets or board form

MR-R-B S/B-L exclusively mineral-based or reaction resin or S/B sheets or board form

MR S/B-L exclusively mineral-based or reaction resin

S Sealing recommended

S/B Sealing bonded with the substrate and the wearing and protective layer made of tiles and boards

S/B-L Sealing materials in liquid form for application bonded with tiles and boards

S/B-B Application of board type sealing materials bonded with tiles and boards

Note	Divergences from the table are permissible, if the application in industrial structural wood frame panel construction observes the QDF guidelines ³⁾ or a proof of the equivalence of the measures in the form of a survey by a technically qualified bodies is submitted. A list of the technically qualified bodies is available from the Quality Association of German Pre-fabrication (QDF).
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3) QDF: Qualitätsgemeinschaft Deutscher Fertigbau - Quality Association of German Pre-fabrication

Basics

Corrosion

Corrosion is the chemical reaction of metallic materials with substances in the environment. These materials often lose their good surface qualities and structural properties due to corrosion. The changes are measurable. Corrosion is often an electro-chemical phenomenon.

Corrosion protection

In rooms, in which the relative humidity only briefly exceeds 60 % in the course of the day and where condensation and corrosive impurities can be excluded with certainty, standard metal profiles are used in wall and ceiling systems. An example here would be domestic applications.

On the other hand, in rooms with high levels of air humidity or special atmospheric conditions, measures for enhanced corrosion protection are required. Knauf offers the wet room stud frame with additional protection against corrosion specially for this field of application. The damp room stud frames fulfil the demands of the corrosivity category C3 (high) and C5-M (high).

Definition of corrosion acc. to EN ISO 8044

Corrosion means the physicochemical interaction between a metal and its environment which leads to a change in the properties of the metal

and is liable to cause substantial impairment of the function of the metal, the environment or the technical system of which the metal is a part. This interaction is often of an electro-chemical nature.

For determination of the required level of corrosion protection or the corrosivity category, the table "Approximate assignment of the atmospheric conditions of the EN ISO 12944" can be used.

Normative background

The topic of corrosion protection in drywalling is the subject of several different standards. Corrosion protection conditions and notes on the implementation can be addressed in the EN 13964 "Suspended ceilings - Requirements and test methods" as well as in the DIN 18168 part 1 "Ceiling linings and suspended ceilings with gypsum plasterboards" for drywalling. In order to provide an assessment basis for partition stud frames, the standard EN 12944 "Corrosion protection of steel structures by protective paint systems" or DIN 55634 "Paints, varnishes and coatings – Corrosion protection of supporting thin-walled building components made of steel" can be used as a reference.

Wet area stud frame

The requirements of the building are diverse. This is why Knauf offers a comprehensive range of profiles and accessories in corrosion protection quality C3 or C5-M. For more detailed information see "Wet area grid" on page 26.

Corrosivity, extract from the standard series EN ISO 12944

Corrosivity category Corrosion stress		Corrosivity	Durability		Condensing of water vapour Hours	Influence of salt spray Hours	Examples of typical environments
			Class	Years			
C1 very low	Very low, hardly aggressive, internal	Low	2 to 5	–	–	Heated buildings with neutral atmospheres, e.g. offices, shops, schools, hotels	
		Medium	5 to 15	–	–		
		High	more than 15	–	–		
C2 low	Very low, moderately aggressive, external/internal	Low	2 to 5	48	–	Unheated buildings where condensation can occur, e.g. stores, sports halls	
		Medium	5 to 15	48	–		
		High	more than 15	120	–		
C3 medium	Moderate, hardly aggressive, external/internal	Low	2 to 5	48	120	Production rooms with high levels of moisture and some air pollution, e.g. plants for manufacturing foodstuffs, laundries, breweries, dairies	
		Medium	5 to 15	120	240		
		High	more than 15	240	480		
C4 high	High, moderately aggressive, external/internal	Low	2 to 5	120	240	Chemical plants, swimming pools, boathouses above sea water	
		Medium	5 to 15	240	480		
		High	more than 15	480	720		
C5-M very high (maritime)	Very high, maritime, external/internal	Low	2 to 5	240	480	Buildings or areas with almost permanent condensation and high degree of contamination	
		Medium	5 to 15	480	720		
		High	more than 15	720	1440		
Notes	When exposed to corrosive substances on the surface or in the air, the minimum requirement is always C5-M. Walls and ceiling surfaces in non splash water areas generally do not require sealing.						

► Good to know

The durability is the expected service life of a coating system until the first maintenance cycle. The durability is not a warranty period.

Necessary corrosion protection in dependence on the substrate and water action class

Substrate	Corrosion protection											
	W0-I (low)			W1-I (moderate)			W2-I (high)			W3-I (very high)		
	Floor	Wall	Ceiling	Floor	Wall	Ceiling	Floor	Wall	Ceiling	Floor	Wall	Ceiling
Knauf gypsum board EN 520		Z100	Z100		Z100	Z100	–	–	–	–	–	–
Drystar-Board	Z100	Z100	Z100		Z100	Z100	–	–	–	–	–	–
Gypsum fibre boards EN 15283-2	Z100	Z100	Z100	Z100	Z100	Z100	–	–	–	–	–	–
AQUAPANEL Cement Board		Z100	Z100		Z100/C3 ¹⁾	Z100	–	C3	C3	–	C3/C5-M	C3

1) Z100 with seal or C3 without seal

Notes	Z100 describes the protective coating of the profiles in acc. to DIN 18182-1 in conjunction with the EN 14195.
	Z100 means 100g/m ² of zinc layer on both sides – corresponding to 7 µm per side in acc. to DIN 18168-1:2007-04 table 2.

► Good to know

The definition of the necessary corrosion protection is undertaken by the planner in dependence on the conditions existing on-site.

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



System components

Product overview

Knauf GKBI/GKFI

Drystar-Board

AQUAPANEL Cement Board Indoor

AQUAPANEL Cement Board SkyLite

Wet area stud frame

Comparison of the fields of application of Knauf boards in wet and damp areas

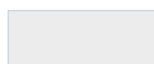
Water action class	Application surfaces	Knauf GKB/GKF	Knauf Drystar Board Knauf GKB/GKFI
		Knauf Wallboard (GKB) Knauf DIY Board (GKB) Knauf Piano fire-resistant board (GKF) Knauf Feuerschutzplatte fire-resistant board (GKF) Solid Board (GKF)	Knauf Wallboard (GKBI) Knauf DIY Board (GKBI) Knauf Piano fire-resistant board (GKFI) Knauf Feuerschutzplatte fire-resistant board (GKFI) Solid Board (GKFI) Diamant (GKFI)
 W0-I (0 – low)	Wall Guest WC	✓ ✓	✓
	Ceiling Domestic bathroom	✓ ✓	✓
	Floor In domestic areas, e.g. in kitchens, domestic utility rooms, guest WCs		
 W1-I (A0 – moderate)	Wall Domestic bathroom (Shower and bathtub area)	✓	✓ ✓
	Ceiling Sports facilities/wellness areas (Ceiling height ≥ 3 m)	✓	✓ ✓
	Floor Domestic bathroom away from the shower area		
 W2-I (A – high)	Wall Public showers or wet rooms of sports facilities		
	Ceiling Swimming pools / public showers		
 W3-I (C – high)	Wall Commercial kitchens or laundries with chemical exposure		
	Ceiling Commercial kitchens or laundries with chemical exposure		




Recommended



Suitable



Not suitable

AQUAPANEL Cement Board Indoor	AQUAPANEL Cement Board SkyLite	Pre-fab screed Brio
		
✓		
✓	✓	
		✓ ✓
✓		
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W0-I / W1-I

W11.de

W6-I.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de

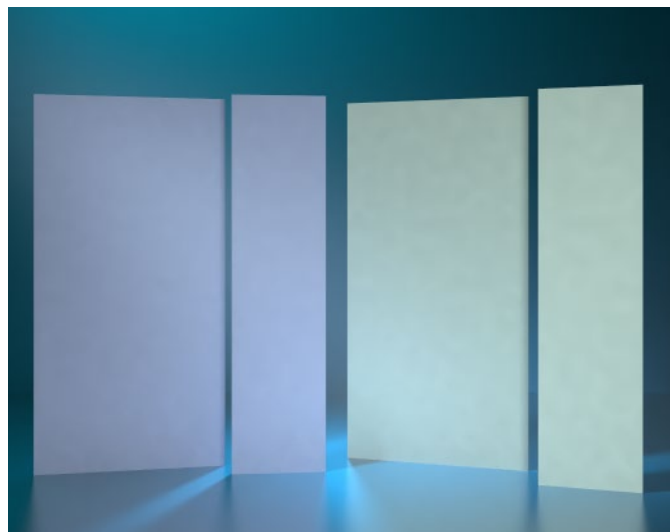
Gypsum boards for areas with moderate humidity

Solutions are required, particularly in residential construction, which are universal in application and not just to resist moisture, but also all other situations encountered on a daily basis.

Product description

Knauf boards GKBI/GKFI have special features for the application in rooms with moderate levels of humidity. They are gypsum boards with an impregnated gypsum core. This impregnation guarantees reduced water absorption. Diverse fields of application on walls and ceilings are possible.

Knauf Diamant GKFI boards are used in all fields of interior works as cladding of premium drywall systems with enhanced requirements for sound insulation and fire protection, and in case of special requirements on mechanical resistance and in rooms with moderately high humidity.



Properties and added value

- Impregnated for reduced water absorption
- Easy application
- Non-combustible
- Low expansion and shrinkage when climate conditions change
- Flexible method of construction even with arched components or design units
- Convenient format (Knauf DIY Board)
- Good coherence of structure when exposed to fire (GKFI)
- Universal application (Knauf Diamant)
- Increased permissible wall heights due to high strength (Knauf Diamant)
- High dowel load capacity (Knauf Diamant)
- Robust surface (Knauf Diamant)
- Flexurally ductile special gypsum core for high sound insulation (Knauf Diamant)
- Bending is possible (board thickness 12.5 mm)
- Narrow format (DIY Board, Solid Board, Knauf Diamant 18)
- Suitable for larger substructure clearances (Knauf Diamant 18 / Solid Board)
- Solid character (Solid Board)
- High stability even with single-layer constructions (Solid Board)

Fields of application

The gypsum boards for basis systems in drywalling convince with their simple application and a high level of form stability. The impregnation of the boards make ideal for cost-effective cladding in domestic applications.







- Kitchen
- Guest WC
- Bathroom

For enhanced demands regarding sound insulation and fire resistance as well as robustness, we recommend the use of Knauf Feuerschutzplatten fire-resistant board, Feuerschutzplatten Knauf Piano fire-resistant board or Knauf Diamant.

Application areas




- Ceiling linings and suspended ceilings
- Attic linings
- Metal stud partitions
- Installation walls
- Timber stud partitions, non-load bearing
- Structural wood frame partitions
- Furrings
- Dry lining (Knauf DIY Board)
- Installation walls

Features

Board width	Board thickness	Minimum weight	Edges		Board liner colour	Rear side marking	Board type	
			Long edges with paper lining	Front edges			DIN 18180	EN 520
mm	mm	kg/m²						
Knauf Wallboard GKBI 12.5								
 1250	12.5	≥ 8.5	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Green	Blue	GKBI	H2
Knauf DIY Board GKBI 12.5								
 600	12.5	≥ 8.5	Half-rounded edge (HRK)	Cut square edge (SK)	Green	Blue	GKBI	H2
Knauf Piano fire-resistant board GKFI 12.5								
 1250	12.5	≥ 10.0	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Green	Red	GKFI	DFH2
Knauf Feuerschutzplatte fire-resistant board GKFI 15								
 1250	15	≥ 12.0	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Green	Red	GKFI	DFH2
Solid Board GKFI 20								
 625	20	≥ 16.0	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Green	Red	GKFI	DFH2
Solid Board GKFI 25								
 625	25	≥ 20.0	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Green	Red	GKFI	DFH2

Legend for board types: see next page

Features (continued)

Board width	Board thickness	Nominal weight	Edges		Board liner colour	Rear side marking	Board type	
mm	mm	kg/m²	Long edges with paper lining	Front edges			DIN 18180	EN 520
Knauf Diamant GKFI 12.5								
 1250	12.5	12.8	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Blue	Red	GKFI	DFH2IR
Knauf Diamant GKFI 15								
 1250	15	15.5	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Blue	Red	GKFI	DFH2IR
Knauf Diamant GKFI 18								
 625	18	18.0	Half-rounded tapered edge (HRAK)	Cut square edge (SK)	Blue	Red	GKFI	DFH2IR

Legend for board types:

D = Gypsum plasterboard with controlled density

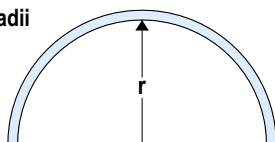
F = Gypsum boards with mat reinforcement with improved core adhesion at high temperature

H2 = Gypsum boards with mat reinforcement with reduced water absorption rate ≤ 10 %

I = Gypsum plasterboard with enhanced surface hardness

R = Gypsum plasterboard with enhanced strength

Minimum permissible bending radii



Board GKBI/GKFI	Permissible bending radius r	
	Dry bending	Wet bending
Knauf Wallboard GKBI 12.5	$r \geq 2500 \text{ mm}$	$r \geq 1000 \text{ mm}$
Knauf DIY Board GKBI 12.5	$r \geq 2500 \text{ mm}$	$r \geq 1000 \text{ mm}$
Knauf Piano fire-resistant board GKFI 12.5	$r \geq 2500 \text{ mm}$	$r \geq 1000 \text{ mm}$
Knauf Feuerschutzplatte fire-resistant board GKFI 15	—	—
Solid Board GKFI 20	—	—
Solid Board GKFI 25	—	—
Diamant GKFI 12.5	$r \geq 2500 \text{ mm}$	$r \geq 1000 \text{ mm}$
Diamant GKFI 15	—	—
Diamant GKFI 18	—	—

Special accessories

Uniflott impregnated

Uniflott impregnated is a special gypsum-based synthetically enhanced powdery filling material set by the use of additives. Uniflott impregnated is water-repellent and matched to impregnated (green) Knauf boards.



Diamant screws

An important component for sophisticated Knauf Diamant systems is the Knauf Diamantschraube screw. The special thread geometry ensures easy insertion and tightening of the screw in hard gypsum boards.

Diamant screw XTN



Diamant screw XTB



Fasteners

Ceiling Steel Dowel



Knauf access panels

Access panel for installation in walls (drywall partitions and furrings/linings) and in suspended ceilings consisting of:

- Anodised aluminium frame
- Openable and fully detachable hatch
- Flush adhesively bonded or screw fixed gypsum board Diamant GKFI (with dimensions > 600 mm only for screw fastened gypsum board Diamant GKFI)
- Self-activating drop catch



Access panel without fire resistance

- E112.de REVO 12.5
- E112a.de REVO 18 Variant
- E112b.de REVO 25 Variant
- E112d.de REVO Airtight / Dust-proof 12.5
- E141.de F-TEC Airtight / Dust-proof and Smoke-proof

Access panels with fire resistance

- E121.de REVO BS30 Decke
- E125a.de REVO BS30 Wall 12.5
- E125b.de REVO BS90 Wall 25

Access panel with splash water protection

E143.de F-TEC Drystar driving-rain proof

Knauf traverses

Knauf multi-purpose traverses



The multi-purpose traverse is suitable for accepting loads attached to the wall up to 1.5 kN/m wall length, e.g. cupboards, boilers, folding wall attached seats, folding handles and similar. It consists of a 23 mm thick multi-layer wooden board and galvanized sheet metal profiles.

Knauf steel anchoring traverse with gypsum fibre insert



The steel anchoring traverse with gypsum fibre insert is suitable for accepting loads attached to the wall up to 1.5 kN/m wall length, e.g. cupboards, shelves, handrails and similar. It consists of 0.75 mm thick sheet metal as well as an 18 mm thick gypsum fibre board.

Knauf steel anchoring traverse



The steel anchoring traverse is suitable for accepting loads attached to the wall up to 1.0 kN/m wall length, e.g. towel holders, cupboards, shelves and similar. Not suitable for dynamic loads such as folding wall attached seats. The steel anchoring traverse consists of 0.75 mm thick sheet metal.

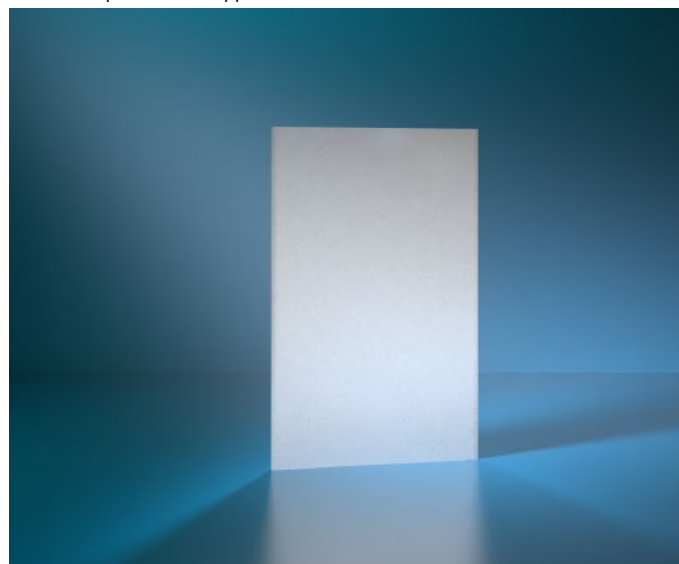
Special gypsum boards for rooms with high levels of air humidity and temporary exposure to splash water

High levels of damp and moisture in rooms require coordinated drywall solutions to meet these demands. Particular attention must be paid to the influences from exposure to chemicals as well as to corrosion protection. This is decisive for the materials and construction materials to be used. Ceilings and walls must meet these demands over the entire life cycle.


The special gypsum board Knauf Drystar Board has special properties for application in damp and wet rooms. Knauf Drystar Board is a special gypsum board laminated with grey-coloured special fleece. Diverse fields of application on walls and ceilings are possible.

Product description

Knauf Drystar Board, type GM-FH1IR corresponds to EN 15283-1 and features a low-level of water absorption of less than 3 % in combination with a high resistance to mould. The special fleece surrounds the water-repellent gypsum core and is an ideal substrate for tiles or other surface coatings. Drystar-Board as well as other Knauf gypsum boards are impressive thanks to their simple and fast application.



Features

Board width	Board thickness	Nominal weight	Edges		Surface fleece colour	Rear side marking	Board type
mm	mm	kg/m ²	Fleece laminated longitudinal edge	Front edge			EN 15283-1
Knauf Drystar-Board 12.5							
 1250	12.5	11.0	Tapered edge (AK)	Cut square edge (SK)	Light grey	Red	GM-FH1IR

Legend for board types:

Drystar Board = GM-FH1IR

GM = Gypsum boards with mat reinforcement

F = Gypsum boards with mat reinforcement with improved core adhesion at high temperature

H1 = Gypsum boards with mat reinforcement with reduced water absorption rate ≤ 5 %

I = Gypsum plasterboard with enhanced surface hardness

R = Gypsum plasterboard with enhanced strength

Properties and added value

- Insensitive to wet and damp
- Mould resistant
- Non-combustible
- Easy application, analogue to conventional gypsum boards
- Ideal substrate for tiles and sealing
- Low expansion and shrinkage when climate conditions change
- Flexible method of construction even with arched components or design units

Fields of application

Knauf Drystar-Board satisfies special requirements in wet and damp rooms. It can be installed in wall and ceiling systems and used in many areas of interior fitting as cladding for drywall systems in wet and damp rooms. Knauf Drystar-Board is an ideal substrate for sealing and tiles as well as coatings. Creative ideas with ceiling and wall design and architectural challenges know no limits. Whether it's folding or bending, Knauf Drystar Board leaves nothing to be desired in room design.

- Swimming pools
- Wellness areas
- Schools and similar educational buildings
- Hospitals

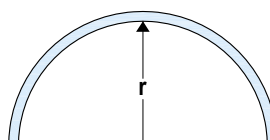
In the representation of the areas of application, it becomes evident that the Knauf Drystar Board optimally supplements the Knauf product range for interior fitting in damp and wet rooms.

Application areas

- Ceiling linings and suspended ceilings
- Metal stud partitions
- Furrings

Minimum permissible bending radii

Dry bending: $r \geq 2750 \text{ mm}$



Special accessories

The system components perfectly matched to one another facilitate safe and durable wall and ceiling constructions, which are resistant to mould and damp.

Drystar-Filler

Knauf Drystar Filler is a limestone-based, synthetically bonded powdery material set by the use of additives to be ideal to its field of application and is used for jointing Drystar systems.



Drystar screws

An important component for the Knauf Drystar Systems is the corrosion-protected Knauf Drystar screw.

Drystar Schraube XTN screw



Drystar Schraube XTB screw



Drystar Schraube LN screw



Fasteners

Ceiling steel dowel corrosion protection A4



Access panel F-TEC Drystar splash waterproof

Splash waterproof access panel (EN 1027, classification EN 12208) for the installation in walls (drywall partitions, furrings, solid walls) and in suspended ceilings.

All-purpose use for cladding thickness 12.5 and 25 mm consisting of:

- An anodised aluminium outer frame with openable and fully detachable hatch
- Flush screw fastened face board made of Drystar-Board (for standard sizes)
- With dimensions > 600 mm supplied only as a screw fixed variant, with dimensions > 800 mm supplied only with trimmer profiles
- Seal
- Self-activating drop catch



Available sizes

Width x length

300 x 300 mm

400 x 400 mm

500 x 500 mm

600 x 600 mm

700 x 700 mm

800 x 800 mm

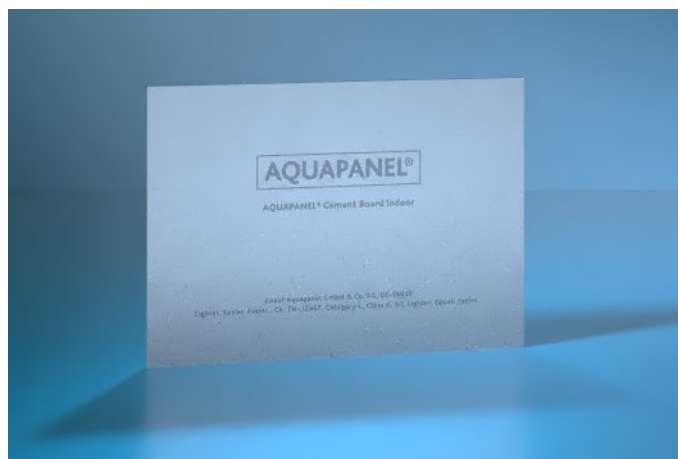
Cementitious wallboard for walls, whose rooms are exposed to damp and wet conditions

In many building sectors resistance to moisture and water is decisive for quality and durability. A building material for these areas must meet diverse requirements.

AQUAPANEL Cement Board Indoor is manufactured from mineral materials, features very good water vapour diffusion behaviour and is resistant to water. Even under the most difficult conditions it offers exceptional durability in wet areas, even when exposed to the effects of chlorine. When exposed to water it will only exhibit extremely minor and system safe changes in shape. The cement board will not change its coherence of structure nor its structural properties. Furthermore, it is resistant to mould growth and thus suitable for use in areas where increased levels of humidity are expected.

Product description

The cement board compliant to EN 12467 consists of a core made of Portland cement and lightweight aggregates and is reinforced with a glass gauze fabric on the front and rear. The ends are cut and the edges are reinforced (EasyEdge™).



Properties and added value

- For all damp and wet rooms
- 100 % water resistant
- Mould resistant
- Safe to apply
- Ecological and eco-friendly, made from natural materials
- Stable and robust with a high level of impact resistance
- Apply with scoring and breaking
- Simple and easy to install
- Can be shaped when dry, bending radius ≥ 1 m with full board length
- Tiles can be applied directly after installation, even with single-layer cladding (spacing 625 mm)
- Can bear up to 50 kg of tiles per m² of wall on one side or 25 kg of tiles on both wall sides
- Surface quality up to AQ4
- Non-combustible

Fields of application

The board can be used in all domestic and commercial wet areas.

- Laboratories
- Kitchens
- Swimming pools
- Saunas
- Protection against moisture is also important in cellars and garages as these constructional components are often subjected to the dangers of moisture from masonry, floors, ground water or even flooding.

Application areas

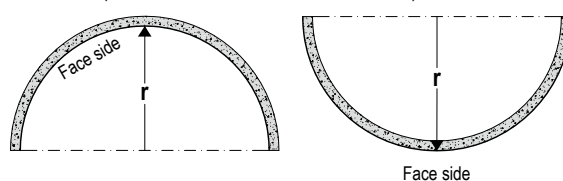
- Metal stud partitions
- Timber stud partitions (non-load bearing)
- Installation shaft walls
- Suspended ceilings

Features

Board width	Board thickness	Nominal weight	Edges
mm	mm	kg/m ²	Long edge or front edge
AQUAPANEL Cement Board Indoor 12.5			
900	1250	12.5	11.0
EasyEdge™			

Minimum permissible bending radii

Dry bending: $r \geq 1000$ mm (Stud spacing ≤ 312.5 mm)
Inside arch, concave Outside arch, convex



Special accessories

AQUAPANEL Fugenkleber (PU) joint adhesive

AQUAPANEL Fugenkleber (PU) joint adhesive is used for frictional bonding of AQUAPANEL Cement Board Indoor in the wall areas.



AQUAPANEL Grundierung primer

AQUAPANEL Grundierung primer is a solvent-free synthetic emulsion for priming AQUAPANEL Cement Board Indoor boards, guaranteeing the maximum adhesion of tiles and plasters. The concentrate is pigmented pink.



Special accessories (continued)

AQUAPANEL Fugen- und Flächenspachtel – weiß joint filler & skim coating – white

AQUAPANEL Fugen- und Flächenspachtel weiß joint filler & skim coating white is a cementitious filler for full surface skimming of AQUAPANEL Cement Board Indoor, e.g. as a substrate for decorative plasters or paint coats. It is applied to the full surface with embedded AQUAPANEL Gewebe mesh.



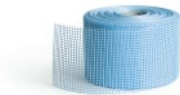
AQUAPANEL Q4 Finish

AQUAPANEL Q4 Finish is a ready-mixed, water-repellent surface filler for premium, smooth surfaces up to quality level AQ4.



AQUAPANEL Fugenband joint tape

AQUAPANEL Fugenband joint tape (10 cm) is a glass fibre tape with an alkali-resistant coating. It is used to reinforce joints and must be embedded in the AQUAPANEL joint filler and skim coating.



AQUAPANEL Gewebe reinforcing mesh

AQUAPANEL Gewebe reinforcing mesh is an alkali-resistant glass fabric and is used to reinforce AQUAPANEL joint filler & skim coating – white.



AQUAPANEL Maxi Schrauben screws

AQUAPANEL Maxi Schrauben screws have been specially developed for fixing AQUAPANEL Cement Board onto timber and metal frameworks of differing thicknesses. Both sharp point and cutting point versions with countersunk are available. AQUAPANEL Maxi Schrauben screws can be used for both wall and ceiling applications in interior and exterior applications. The screws have a special corrosion-proof coating that guarantees a very high level of corrosion resistance.

AQUAPANEL Maxi Schrauben screws SN



AQUAPANEL Maxi Schrauben screws SB



AQUAPANEL traverses

AQUAPANEL damp room traverse M C3



- Sheet metal t = 0.75 mm, coated black
- Height 290 mm
- Max. loading for cladding with AQUAPANEL Cement Board Indoor:

Single-layer cladding	1.0 kN/m
Single-layer cladding tiled	1.5 kN/m
Double-layer cladding	1.5 kN/m

AQUAPANEL damp room traverse MH C3



- Sheet metal t = 0.75 mm, coated black with MDF insert
- Height 290 mm
- Max. loading for cladding with AQUAPANEL Cement Board Indoor:

Single-layer cladding	1.5 kN/m
Single-layer cladding tiled	1.5 kN/m
Double-layer cladding	1.5 kN/m

Note

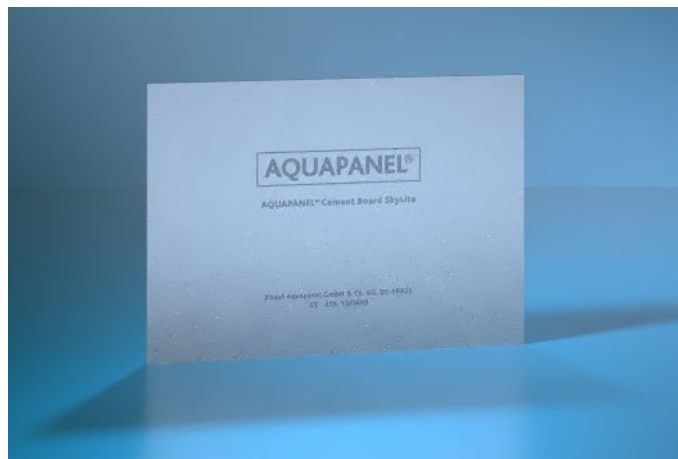
AQUAPANEL damp room traverses are not available ex-stock and are custom manufactured.

Cementitious wallboard for ceilings, whose rooms are exposed to damp and wet conditions

AQUAPANEL Cement Board SkyLite is 100% water- and moisture-resistant as well as resistant to mould and mildew. Due to its low weight of approx. 10.5 kg/m² it is the ideal cement board when performing overhead work.

Product description

The cement board is a light and durable board for installation in suspended ceilings. It consists of a core made of Portland cement and aggregates and is reinforced with a glass gauze fabric on the front and rear. The ends are cut and the edges are reinforced (EasyEdge™).



Properties and added value

- Suitable for interior and exterior application
- 100 % water resistant
- Resistant to mould and mildew
- Ecological and eco-friendly
- Stable and robust
- Apply with scoring and breaking
- Light and easy to install above your head
- Can be shaped when dry, bending radius ≥ 1 m with full board length
- Non-combustible
- Diverse design options

Fields of application

AQUAPANEL Cement Board SkyLite has been developed for use in suspended ceilings and soffits in exterior applications (wind load < 1.5 kN/m²) and for damp and wet rooms in exteriors in interiors.

The ceiling system comes into its own wherever ceilings are subjected to wet and damp conditions.

- Swimming pools
- Communal showers

Application areas

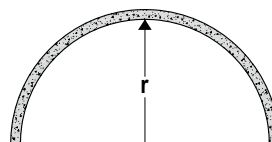
- Suspended ceilings

Features

Board width	Board thickness	Nominal weight	Edges
mm	mm	kg/m ²	Long edge or front edge
AQUAPANEL Cement Board SkyLite 8			
900	8	10.5	EasyEdge™

Minimum permissible bending radii

Dry bending: $r \geq 1000$ mm



Special accessories

AQUAPANEL Grundierung primer

AQUAPANEL Grundierung primer is a solvent-free synthetic emulsion for priming AQUAPANEL Cement Board SkyLite boards, guaranteeing the maximum adhesion of plasters. The concentrate is pigmented pink.



AQUAPANEL SkyLite joint filler & skim coating

AQUAPANEL SkyLite joint filler & skim coating is a cementitious filling material for joint filling and full-surface skim coating (max. surface quality AQ3) to a layer thickness of 4 mm on AQUAPANEL Cement Board SkyLite in ceiling applications, e.g. before the application of decorative plasters or paint coats.



AQUAPANEL Fugenband joint tape

AQUAPANEL Fugenband joint tape (10 cm) is a glass fibre tape with an alkali-resistant coating. It is used to reinforce joints and must be embedded in the AQUAPANEL SkyLite joint filler and skim coating.



AQUAPANEL SkyLite Gewebe mesh

AQUAPANEL SkyLite Gewebe reinforcing mesh is an alkali-resistant glass fabric and is used to reinforce AQUAPANEL SkyLite joint filler & skim coating.



AQUAPANEL Maxi Schrauben SN screws

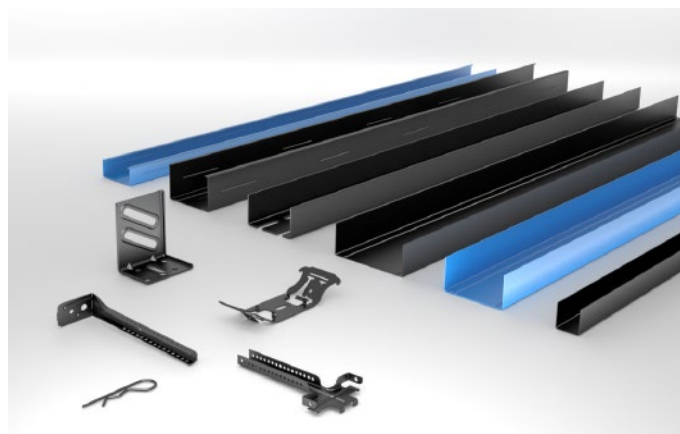
AQUAPANEL Maxi Schrauben SN screws have been specially developed for fixing AQUAPANEL Cement Board onto timber and metal frameworks of differing thicknesses. The screws have a special corrosion-proof coating that guarantees a very high level of corrosion resistance.



The grid with corrosion protection

The wet room metal grid in detail

The requirements of the building are diverse. This is why Knauf offers a comprehensive range of profiles and accessories in corrosion protection quality C3 (high) or C5M (high). To ensure that there is no confusion on the building site, the wet room profile C3 is coated black and the wet room profile C5M is coated blue. All other accessory parts are coated black and can be used in the corrosivity categories C3 / C5M (high), thus excluding mix-ups. For re-coating of the cut edges on the profiles or small parts, we recommend the grey corrosion protection lacquer C3/C5M. On-site, it will be immediately recognizable if all the required subsequent work has been carried out.



Wet room grid for ceilings and walls


Knauf offers everything from a single source for ceiling and wall grids in wet and damp rooms.



Product portfolio wet area stud frame

Profiles	Length in mm	
	C3	C5M
CW 50/50	2600, 3000, 3500, 4000	2600, 3000, 3500, 4000
CW 75/50	2600, 3000, 3500, 4000	2600, 3000, 3500, 4000
CW 100/50	2600, 3000, 3500, 4000	3000, 3500, 4000
CW 125/50	Customized length	–
CW 150/50	Customized length	–
UW 50/40	4000	4000
UW 75/40	4000	4000
UW 100/40	4000	4000
UW 125/40	4000	–
CD 60/27	4000	4000
UD 28/27	3000	3000
UA 50/40	2600, 3000, 3500, 4000	3000, 3500, 4000
UA 75/40	2600, 3000, 3500, 4000	3000, 4000
UA 100/40	2600, 3000, 3500, 4000	3000, 4000

Installation components	Length in mm
Universal bracket for CD 60/27 C3-C5M	120
Nonius hanger top C3/C5M	200, 300, 400, 600, 1000
Nonius hanger bottom for CD 60/27 C3-C5M	–
Nonius-Bügel stirrup for UA 50/40 C3-C5M	–
Connection Angle for UA 50 C3-C5M	–
Connection Angle for UA 75 C3-C5M	–
Connection Angle for UA 100 C3-C5M	–
Intersection connector for CD 60/27 C3-C5M	–
Intersection Connector for UA with CD Channel C3-C5M	–
CD longitudinal connector C3-C5M	–
Nonius-Klammer top pins C3-C5M	–
Anti-corrosive lacquer C3/C5M	750 ml, colour grey

Fastening technology	Corrosion protection
Ceiling steel dowel corrosion protection A4	
	Corrosion protection class III

Applying the profiles

Cut the profile for wet area metal grid using a plate shears or slowly rotating machine tools to ensure that the corrosion protection coating is not damaged. The cut edges should be coated on-site with corrosion protection lacquer C3/C5M.



Water action classes W0-I and W1-I

Metal stud partition systems with gypsum boards

W111.de Metal stud partition, single metal stud frame, single-layer cladding

W112.de Metal stud partition, single metal stud frame, double-layer cladding

W113.de Metal stud partition, single metal stud frame, triple-layer cladding

W115.de Metal stud partition, double metal stud frame, double-layer cladding

W116.de Installation wall, double metal stud frame, single/double-layer cladding

W111.de Metal stud partition, single-layer cladding

Knauf System	Fire resistance class	Cladding per wall side					Weight Without insulation layer approx. kg/m ²	Wall thick- ness D mm	Knauf profile CW Z100 Cavity h mm	Sound insulation	
		Knauf Wallboard (I)	Knauf Plano fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board				Insulation layer Minimum thickness mm	Sound reduction index R _w dB
						t mm					R _{w,R} dB
W111.de metal stud partition											
Single metal stud frame, single-layer cladding											
	-	•				12.5	22	75	50	40	44.2
						12.5	22	100	75	60	47.6
						12.5	22	125	100	80	50.0
					•	12.5	26	75	50	40	44
					•	12.5	26	100	75	60	47.8
					•	12.5	26	125	100	80	50
	F30		•			12.5	25	75	50	40	45.9
			•			12.5	25	100	75	60	48.3
			•			12.5	25	125	100	80	51.2
					•	12.5	29	75	50	40	48.7
					•	12.5	29	100	75	60	51.5
					•	12.5	29	125	100	80	53.2
					•	15	35	80	50	40	50.7
					•	15	35	105	75	60	53.7
					•	15	35	130	100	80	54.2

(I) Gypsum core special impregnation

Sound reduction index values represented in *italics* are derived values from measurements on divergent constructions.

- With fire resistance: Backing for front edge joints with profiles provided no insulation installed.
- With ceramic coverings: Minimum cladding Stud spacing

12.5 mm	Knauf boards	≤ 417 mm
15 mm	Diamant	≤ 625 mm
18 mm	Knauf boards	≤ 625 mm

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 40 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

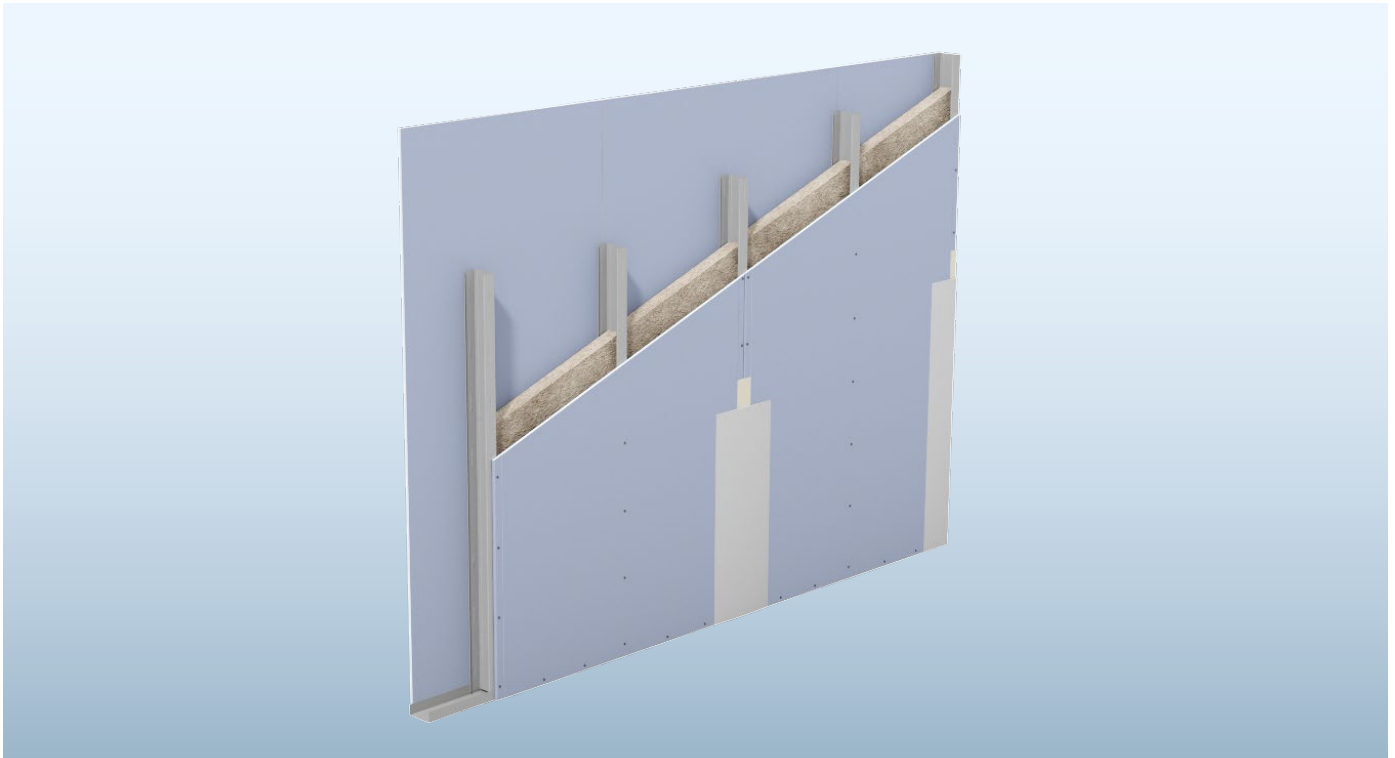
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

Wall heights

W111.de Metal stud partition, single metal stud frame, single-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs a mm	Knauf boards 12.5 mm		Diamant 12.5 mm / 15 mm		Drystar-Board 12.5 mm
		Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance
Metal gauge 0.6 mm		m	m	m	m	m
CW 50	625	3.20 ¹⁾	3.20 ¹⁾	4.00	4.00	3.20 ¹⁾
	417	3.85	3.85	4.00	4.00	3.85
	312.5	4.00	4.00	4.00	4.00	4.00
CW 75	625	4.00	4.00	4.75	4.75	4.00
	417	4.35	4.35	5.40	5.00	4.35
	312.5	4.85	4.85	5.80	5.00	4.85
CW 100	625	5.10	5.00	6.55	5.00	5.10
	417	5.95	5.00	7.20	5.00	5.95
	312.5	6.60	5.00	7.70	5.00	6.60
CW 125	625	6.65	5.00	8.30	5.00	6.65
	417	7.60	5.00	8.95	5.00	7.60
	312.5	8.30	5.00	9.35	5.00	8.30
CW 150	625	8.20	5.00	9.65	5.00	8.20
	417	9.15	5.00	10.20	5.00	9.15
	312.5	9.70	5.00	10.65	5.00	9.70

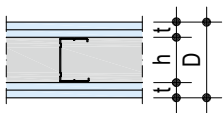
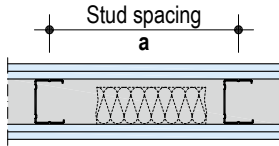
1) only for installation zone 1

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

W112.de Single metal stud frame, double-layer cladding

Knauf System	Fire resistance class	Cladding per wall side					Weight Without insulation layer approx. kg/m²	Wall thick-ness D mm	Profil Knauf profile CW Z100 Cavity h mm	Sound insulation			
		Knauf Wallboard (I)	Knauf Plano fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board t mm				Insula-tion layer Minimum thickness mm	Sound reduction index R _w dB R _{w,R} dB		
W112.de Metal stud partition													
Single metal stud frame, double-layer cladding													
	F30	●				2x 12.5	42	100	50	40	54.1	52	
						2x 12.5		125	75	60	55.9	53	
						2x 12.5		150	100	80	58.4	56	
	F90	●				2x 12.5	48	100	50	40	56.4	54	
						2x 12.5		125	75	60	57.2	55	
						2x 12.5		150	100	80	59.8	57	
		●				12.5 + 12.5	52	100	50	40	59.0	56	
						12.5 + 12.5		125	75	60	59.7	57	
						12.5 + 12.5		150	100	80	63.0	60	
		●				2x 12.5	56	100	50	40	59.4 / 60.1 ¹⁾	57 / 58 ¹⁾	
						2x 12.5		125	75	60	61.5 / 63.0 ¹⁾	59 / 61 ¹⁾	
						2x 12.5		150	100	80	63.2 / 64.5 ¹⁾	61 / 62 ¹⁾	
		●				25 + 12.5	74	125	50	40	64.4	62	
						25 + 12.5		150	75	60	66.2	64	
						25 + 12.5		175	100	80	68.0	66	
			●				2x 12.5	49	100	50	40	54	52
							2x 12.5		125	75	60	56.8	54
							2x 12.5		150	100	80	58	56

1) Upper board layer stapled.

(I) Gypsum core special impregnation

Sound reduction index values represented in italics are derived values from measurements on divergent constructions.

■ With combined cladding always use Diamant as a cover layer

■ F60 on request

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

■ Required for fire resistance: none

■ Fire resistance permissible: Mineral wool **G** **plus**

■ Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

plus Extension of the fire resistance Certificate of Usability

- When applied with insulation layer **G** in conjunction with
 - Wall height > 5.00 m (F90)
 - Cladding with Knauf Wallboard
- Prior consultation in acc. to page 100 is recommended.

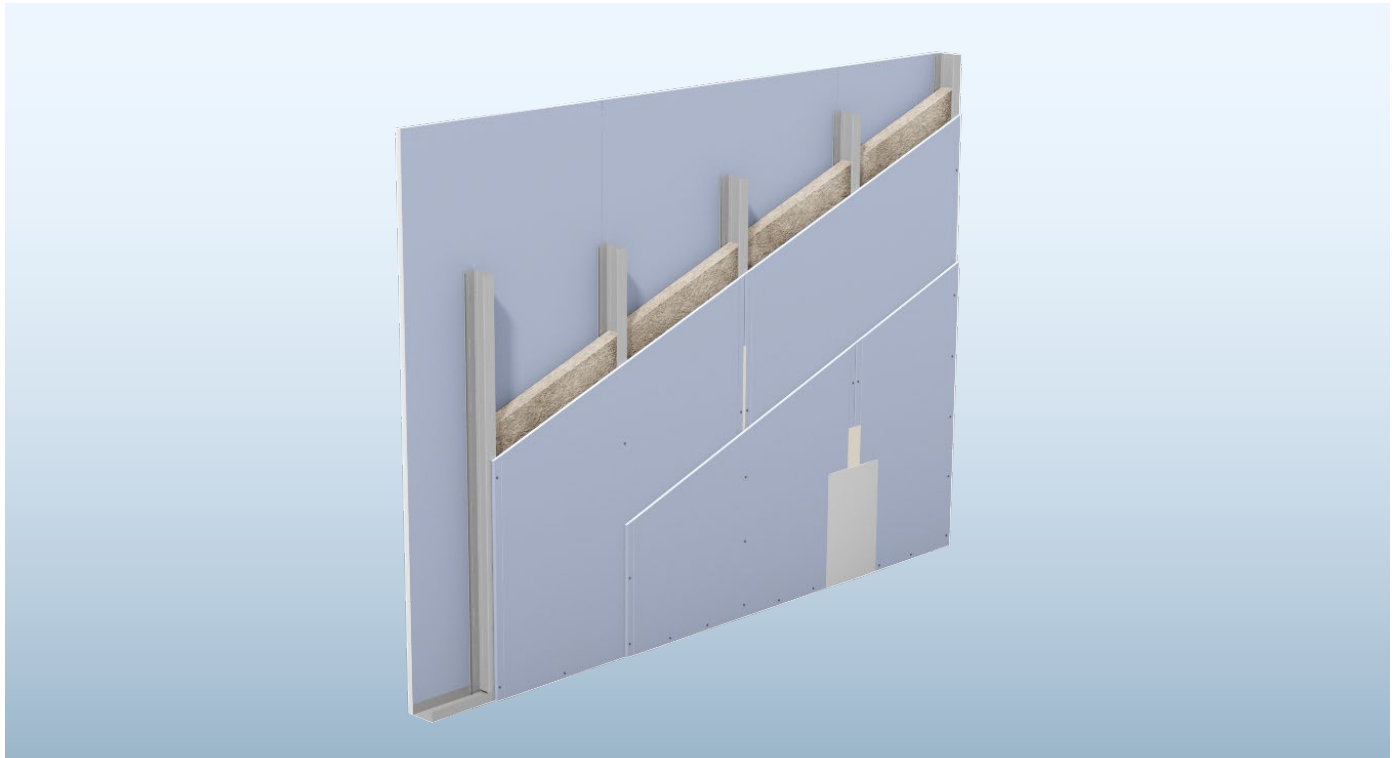
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

Wall heights

W112.de Metal stud partition, single metal stud frame, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	Knauf boards 2x 12.5 mm			Diamant 2x 12.5 mm / Solid Board 25 mm + Diamant 12.5 mm / (All board layers fastened to frame with screws)		Drystar Board 2x 12.5 mm	
		Without fire resistance	With fire resistance		Without fire resistance	With fire resistance	Without fire resistance	With fire resistance
Metal gauge 0.6 mm	a mm	m	F30 m	F90 m	m	F90 m	m	F90 m
CW 50	625	4.00	4.00	4.00	4.75	4.75	4.00	4.00
	417	4.00	4.00	4.00	5.40	5.40	4.00	4.00
	312.5	4.35	4.35	4.35	5.80	5.80	4.35	4.35
CW 75	625	5.05	5.00	5.05	7.20	7.00	5.05	5.00
	417	5.95	5.00	5.95	7.85	7.00	5.95	5.00
	312.5	6.50	5.00	6.50	8.20	7.00	6.50	5.00
CW 100	625	7.15	5.00	7.00	9.30	7.00	7.15	5.00
	417	8.05	5.00	7.00	9.75	7.00	8.05	5.00
	312.5	8.55	5.00	7.00	10.00	7.00	8.55	5.00
CW 125	625	9.05	5.00	7.00	10.80	7.00	9.05	5.00
	417	9.65	5.00	7.00	11.20	7.00	9.65	5.00
	312.5	10.10	5.00	7.00	11.55	7.00	10.10	5.00
CW 150	625	10.35	5.00	7.00	12.00	7.00	10.35	5.00
	417	10.95	5.00	7.00	12.00	7.00	10.95	5.00
	312.5	11.40	5.00	7.00	12.00	7.00	11.40	5.00

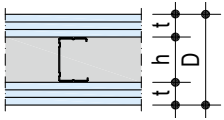
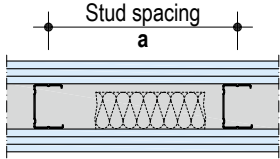
With upper board layer stapled: Wall heights acc. to system W111.de.

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

W113.de Single metal stud partition, triple-layer cladding

Knauf System	Fire resistance class	Cladding per wall side					Weight Without insulation layer approx. kg/m²	Wall thick-ness D mm	Knauf profile CW Z100 Cavity h mm	Sound insulation		
		Knauf Wallboard (I)	Knauf Piano fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board				Minimum thickness t mm	Insulation layer Minimum thickness mm	Sound reduction index R _w dB
W113.de Metal stud partition,												
	F30	●				3x 12.5	61	125	50	40	58.7	56
								150	75	60	58.7	56
								175	100	80	63.9	61
	F90	●				3x 12.5	71	125	50	40	61.0	59
								150	75	60	61.1	59
								175	100	80	64.5	62
		●				3x 12.5	83	125	50	40	64.8 / 66.6 ¹⁾	62 / 64 ¹⁾
								150	75	60	66.3 / 67.1 ¹⁾	64 / 65 ¹⁾
								175	100	80	67.7 / 68.0 ¹⁾	65 / 66 ¹⁾

1) Upper board layer stapled.

(I) Gypsum core special impregnation

With combined cladding always use Diamant as a cover layer

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

■ Required for fire resistance: none

■ Fire resistance permissible: Mineral wool **G** **plus**

■ Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

plus Extension of the fire resistance Certificate of Usability

- When applied with insulation layer **G**
- Prior consultation in acc. to page 100 is recommended.

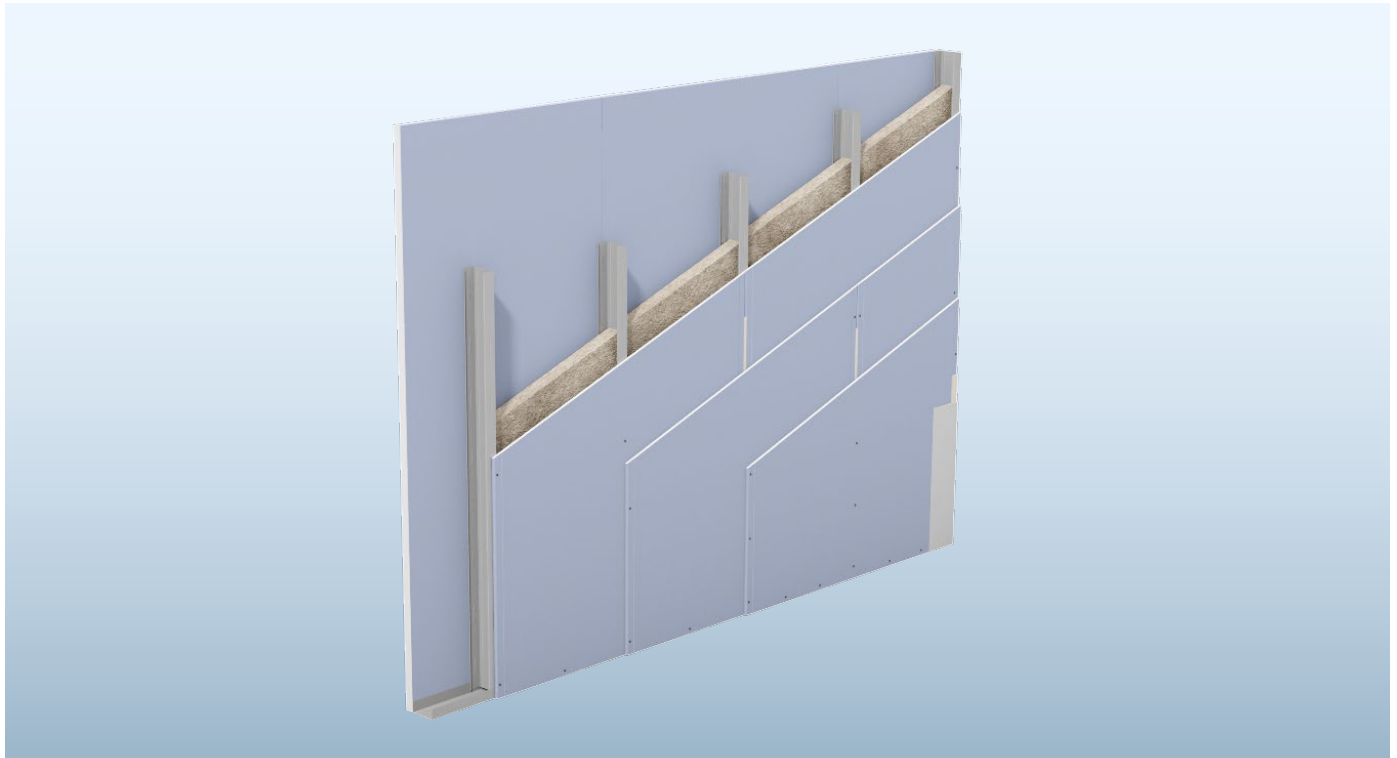
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

Wall heights

W113.de Metal stud partition, single metal stud frame, triple-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	Knauf boards 3x 12.5 mm			Diamant 3x 12.5 mm (All board layers fastened to frame with screws)	
		Without fire resistance	With fire resistance F30	F90	Without fire resistance	With fire resistance F90
Metal gauge 0.6 mm	a mm	m	m	m	m	m
CW 50	625	5.20	5.00	5.20	7.65	7.65
	417	6.05	5.00	6.05	8.15	8.15
	312.5	6.50	5.00	6.50	8.45	8.45
CW 75	625	7.65	5.00	7.65	9.85	9.00
	417	8.35	5.00	8.35	10.20	9.00
	312.5	8.75	5.00	8.75	10.40	9.00
CW 100	625	9.60	5.00	9.00	11.50	9.00
	417	10.05	5.00	9.00	11.85	9.00
	312.5	10.40	5.00	9.00	12.00	9.00
CW 125	625	11.00	5.00	9.00	12.00	9.00
	417	11.50	5.00	9.00	12.00	9.00
	312.5	11.85	5.00	9.00	12.00	9.00
CW 150	625	12.00	5.00	9.00	12.00	9.00
	417	12.00	5.00	9.00	12.00	9.00
	312.5	12.00	5.00	9.00	12.00	9.00

With upper board layer stapled: Wall heights acc. to system W112.de.

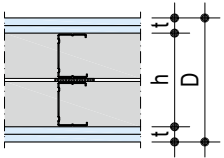
Notes

Observe notes from page 100.

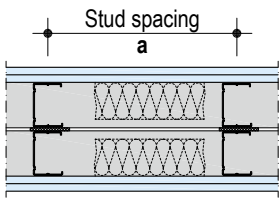
For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

W115.de Double metal stud frame, double-layer cladding

Knauf System	Fire resistance class	Cladding per wall side					Weight Without insulation layer approx. kg/m ²	Wall thickness D mm	Knauf profile CW Z100 Cavity h mm	Sound insulation	
		Knauf Wallboard (I)	Knauf Piano fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board t mm				Insulation layer Minimum thickness mm	Sound reduction index R _w dB R _{w,R} dB



Fire resistance class	Cladding per wall side	Weight	Wall thickness	Knauf profile	Sound insulation
F90	•	2x 12.5	50	155	2x 50 105, 2x 40, 67.3, 64
				205	2x 75 155, 2x 60, 69.7, 67
				255	2x 100 205, 2x 80, 71.9, 69
	•	12.5 + 12.5	54	155	2x 50 105, 2x 40, 68.0, 65
				205	2x 75 155, 2x 60, 70.6, 68
				255	2x 100 205, 2x 80, 73.2, 70
	•	2x 12.5	58	155	2x 50 105, 2x 40, 69.7, 66
				205	2x 75 155, 2x 60, 72.2, 69
				255	2x 100 205, 2x 80, 74.4, 71
	•	2x 12.5 plus	51	155	2x 50 105, 2x 40, -, -
				205	2x 75 155, 2x 60, -, -
				255	2x 100 205, 2x 80, -, -



Fire resistance class	Cladding per wall side	Weight	Wall thickness	Knauf profile	Sound insulation
F90	•	2x 12.5	50	155	2x 50 105, 2x 40, 67.3, 64
				205	2x 75 155, 2x 60, 69.7, 67
				255	2x 100 205, 2x 80, 71.9, 69
	•	12.5 + 12.5	54	155	2x 50 105, 2x 40, 68.0, 65
				205	2x 75 155, 2x 60, 70.6, 68
				255	2x 100 205, 2x 80, 73.2, 70
	•	2x 12.5	58	155	2x 50 105, 2x 40, 69.7, 66
				205	2x 75 155, 2x 60, 72.2, 69
				255	2x 100 205, 2x 80, 74.4, 71
	•	2x 12.5 plus	51	155	2x 50 105, 2x 40, -, -
				205	2x 75 155, 2x 60, -, -
				255	2x 100 205, 2x 80, -, -

(I) Gypsum core special impregnation

With combined cladding always use Diamant as a cover layer

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G plus**
- Required for sound insulation reasons: Mineral wool **G**
Length related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

plus Extension of the fire resistance Certificate of Usability

- When applied with insulation layer **G** in conjunction with a wall height > 5.00 m
- When cladding with Drystar-Board
Prior consultation in acc. to page 100 is recommended.

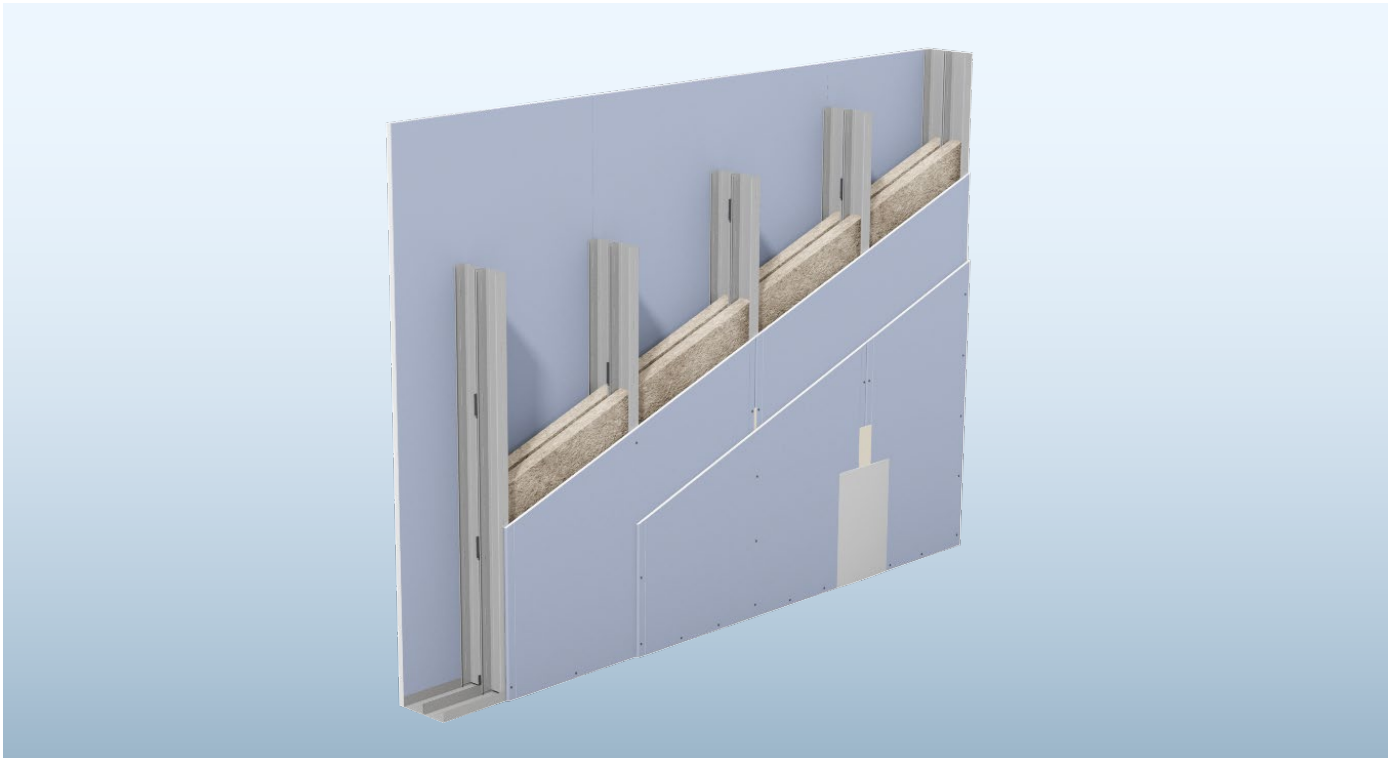
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

Wall heights

W115.de Installation wall, double metal stud frame, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profiles	Spacing of studs	Knauf boards 2x 12.5 mm				Diamant 2x 12.5 mm				Drystar-Board 2x 12.5 mm			
		Installation zone 1		Installation zone 2		Installation zone 1		Installation zone 2		Installation zone 1		Installation zone 2	
Metal gauge 0.6 mm	a mm	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance
		m	F90 m	m	F90 m	m	F90 m	m	F90 m	m	F90 m	m	F90 m
Knauf recommendation													
CW 50	625	3.30	3.30	2.80	2.80	3.60	3.60	3.30	3.30	3.30	3.30	2.80	2.80
CW 75	625	4.50	4.50	4.00	4.00	5.00	5.00	4.50	4.50	4.50	4.50	4.00	4.00
CW 100	625	5.50	5.50	5.00	5.00	6.00	6.00	5.50	5.50	5.00	5.00	5.00	5.00
Acc. to DIN 18183-1													
CW 50	625	4.50	4.50	4.00	4.00	X				X			
CW 75	625	6.00	6.00	5.50	5.50								
CW 100	625	6.50	6.50	6.00	6.00								

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

W116.de Installation wall, single/double layer cladding

Knauf System	Fire resistance class	Cladding per wall side					Weight Without insulation layer approx. kg/m ²	Wall thickness D mm	Profil Knauf profile CW Z100 Cavity h mm	Sound insulation	
		Knauf Wallboard (I)	Knauf Plano fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board				Insulation layer Minimum thickness mm	Sound reduction index R _w dB / R _{w,R} dB
						Minimum thickness t mm					
W116.de Installation wall, Double metal stud frame, single/double-layer cladding											
	-				•	18	48	≥ 141	2x 50 ≥ 105	40	52.5 / 50
										2x 40	56.0 / 54
	F30	•				2x 12.5	46	≥ 155	2x 50 ≥ 105	40	54.0 / 52
	F90		•			2x 12.5	53	≥ 155	2x 50 ≥ 105	40	54 / 52
					•	2x 12.5	61			40	62.5 / 60
					•	2x 12.5	61			2x 40	63.5 / 61
					•	2x 12.5 plus	53			40	54 / 52

(I) Gypsum core special impregnation

Sound reduction index values represented in italics are derived values from measurements on divergent constructions.

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G plus**
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

plus Extension of the fire resistance Certificate of Usability

- When applied with insulation layer **G** in conjunction with
 - Wall height > 5.00 m (F90)
 - Cladding with Knauf Wallboard
- When cladding with Drystar-Board
Prior consultation in acc. to page 100 is recommended.

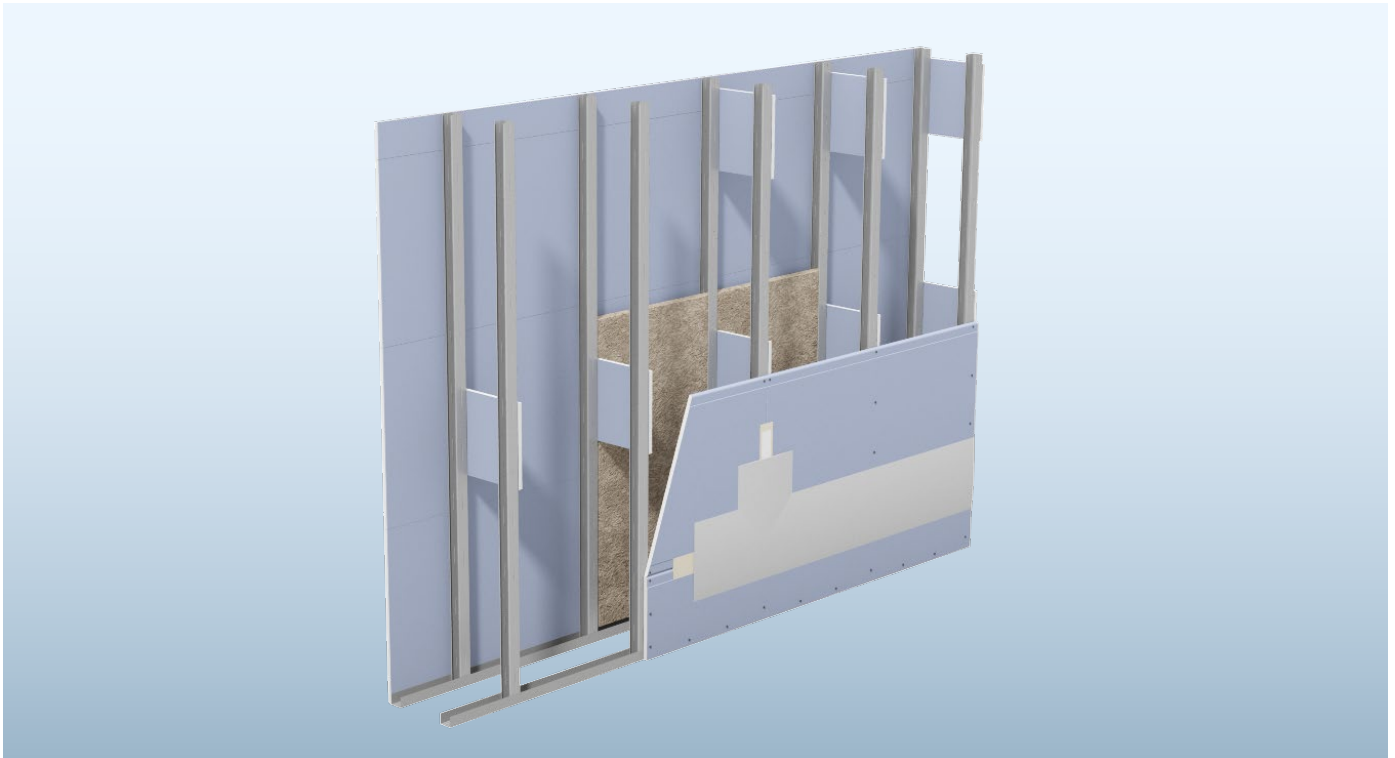
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

Wall heights

W116.de Metal stud partition, double metal stud frame, single/double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profiles	Spacing of studs	Knauf recommendation Diamant 18 mm		Acc. to DIN 18183-1 Knauf boards 2x 12.5 mm						Drystar-Board 2x 12.5 mm			
		Installation zone 1		Installation zone 1		Installation zone 2		Installation zone 2		Installation zone 1		Installation zone 2	
		Without fire resistance	Without fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance	Without fire resistance	With fire resistance
Metal gauge 0.6 mm	a mm	m	m	m	F30 m	F90 m	m	F30 m	F90 m	m	F90 m	m	F90 m
CW 50	625	4.00	3.50	4.50	4.50	4.50	4.00	4.00	4.00	4.50	4.50	4.00	4.00
CW 75	625	4.00	3.50	6.00	5.00	6.00	5.50	5.00	5.50	6.00	5.00	5.50	5.00
CW 100	625	4.00	3.50	6.50	5.00	6.50	6.00	5.00	6.00	6.50	5.00	6.00	5.00

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



Water action classes W0-I and W1-I

Furring systems with gypsum boards

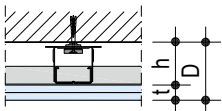
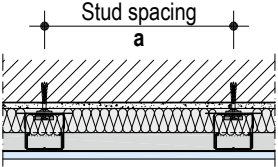
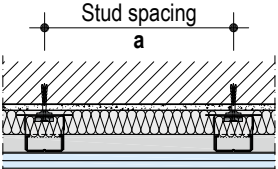
W623.de Furring directly anchored, metal grid CD 60/27 single-/double-layer cladding

W625.de Furring, detached, metal studs CW, single-layer cladding

W626.de Furring, detached, metal studs CW, double-layer cladding

W653.de Furring detached, metal studs CW, single-layer cladding, Solid Board

W623.de Directly anchored, metal grid CD 60/27, single-/double-layer cladding

Knauf System	Cladding				Weight	Mini- mum thick- ness	Knauf CD Z100	Cavity	Sound insulation			
	Knauf Wallboard (I)	Solid Board (I)	Diamant	Drystar-Board					Minimum thickness t mm	Without insulation layer approx. kg/m²	D mm	h mm
												
W623.de Furring directly anchored												
Metal grid CD 60/27, directly anchored with damping universal brackets, single-/double-layer cladding												
	•				12.5	11	≥ 52.5	60/27	≥ 40	≥ 30	8	79
			•		12.5	15	≥ 52.5	60/27	≥ 40	≥ 30	12	65
				•	12.5	13	≥ 52.5	60/27	≥ 40	≥ 30	9	69
	•				2x 12.5	21	≥ 65.0	60/27	≥ 40	≥ 30	11	57
			•		2x 12.5	28	≥ 65.0	60/27	≥ 40	≥ 30	15	47
				•	2x 12.5	24	≥ 65.0	60/27	≥ 40	≥ 30	–	–

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

(I) Gypsum core special impregnation

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m².

■ Measured improvement valis for a basic wall with a mass per unit area of m' = 350 kg/m² ± 50 kg/m².

■ Sound insulation values on existing walls with Damping Universal Brackets.

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

■ Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: r ≥ 5 kPa • s/m²

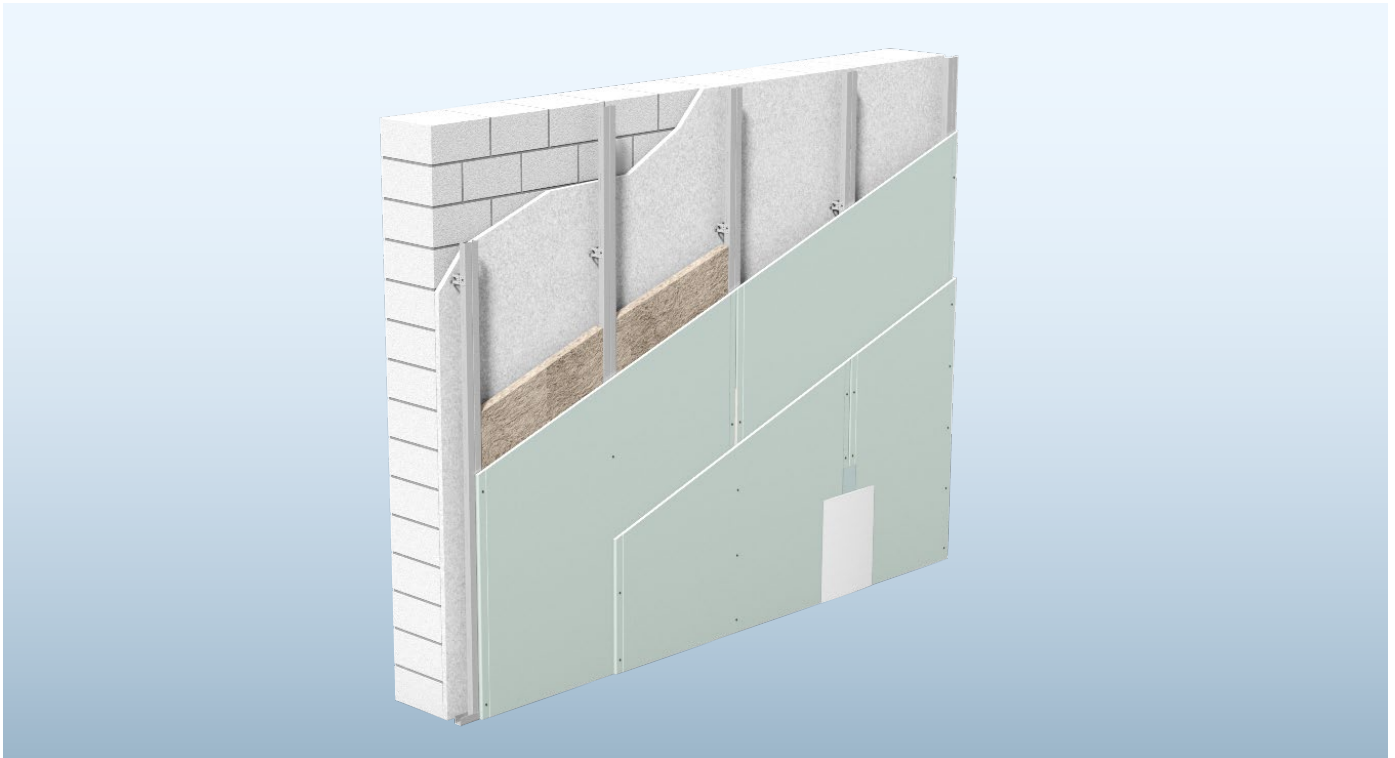
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Furring W61.de.

Wall heights

W623.de Furring directly anchored – Metal grid CD 60/27, single-/double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs a mm	Knauf Wallboard / Diamant 12.5 mm	Drystar-Board 12.5 mm	Knauf Wallboard / Diamant 2x 12.5 mm	Drystar-Board 2x 12.5 mm
Metal gauge 0.6 mm	mm	m	m	m	m
CD 60/27	625	10.00	10.00	10.00	10.00

- Use universal brackets/damping universal brackets 120 mm
- Max. partition cavity 127 mm

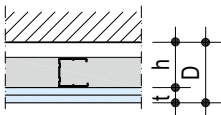
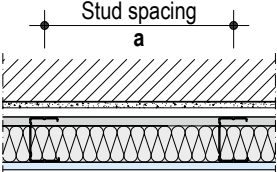
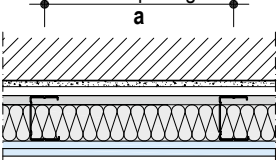
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Furring W61.de.

W625.de Detached, metal studs CW, single-layer cladding

W626.de Detached, metal studs CW, double-layer cladding

Knauf System	Cladding				Weight	Mini- mum thick- ness	Knauf profile CW Z100	Cavity	Sound insulation		
	Knauf Wallboard (I)	Solid Board (I)	Diamant	Drystar-Board					Minimum thickness t mm	Without insulation layer approx. kg/m²	D mm
											
W625.de Furring, detached											
Metal studs CW, single-layer cladding											
	●			12.5	12	≥ 72.5	50	≥ 60	40	10	64
						≥ 97.5	75	≥ 85	60	11	54
						≥ 122.5	100	≥ 110	80	12	47
		●		12.5	16	≥ 72.5	50	≥ 60	40	11	53
						≥ 97.5	75	≥ 85	60	13	45
						≥ 122.5	100	≥ 110	80	14	39
			●	12.5	14	≥ 72.5	50	≥ 60	40	11	57
						≥ 97.5	75	≥ 85	60	12	48
						≥ 122.5	100	≥ 110	80	14	42
W626.de Furring, detached											
Metal studs CW, double-layer cladding											
	●			2x 12.5	22	≥ 85	50	≥ 60	40	13	46
						≥ 110	75	≥ 85	60	14	39
						≥ 135	100	≥ 110	80	15	34
		●		2x 12.5	29	≥ 85	50	≥ 60	40	14	38
						≥ 110	75	≥ 85	60	16	32
						≥ 135	100	≥ 110	80	17	28
			●	2x 12.5	25	≥ 85	50	≥ 60	40	–	–
						≥ 110	75	≥ 85	60	–	–
						≥ 135	100	≥ 110	80	–	–

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

(I) Gypsum core special impregnation

Values in *italics*: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m².

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

■ Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

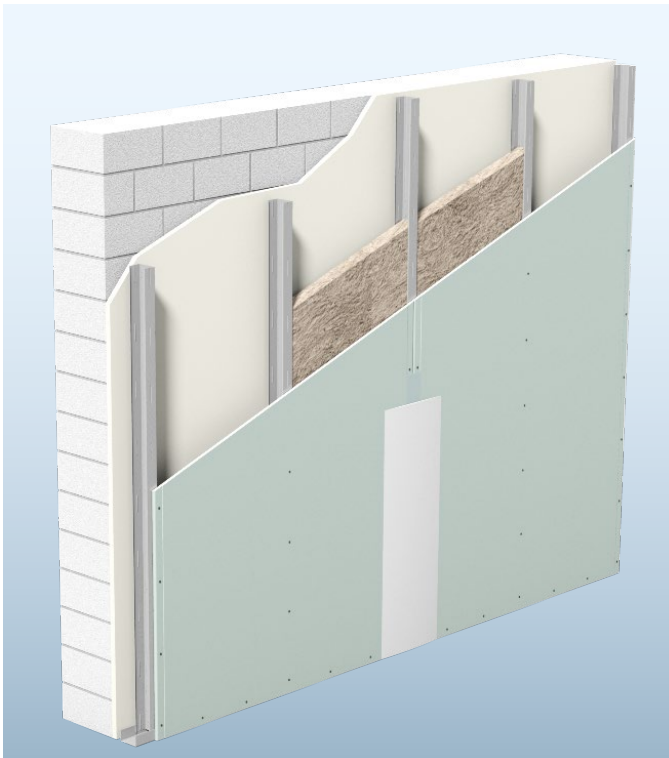
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Furring W61.de.

Wall heights

W625.de Furring, detached, metal studs CW, single-layer cladding



W626.de Furring, detached, metal studs CW, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	W625.de Knauf Wallboard 12.5 mm	Diamant 12.5 mm	Drystar-Board 12.5 mm	W626.de Knauf Wallboard 2x 12.5 mm	Diamant 2x 12.5 mm	Drystar-Board 2x 12.5 mm
Metal gauge 0.6 mm	a mm	m	m	m	m	m	m
CW 50	625	2.70 ¹⁾ / –	3.00 ¹⁾ / 2.15	2.70 ¹⁾ / –	2.95 ¹⁾ / –	3.35 ¹⁾ / 2.65	2.95 ¹⁾ / –
	417	3.25 ¹⁾ / 2.50	3.05	3.25 ¹⁾ / 2.50	3.60 ¹⁾ / 3.20	4.00	3.60 ¹⁾ / 3.20
	312.5	3.65 ¹⁾ / 3.35	3.90	3.65 ¹⁾ / 3.35	4.00	4.00	4.00
CW 75	625	4.00	4.00	4.00	4.00	4.00	4.00
	417	4.00	4.00	4.00	4.00	4.40	4.00
	312.5	4.15	4.45	4.15	4.55	4.95	4.55
CW 100	625	4.15	4.50	4.15	4.50	4.95	4.50
	417	4.95	5.30	4.95	5.40	5.90	5.40
	312.5	5.55	5.90	5.55	6.15	6.65	6.15

1) only for installation zone 1

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Furring W61.de.

W653.de Detached, metal studs CW, single-layer cladding, Solid Board

Knauf System	Cladding				Weight	Minimum thickness	Knauf profile CW Z100	Cavity	Sound insulation		
	Knauf Wallboard (I)	Solid Board (I)	Diamant	Drystar-Board					Insulation layer G	Improvement index $\Delta R_{w,heavy}$ dB	Resonance frequency ¹⁾ f_0 Hz
					Without insulation layer approx. kg/m²	D mm		h mm			
W653.de Furring detached											
Metal studs CW, single-layer cladding, Solid Board											
	•			20	20	≥ 105	75	≥ 85	60	14	38
						≥ 130	100	≥ 110	80	15	34
	•			25	25	≥ 110	75	≥ 85	60	15	35
						≥ 135	100	≥ 110	80	16	31

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

(I) Gypsum core special impregnation

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m².

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

■ Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

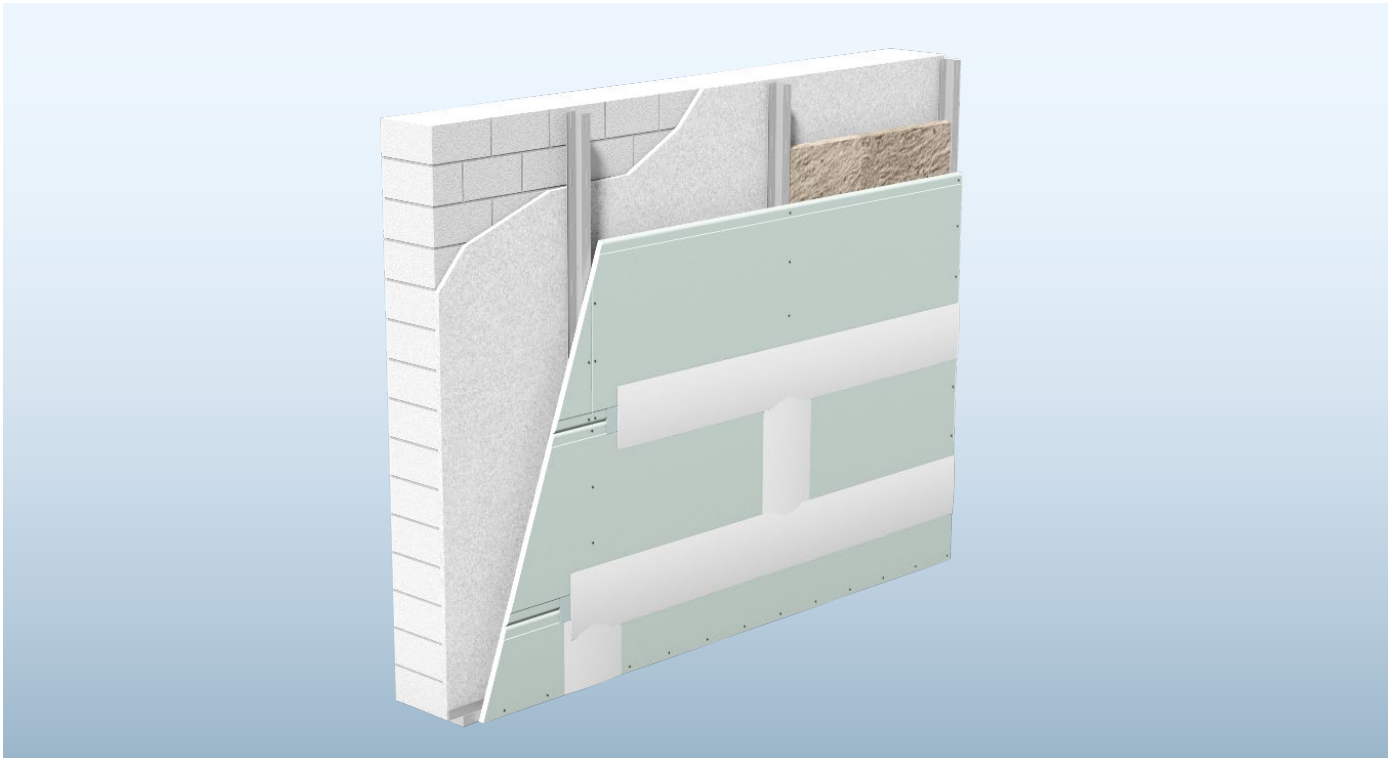
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Furring W61.de.

Wall heights

W653.de Furring detached, metal studs CW, single-layer cladding, Solid Board



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs a mm	Solid Board 20 mm m	Solid Board 25 mm m
Metal gauge 0.6 mm			
CW 75	1000	3.05 ¹⁾ / 2.20	2.30
	625	4.00	4.00
	417	4.00	4.00
	312.5	4.15	4.30
CW 100	1000	4.00	4.00
	625	4.10	4.15
	417	5.00	5.15
	312.5	5.70	5.90

1) only for installation zone 1

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Furring W61.de.

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



Water action classes W0-I and W1-I

Installation Shaft Wall system with gypsum boards

W628A.de Installation Shaft Wall, free spanning, double-layer cladding

W630.de Installation Shaft Wall, metal crossbars with CW studs, double-layer cladding

W628B.de Installation Shaft Wall, single metal stud frame with CW single studs, double-layer cladding

W629.de Installation Shaft Wall, single metal stud frame with CW double studs, double-layer cladding

W635.de Installation Shaft Wall, single metal stud frame with UW double studs, double-layer cladding

W628A.de Free-spanning, double-layer cladding

Knauf System	Fire resistance class	Cladding				Weight	Wall thickness	Knauf angle profile 50/35 Z100	Insulation layer		Sound insulation	
		Knauf Plano fire-resistant board (I)	Knauf fire-resistant board (I)	Solid Board (I)	Diamant				Fire resistance permissible	Min. density	Sound reduction index	
						approx. kg/m ²	D mm	h mm	Minimum thickness	kg/m ³	R _w dB	R _{w,R} dB
W628A.de Installation shaft wall							Without grid, free spanning across shaft width, double layer cladding					
	F90		•			46	50	–	Without		36	33

(I) Gypsum core special impregnation

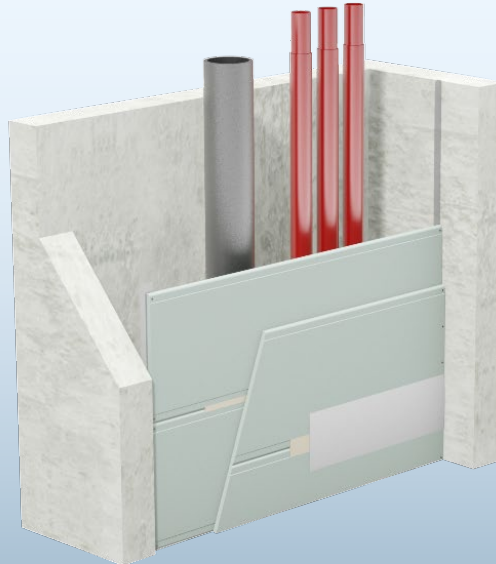
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

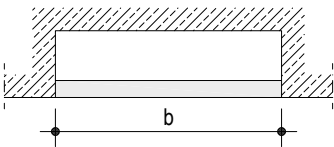
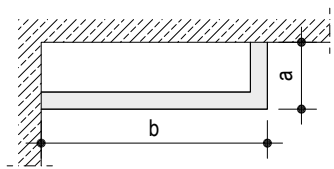
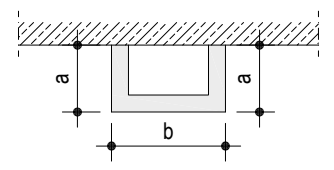
Wall heights

W628A.de Installation shaft wall free spanning, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf perimeter runner	Application	Maximum shaft width/installation shaft wall surface execution m	Wall heights m	plus Increased wall heights m
Angle profile 50/35 Alternative CW stud or UW runner possible	1-sided application		2.00	3.00
	2-sided application plus		$a + b \leq 2.00$	5.00
	3-sided application plus		$2 a + b \leq 2.00$	5.00



Extension of the fire resistance Certificate of Usability

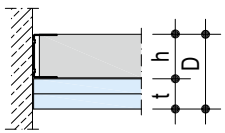
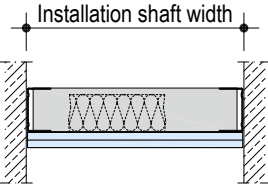
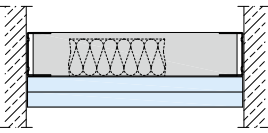
- When the enhanced wall heights are used
 - With 2- or 3-sided application
- Prior consultation in acc. to page 100 is recommended.

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

W630.de Metal crossbars with CW studs, double-layer cladding

Knauf System		Fire resistance class	Cladding				Weight	Wall thick-ness	Knauf profile CW Z100	Insulation layer		Sound insulation															
	Knauf Piano fire-resistant board (I)		Knauf fire-resistant board (I)	Solid Board (I)	Diamant	Min. thick-ness				Without insu-lation layer approx. kg/m²	Cavity	Fire resistance permissible	Min. thick-ness	Min. den-sity	Sound reduction index												
	t mm		D mm												h mm	mm	kg/m³	Minimum insulation layer thickness									
																		– mm	40 mm	60 mm	80 mm	R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB
W630.de Installation shaft wall																			Metal crossbars with CW studs, double-layer cladding								
		F30	•		2x 12.5	26	75	50	Without or mineral wool G plus																		
							100	75												32	30	38	36	38	36	≥ 38	≥ 36
							125	100																			
							75	50																			
							100	75												34	31	39	37	≥ 39	≥ 37	43	40
							125	100																			
		F90	•		2x 20	40	90	50	Without or mineral wool G plus																		
							115	75												35	33	43	41	44	42	≥ 44	≥ 42
							140	100																			

(I) Gypsum core special impregnation

Sound reduction index values represented in italics are derived values from measurements on divergent constructions.

plus Extension of the fire resistance Certificate of Usability

- When applied with insulation layer **G**
- Prior consultation in acc. to page 100 is recommended.

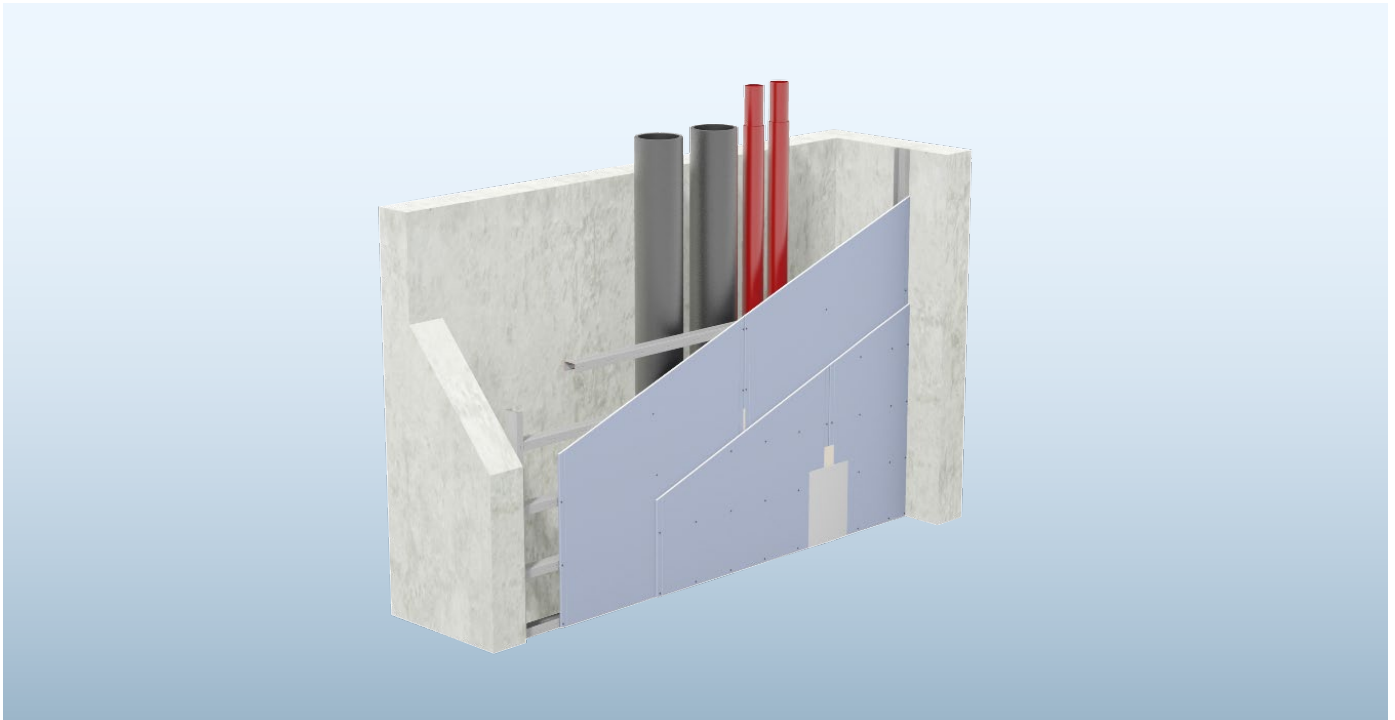
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

Wall heights

W630.de Installation shaft wall metal crossbars with CW studs, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

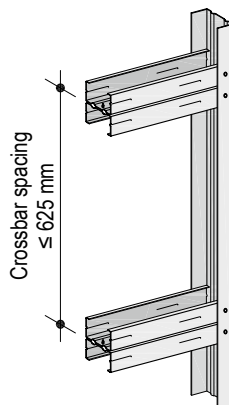
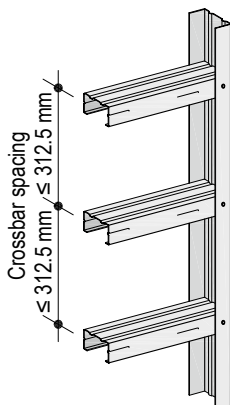
Knauf profile	Maximum crossbar spacing	Knauf Piano fire-resistant board / Diamant 2x 12.5 mm				Solid Board 2x 20 mm			
		Max. installation shaft width		Max. partition height		Max. installation shaft width		Max. partition height	
Metal gauge 0.6 mm	mm	m	m plus	m	m plus	m	m plus	m	m plus
CW 50	312.5 ¹⁾	3.00	3.00	3.00	15.00	3.00	3.00	3.00	15.00
CW 75	312.5 ¹⁾	3.00	4.50	3.00	15.00	4.00	4.50	3.00	15.00
CW 100	312.5 ¹⁾	3.00	5.00	3.00	15.00	4.00	5.00	3.00	15.00

1) For Solid Board an alternative crossbar spacing 625 mm with CW double stud profile possible up to shaft width 4.00 m and shaft height 3.00 m.

Crossbar frame spacing

■ CW profile as crossbar

■ CW double profile as crossbar



CW double profile preferred variant with installed layer

plus

Extension of the fire resistance Certificate of Usability


- When the enhanced shaft widths are used
 - When the enhanced wall heights are used
- Prior consultation in acc. to page 100 is recommended.

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

W628B.de Single metal stud frame with CW single studs, double-layer cladding

Knauf System	Fire resistance class	Cladding			Weight	Wall thickness	Knauf profile CW Z100	Insulation layer		Sound insulation								
		Knauf fire-resistant board (I)	Knauf fire-resistant board (II)	Solid Board (I)				Fire resistance permissible	Sound reduction index									
		Diamant	Min. thickness	Without insulation layer	Cavity	Min. thickness	Min. density			Minimum insulation layer thickness								
			t mm	approx. kg/m²	D mm	h mm	mm	kg/m³	– mm				40 mm		60 mm		80 mm	
									R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB		

W628B.de Installation Shaft Wall

Single metal stud frame with CW single studs, double-layer cladding

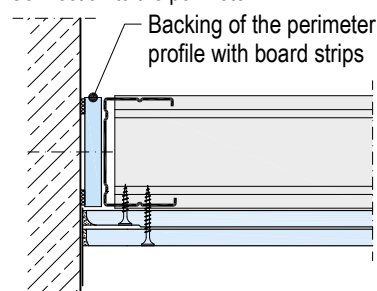
	F30	•			2x 12.5	25	75	50	Without or Mineral wool	32	30	38	36	38	36	≥ 38	≥ 36
							100	75	G plus								
							125	100									
	F60	•			2x 15	29	75	50	Without or mineral wool	34	31	39	37	40	38	43	40
							100	75	G plus								
							125	100									
	F90	•			2x 20	39	80	50	Without or mineral wool	32	30	38	36	38	36	≥ 38	≥ 36
							105	75	G plus								
							130	100									
	F90 plus	•			2x 25	47	80	50	Without or mineral wool	32	30	38	36	38	36	≥ 38	≥ 36
							105	75	G plus								
							130	100									
	F90 plus	•			2x 20	39	90	50	Without or mineral wool	35	33	43	41	44	42	≥ 44	≥ 42
							115	75	G plus								
							140	100									
	F90	•			2x 25	47	100	50	Without or mineral wool	36	33	43	41	44	42	≥ 44	≥ 42
							125	75	G plus								
							150	100									

(I) Gypsum core special impregnation

Sound reduction index values represented in *italics* are derived values from measurements on divergent constructions.

With wall heights > 3.00 m

Connection to the perimeter



plus Extension of the fire resistance Certificate of Usability

- When applied with insulation layer **G**
- Prior consultation in acc. to page 100 is recommended.

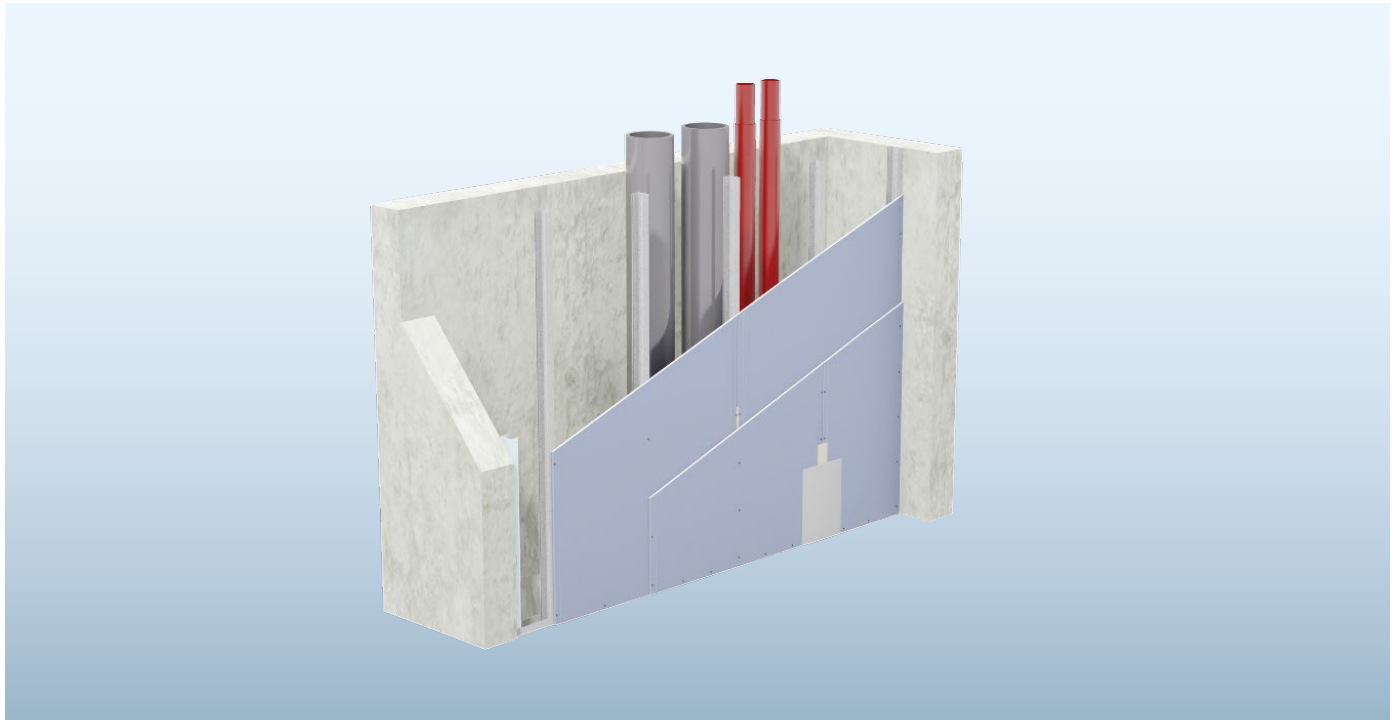
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

Wall heights

W628B.de Installation shaft wall single metal stud frame with CW single studs, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	Wall heights			Increased wall heights, double-layer cladding ^{plus}					
		Knauf Piano fire-resistant board / Diamant	Knauf Fire-Resistant Board / Diamant 12.5 mm	Solid Board	Knauf Piano fire-resistant board	Diamant	Knauf Feuer-schutzplatte fire-resistant board	Diamant	Solid Board	Solid Board
Metal gauge 0.6 mm	a mm	2x 12.5 mm m	2x 15 mm m	2x 25 mm m	2x 12.5 mm m	2x 12.5 mm m	2x 15 mm m	2x 15 mm m	2x 20 mm m	2x 25 mm m
CW 50	1000	–	–	3.00 ¹⁾	–	–	–	–	2.70	3.10
	625	2.95 ¹⁾	3.00 ¹⁾	3.00	2.95	2.65 / 3.35 ¹⁾	3.10	3.25	2.80 / 3.55 ¹⁾	4.00
	417	3.00	3.00	3.00	3.20	4.00	3.80	4.00	4.00	4.00
	312.5	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.05
CW 75	1000	–	–	3.00	–	–	–	–	3.95	4.00
	625	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.05
	417	3.00	3.00	3.00	4.00	4.40	4.15	4.65	4.55	5.00
	312.5	3.00	3.00	3.00	4.55	4.95	4.75	5.25	5.20	5.70
CW 100	1000	–	–	3.00	–	–	–	–	4.00	4.10
	625	3.00	3.00	3.00	4.50	4.95	5.20	5.20	5.00	5.40
	417	3.00	3.00	3.00	5.40	5.90	6.20	6.20	6.10	6.60
	312.5	3.00	3.00	3.00	6.15	6.65	6.95	6.95	6.90	7.45

1) only for installation zone 1

Ball impact safety

Ball impact safety is provided with spacing of studs ≤ 625 mm.



Extension of the fire resistance Certificate of Usability

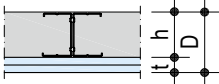
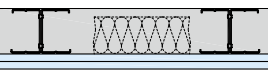
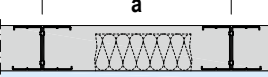
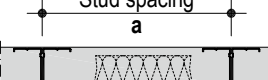
- When the enhanced wall heights are used
- Prior consultation in acc. to page 100 is recommended.

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

W629.de Single metal stud frame with CW double studs, double-layer cladding

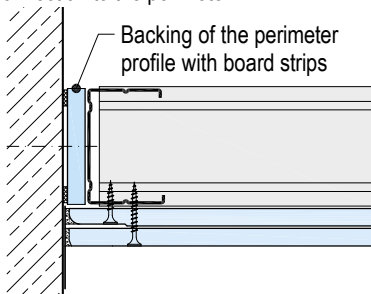
Knauf System	Fire resistance class	Cladding				Weight	Wall thickness	Knauf profile CW Z100	Insulation layer Fire resistance permissible	Sound insulation														
		Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Solid Board (I)	Diamant					Min. thickness t mm	Without insulation layer approx. kg/m²	D mm	h mm	Cav-ity	Min. thickness mm	Min. density kg/m³	Sound reduction index							
																	Minimum insulation layer thickness				– mm			
													R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB				
W629.de Installation Shaft Wall																								
Single metal stud frame with CW double studs, double-layer cladding																								
	F30	•			2x 12.5	26	75	50	Without or mineral wool G plus	32	30	38	36	38	36	≥ 38	≥ 36							
							100	75																
							125	100																
		•			2x 12.5	30	75	50	Without or mineral wool G plus	34	31	39	37	40	38	43	40							
							100	75																
							125	100																
	F60	•			2x 15	31	80	50	Without or mineral wool G plus	32	30	38	36	38	36	≥ 38	≥ 36							
							105	75																
							130	100																
		•			2x 15	36	80	50	Without or mineral wool G plus	32	30	38	36	38	36	≥ 38	≥ 36							
							105	75																
							130	100																
	F90	•			2x 20	40	90	50	Without or mineral wool G plus	35	33	43	41	44	42	≥ 44	≥ 42							
							115	75																
							140	100																
		•			2x 25	49	100	50	Without or mineral wool G plus	36	33	43	41	44	42	≥ 44	≥ 42							
							125	75																
							150	100																

(I) Gypsum core special impregnation

Sound reduction index values represented in *italics* are derived values from measurements on divergent constructions.

With wall heights > 3.00 m

Connection to the perimeter



plus Extension of the fire resistance Certificate of Usability

■ When applied with insulation layer **G**

Prior consultation in acc. to page 100 is recommended.

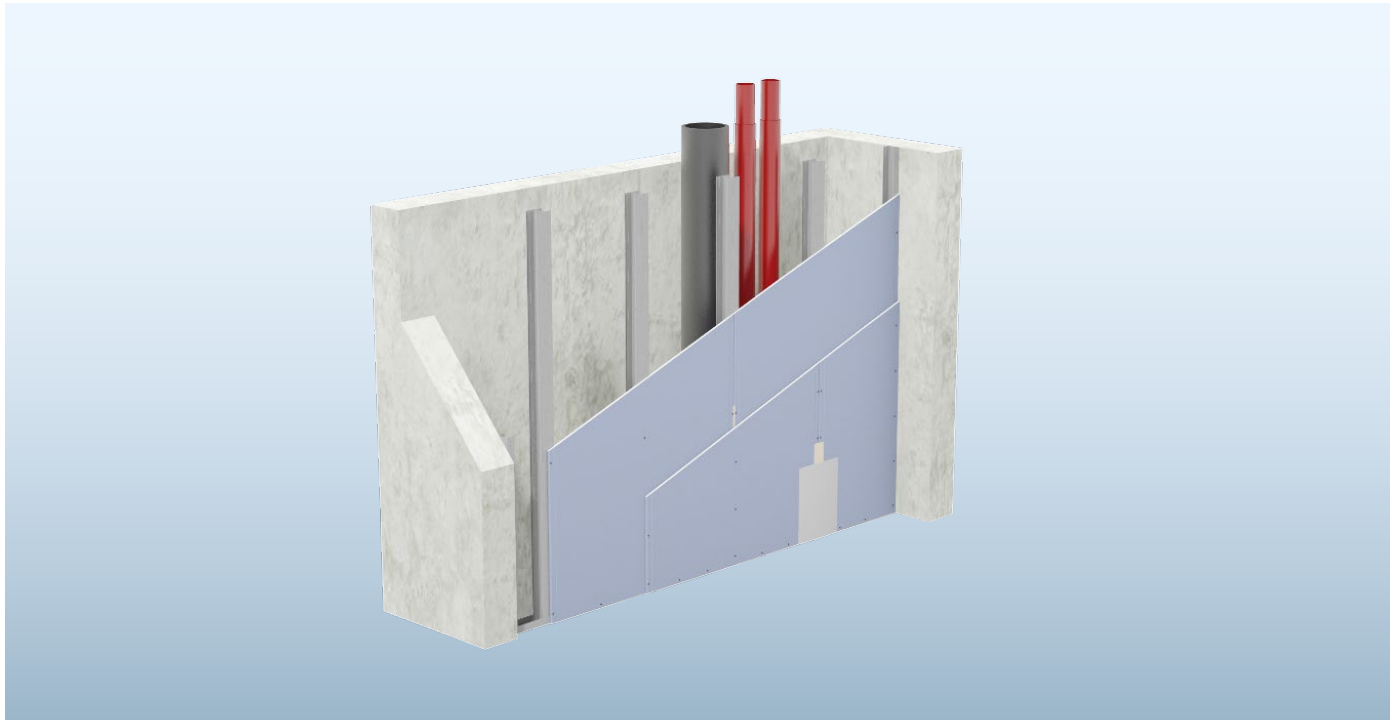
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

Wall heights

W629.de Installation shaft wall single metal stud frame with CW double studs, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	Wall heights			Increased wall heights, double-layer cladding ^{plus}					
		Knauf Piano fire-resistant board / Diamant	Knauf Fire-Resistant Board / Diamant 12.5 mm	Solid Board	Feuer-schutzplatte Knauf Piano fire-resistant board	Diamant	Knauf Feuer-schutzplatte fire-resistant board	Diamant	Solid Board	Solid Board
Metal gauge 0.6 mm		2x 12.5 mm	2x 15 mm	2x 25 mm	2x 12.5 mm	2x 12.5 mm	2x 15 mm	2x 15 mm	2x 20 mm	2x 25 mm
	a mm	m	m	m	m	m	m	m	m	m
CW 50	1000	–	–	3.00	–	–	–	–	3.95	4.00
	625	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	4.05
	312.5	3.00	3.00	3.00	4.05	4.45	4.30	4.75	4.80	5.45
CW 75	1000	–	–	3.00	–	–	–	–	4.15	4.55
	625	3.00	3.00	3.00	4.55	4.95	4.75	5.25	5.20	5.70
	312.5	3.00	3.00	3.00	6.00	6.45	6.30	6.80	6.90	7.00
CW 100	1000	–	–	3.00	–	–	–	–	5.60	6.00
	625	3.00	3.00	3.00	6.15	6.65	6.40	6.95	6.90	7.00
	312.5	3.00	3.00	3.00	7.00	7.00	7.00	7.00	7.00	7.00

Ball impact safety

Ball impact safety is provided with spacing of studs ≤ 625 mm.



Extension of the fire resistance Certificate of Usability

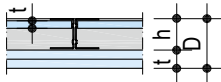
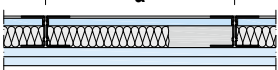
- When the enhanced wall heights are used
- Prior consultation in acc. to page 100 is recommended.

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

W635.de Single metal stud frame with UW double runners, double-layer cladding

Knauf System	Fire resistance class				Cladding		Weight	Wall thickness	Knauf profile UW Z100	Insulation layer		Sound insulation					
	Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Solid Board (I)	Diamant	Min. thickness t mm	Without insulation layer approx. kg/m²				Cavity	Min. thickness mm	Min. density kg/m³	Sound reduction index		Minimum insulation layer thickness		
												40 mm	80 mm	R _w dB	R _{w,R} dB	R _w dB	R _{w,R} dB
W635.de Installation Shaft Wall																	
Single metal stud frame with UW double runners, double-layer cladding																	
	F90	•		•	2x 15 + 12.5 intermediate	46	80	50	Mineral wool S 40 30			49	47	54	52		
							105	75									
							130	100									

(I) Gypsum core special impregnation

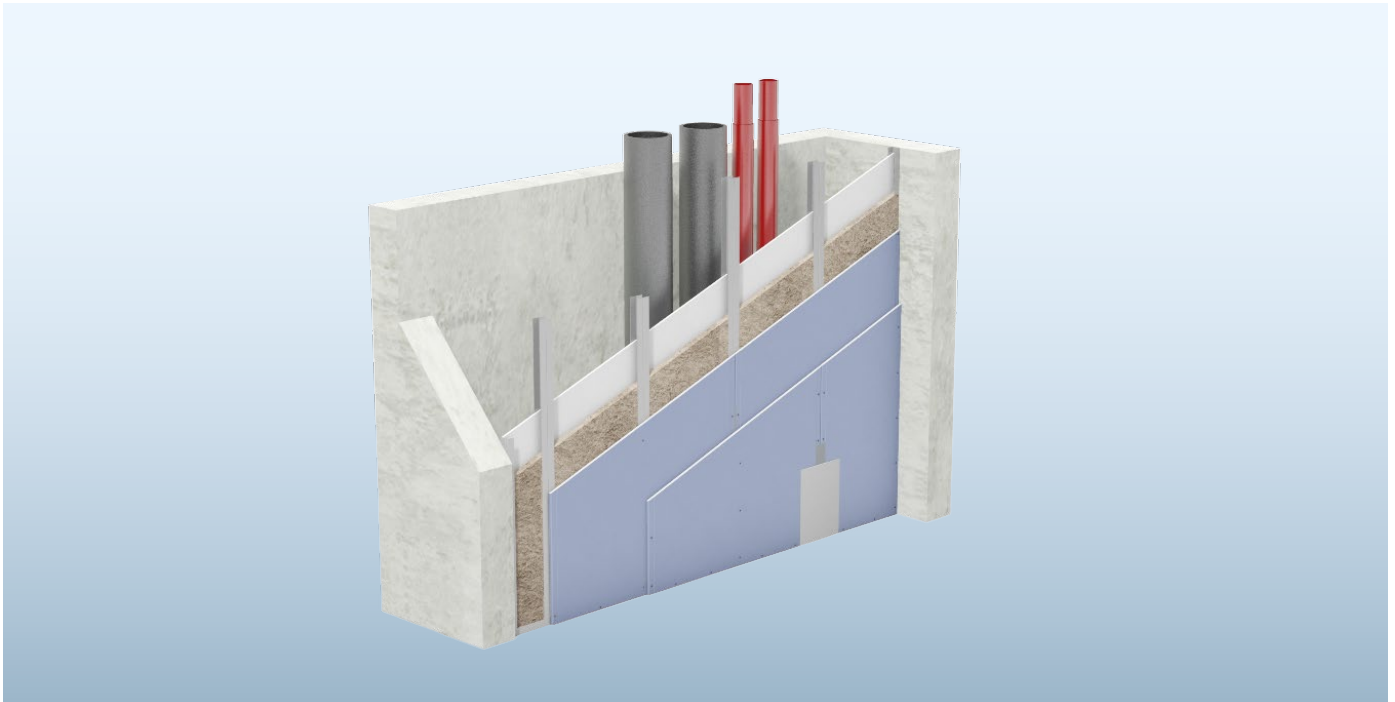
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

Wall heights

W635.de Installation Shaft Wall, single metal stud frame with UW double studs, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Stud spacing	Wall heights Diamant 2x 12.5 mm + Knauf Piano fire-resistant board	Increased wall heights plus Diamant 2x 12.5 mm + Knauf Piano fire-resistant board
Metal gauge 0.6 mm	a mm	m	m
UW 50	625	3.00	4.00
UW 75	625	3.00	4.50
UW 100	625	3.00	5.00



Extension of the fire resistance Certificate of Usability

- When the enhanced wall heights are used
Prior consultation in acc. to page 100 is recommended.

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



Water action classes W0-I and W1-I

Solid ceiling systems with gypsum boards

D112.de Board ceiling, metal grid with CD profiles 60/27

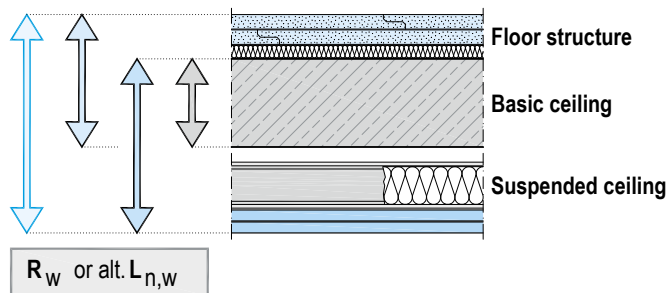
D113.de Board ceiling, metal grid with CD channels 60/27 flush

D116.de Board ceiling, metal grid with UA Profile 50/40 + CD Profile 60/27 large-span

D131.de Free-spanning ceiling

Sound insulation – Certified airborne and impact sound insulation with Knauf Board Ceilings

Test set-up



Suspended ceiling D112.de

- Furring channel CD 60/27
- Mineral wool insulation layer 30 mm
- Damping universal bracket
- Cladding

Demands on the insulation layer (e.g. from Knauf Insulation):
Mineral wool insulation layer 30 mm acc. to EN 13162,
length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

Airborne and impact sound insulation

Basic ceiling Reinforced concrete ceiling 140 mm, approx. 320 kg/m ² (standard reference floor)	Without floor				Basic ceiling + flooring construction								Flowing screed			
	R _w dB	R _{w,R} dB	L _{n,w} dB	L _{n,w,R} dB	R _w dB	R _{w,R} dB	L _{n,w} dB	L _{n,w,R} dB	R _w dB	R _{w,R} dB	L _{n,w} dB	L _{n,w,R} dB	R _w dB	R _{w,R} dB	L _{n,w} dB	L _{n,w,R} dB
Without suspended ceiling (all dimensions in mm)	53	51	80	82	58	56	57	59	62	60	49	51	65	63	41	43
Basic ceiling + suspended ceiling D112.de					Basic ceiling + flooring + subceiling											
 ■ 12.5 mm Diamant	70	68	55	57	71 ¹⁾	67 ¹⁾	44	48 ⁴⁾	74 ¹⁾	70 ¹⁾	39	43 ⁴⁾	70 ²⁾	68 ²⁾	30 ¹⁾	34 ¹⁾
 ■ 15 mm Diamant	70 ³⁾	≥ 68 ³⁾	55 ³⁾	≤ 57 ³⁾	72	70	45	47	74 ¹⁾³⁾	≥ 70 ³⁾	39 ³⁾	≤ 43 ³⁾⁴⁾	70 ²⁾	≥ 68 ³⁾	30 ¹⁾³⁾	≤ 34 ³⁾
 ■ 2x 12.5 mm Diamant	74	72	52	54	76	72 ¹⁾	39	43 ⁴⁾	80 ¹⁾	76 ¹⁾	33	37 ⁴⁾	74 ²⁾	72 ²⁾	24 ¹⁾	28 ¹⁾

1) Calculation based on the detailed procedure acc. to EN 12354

2) Values of basic ceiling and suspended ceiling without flooring

3) Values derived from cladding 12.5 mm

4) Enhanced margin of 4 dB for consideration of the test with partial screed surface.

Larger suspension heights / larger thicknesses of the basic ceiling improve sound insulation.

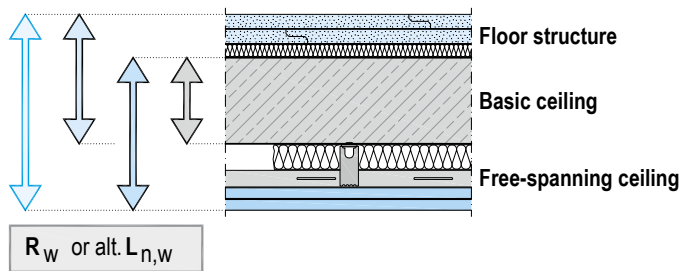
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Sound insulation – Certified airborne and impact sound insulation with Knauf Free-Spanning Ceilings

Test set-up



Free-spanning ceiling D131.de

- Furring channel 2x CW 75
- Insulation layer 60 mm (e.g. Knauf Insulation Trennwand-Dämmplatte TP 115)
- Cladding

Demands on the insulation layer (e.g. from Knauf Insulation):
Mineral wool insulation layer 60 mm acc. to EN 13162,
length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

Airborne and impact sound insulation

Basic ceiling Reinforced concrete ceiling 140 mm, approx. 320 kg/m ² (standard reference floor)	Without floor				Basic ceiling + flooring construction											
	R _w dB	R _{w,R} dB	L _{n,w} dB	L _{n,w,R} dB	Floor construction Knauf pre-fab floor screed ■ 1x 18 mm Brio WF				■ 2x 23 mm Brio ■ 20 mm Knauf Insulation Trittschall-Dämmplatte TP-GP				Flowing screed ■ 40 mm Knauf FE50 ■ 9.5 mm Knauf Wallboard ■ 25 mm mineral wool Trittschall-Dämmplatte stiffness group 10			
Without suspended ceiling (all dimensions in mm)	53	51	80	82	58	56	57	59	62	60	49	51	65	63	41	43
Basic ceiling + suspended ceiling D131.de	Basic ceiling + flooring + subceiling															
 ■ 2x CW 75 ■ 12.5 mm Diamant	69 ¹⁾	65	54 ¹⁾	58	73	71	40	43	77 ¹⁾	71	34 ¹⁾	40	69 ²⁾	65 ²⁾	25 ¹⁾	31
 ■ 2x CW 75 ■ 15 mm Diamant	69 ³⁾	≥ 65 ³⁾	54 ³⁾	≤ 58 ³⁾	73 ³⁾	71 ³⁾	41 ³⁾	43 ³⁾	77 ³⁾	≥ 71 ³⁾	34 ³⁾	40 ³⁾	69 ³⁾	≥ 65 ³⁾	25 ³⁾	31 ³⁾
 ■ 2x CW 75 ■ 2x 12.5 mm Diamant	70	68	50	52	75	73	37	39	78 ¹⁾	74	34 ¹⁾	38	70 ²⁾	68 ²⁾	25 ¹⁾	29

1) Calculation based on the detailed procedure acc. to EN 12354

2) Values of basic ceiling and suspended ceiling without flooring

4) Enhanced margin of 4 dB for consideration of the test with partial screed surface.

Larger spacings to basic ceiling / larger thicknesses of the basic ceiling improve sound insulation.

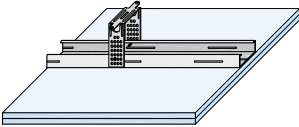
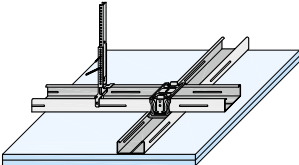
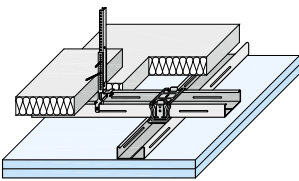
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

D112.de Metal grid with CD profiles 60/27

Without fire resistance / fire resistance solely from below and/or from above

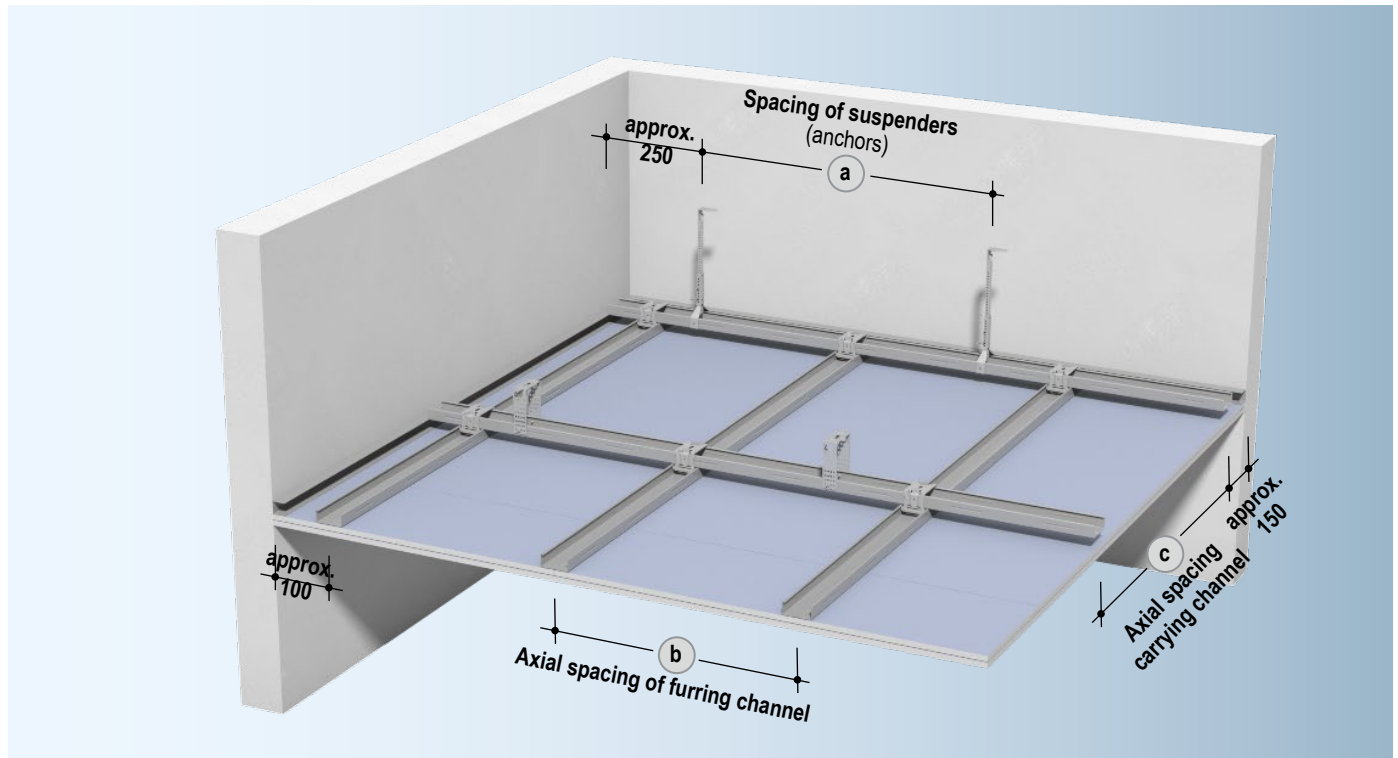
Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)						Nominal weight	Furring channel CD 60/27 Z100	Insulation layer Required for fire resistance		
	From below	From above	Knauf Wallboard (I)	Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board	Minimum thickness mm	Without insulation layer kg/m²	Maximum spacings b mm	Minimum thickness mm	Min. density kg/m³
From below No fire resistance requirements for basic ceiling/roof construction													
From above (Plenum) Raw ceiling must have same fire resistance class as suspended ceiling													
D112.de Board ceiling, metal grid with CD profiles 60/27													
 e.g. furring channel only	-	-	•						12.5	11.7	500	-	
								•	12.5	13.5			
			•						2x 12.5	21.1			
 e.g. carrying and furring channel	F30	-	•					2x 12.5	24.3	500	Without or Mineral wool G		
						•	2x 12.5	28.3	500				
					•	20	19.9	625					
	F90	-				•		2x 20	37.5	500	Without or Mineral wool G		
	-	F30		•				15	15.5	500	Mineral wool S 40 40		
						•	15	17.9	500	+			
	F30	F30	•					2x 12.5	24.3	500	Mineral wool S 40 40 150 mm wide on carrying channel		
						•	2x 12.5	28.3	500				
	F90	F90				•		2x 20	37.5	500	Mineral wool S 40 40 + Mineral wool S 40 40 150 mm wide on carrying channel		

(I) Gypsum core special impregnation

Maximum grid spacings

D112.de Board ceiling, metal grid with CD profiles 60/27

Dimensions in mm



Determination of load class

Load class kN/m ²	Nominal weight + weight of additional loads kg/m ²
Up to 0.65	60
Up to 0.50	50
Up to 0.40	40
Up to 0.30	30
Up to 0.15	20
	10

Without fire resistance/fire resistance solely from below - carrying channel and furring channel

Axial spacings carrying channel c	Suspender spacings a Load class in kN/m ²			
	Up to 0.15	Up to 0.30	Up to 0.50 ¹⁾	Up to 0.65 ¹⁾
500	1200	950	800	750
600	1150	900	750	700
700	1100	850	700	650
800	1050	800	700	—
900	1000	800	—	—
1000	950	750	—	—
1100	900	750	—	—
1200	900	—	—	—

Without fire resistance/fire resistance solely from below /
fire resistance solely (from below and) from above, furring channel only

Axial spacings furring channel b	Suspender spacings a Load class in kN/m ²				
	Up to 0.15	Up to 0.30	Up to 0.40 ¹⁾	Up to 0.50 ¹⁾	Up to 0.65 ¹⁾
500	1300	1050	950	900	850
625	1200	1000	900	850	800

Fire protection solely (from below and) from above – carrying and furring channel

Axial spacings carrying channel c	Suspender spacings a Load class in kN/m ²			
	Up to 0.30	Up to 0.40	Up to 0.50 ¹⁾	Up to 0.65 ¹⁾
500	950	850	800	700
600	900	800	700	700
700	850	750	700 ²⁾	650 ²⁾
800	800	—	—	—

1) Use suspenders of load carrying capacity class 0.40 kN

2) Only permissible for furring channel spacing **b** max. 500 mm

Notes

Customized dimensioning of the ceiling substructure is possible on request.

It is recommended that the substructure is designed to accommodate a possible additional ceiling (≤ 0.15 kN/m²).

Observe notes from page 100.

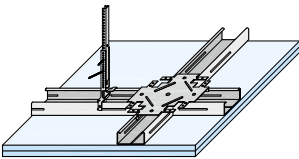
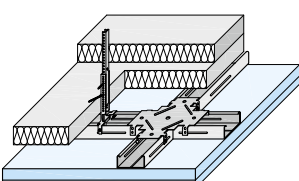
For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.



Extension of the fire resistance Certificate of Usability
Prior consultation in acc. to page 100 is recommended.

D113.de Metal grid with CD channels 60/27 flush

Without fire resistance / fire resistance solely from below and/or from above

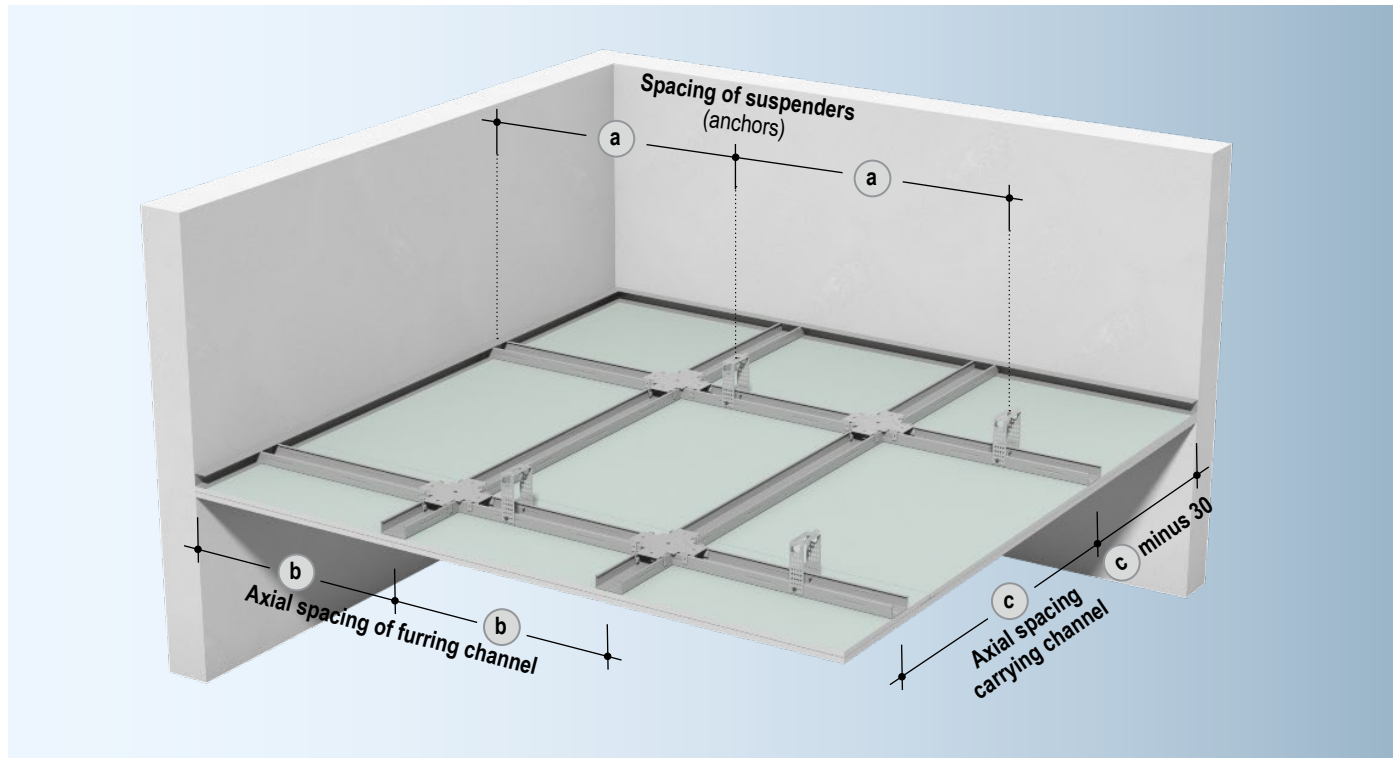
Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)							Nominal weight	Furring channel CD 60/27 Z100	Insulation layer Required for fire resistance	
			Knauf Wallboard (I)	Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board	Minimum thickness			Without insulation layer	Maximum spacings <div>b</div>
	From below	From above								mm	kg/m²		
From below No fire resistance requirements for basic ceiling/roof construction	For fire exposure												
From above (Plenum) Raw ceiling must have same fire resistance class as suspended ceiling													
D113.de Board Ceiling, metal grid with CD channels 60/27 flush													
	-	-	•						12.5	11.7	500	-	
							•	12.5	13.5				
			•					2x 12.5	21.1				
	F30	-	•					2x 12.5	24.3	500	Without or Mineral wool <div>G</div>		
						•	2x 12.5	28.3	500				
	-	F30		•				15	15.5	500	Mineral wool 40 <div>S</div>	40	
						•	15	17.9	500				
	F30	F30	•					2x 12.5	24.3	500	Without or mineral wool <div>G</div>		
						•	2x 12.5	28.3	500				
	F90	F90				•			2x 20	37.5	400	Mineral wool 2x 40 <div>S</div>	40

(I) Gypsum core special impregnation

Maximum grid spacings

D113.de Board ceiling, metal grid with CD channels 60/27 flush

Dimensions in mm



Determination of load class

Load class kN/m ²	Nominal weight + weight of additional loads kg/m ²
Up to 0.65	60
Up to 0.50	50
Up to 0.40	40
Up to 0.30	30
Up to 0.15	20
	10

Without fire resistance / fire resistance solely from below - Carrying and furring channel

Axial spacings carrying channel (c)	Suspender spacings (a)			
	Load class in kN/m ²			
	Up to 0.15	Up to 0.30	Up to 0.40 ¹⁾	Up to 0.50 ¹⁾
500	1200	950	850	800
600	1150	900	800	750
700	1100	850	750	700
800	1050	800	750	700
900	1000	800	700	—
1000	950	750	700	—
1100	900	750	—	—
1200	900	700	—	—
1250	900 (1100)	650 (1000)	—	—

Fire protection solely (from below and) from above - Carrying and furring channel

Axial spacings carrying channel (c)	Suspender spacings (a)			
	Load class in kN/m ²			
	Up to 0.30	Up to 0.40 ¹⁾	Up to 0.50 ¹⁾	Up to 0.65 ¹⁾
500	850	750	700	600
600	800	700	650	550
700	750	650	600	550
800	700	650	600	—
900	700	600	550	—
1000	650	600	550	—
1100	650	600	—	—
1200	600	550	—	—
1250	600 (850)	—	—	—

1) Use suspenders of load carrying capacity class 0.40 kN

Values in brackets () only apply when the cladding is screw fastened to the carrying channel.



Extension of the fire resistance Certificate of Usability
Prior consultation in acc. to page 100 is recommended.

Notes

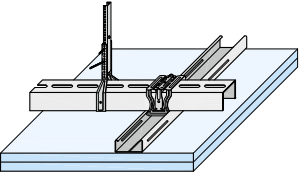
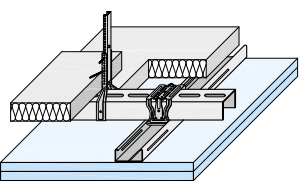
Customized dimensioning of the ceiling substructure is possible on request.

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

D116.de Metal grid with UA profiles 50/40 + CD profile 60/27 large-span

Without fire resistance / fire resistance solely from below and/or from above

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)						Rated weight	Furring channel	Insulation layer	
	From below	From above	Knauf Wallboard (I)	Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Solid Board (I)	Diamant	Drystar-Board	Minimum thickness	Without insulation layer	CD 60/27 Z100 Maximum spacings (b)	Required for fire resistance
From below No fire resistance requirements for basic ceiling/roof construction									mm	kg/m ²	mm	Minimum thickness
From above (Plenum) Raw ceiling must have same fire resistance class as suspended ceiling												Min. density
												kg/m ³
D116.de Board ceiling, metal grid with UA profiles 50/40 + CD profile 60/27 large-span												
	-	-	•						12.5	14.5		
	-	-						•	12.5	16.3	500	-
	-	-	•						2x 12.5	23.9		
	F30		•						2x 12.5	27.1	500	Without or mineral wool (G)
							•		2x 12.5	31.1	500	
						•			20	22.7	625	
	F90	-					•		2x 20	40.3	500	Without or mineral wool (G)
	-	F30		•					15	31.5	500	Mineral wool (S) 60 50 + mineral wool (S) 60 50
							•		15	20.7	500	100 mm wide on carrying channel
	F30	F30	•						2x 12.5	27.1	500	Mineral wool (S) 40 40 + mineral wool (S) 40 40
							•		2x 12.5	31.1	500	150 mm wide on carrying channel
	F90	F90				•			2x 20	40.3	500	Mineral wool (S) 40 40 + mineral wool (S) 40 40
												150 mm wide on carrying channel

(I) Gypsum core special impregnation

plus Extension of the fire resistance Certificate of Usability
Prior consultation in acc. to page 100 is recommended.

Notes

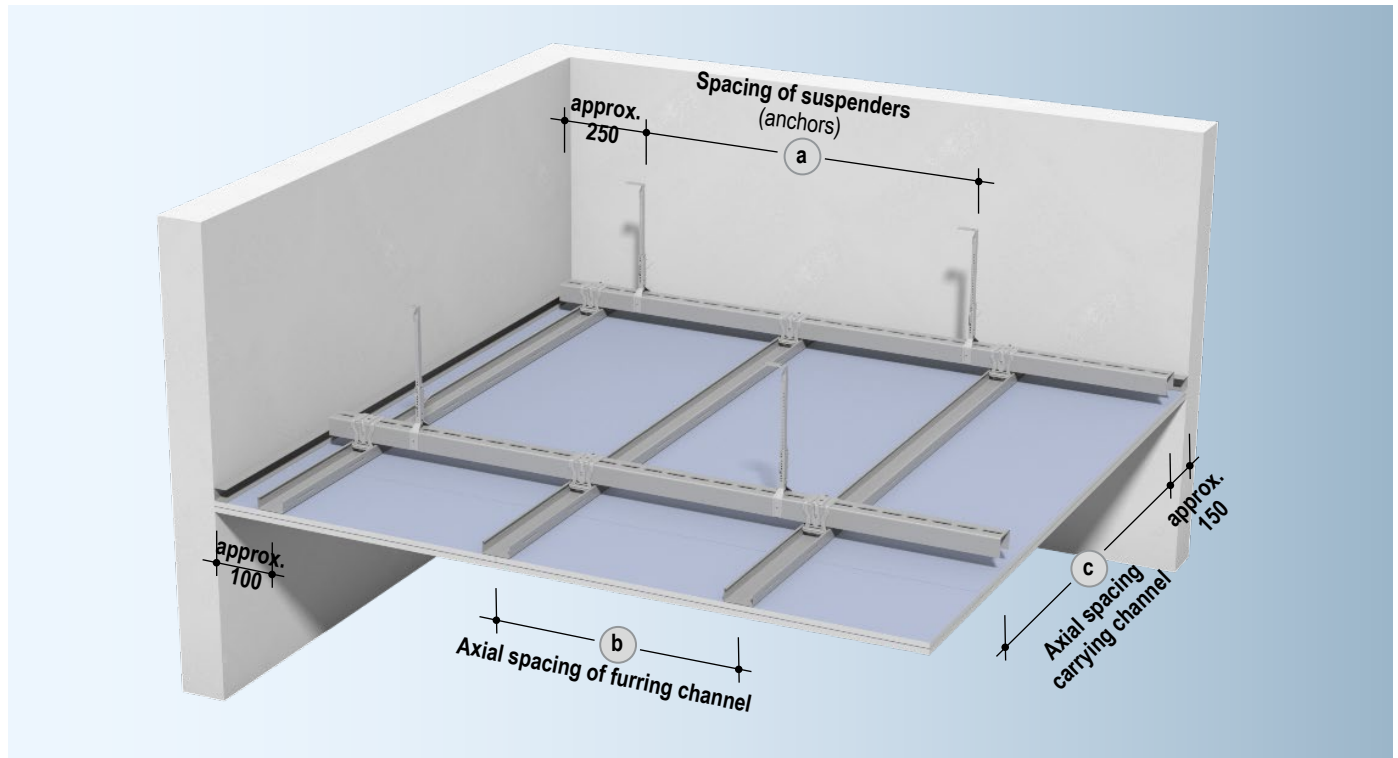
Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Maximum grid spacings

Dimensions in mm

D116.de Board ceiling, metal Grid with UA profiles 50/40 + CD profile 60/27 large-span



Determination of load class

Load class kN/m ²	Nominal weight + weight of additional loads kg/m ²
Up to 0.65	60
Up to 0.50	50
Up to 0.40	40
Up to 0.30	30
Up to 0.15	20
	10

Without fire resistance/fire resistance solely from below, carrying and furring channel

Axial spacings carrying channel (c)	Suspender spacings (a)			
	Load class in kN/m ²			
	Up to 0.15	Up to 0.30	Up to 0.50	Up to 0.65
Nonius stirrup 0.40 kN				
500	2600	2050 ¹⁾	1600	1200
700	2300	1850 ¹⁾	1100	850
800	2200	1650	1000	–
900	2150	1450	–	–
1000	2050	1300	–	–
1100	2000	1200	–	–
1200	1950	–	–	–
1300	1900	–	–	–
1500	1750	–	–	–

Fire protection solely (from below and) from above, carrying and furring channel

Axial spacings carrying channel (c)	Suspender spacings (a)			
	Load class in kN/m ²			
	Up to 0.30	Up to 0.40	Up to 0.50	Up to 0.65
Nonius stirrup 0.40 kN				
500	1150	1000	950	850
700	1000	900	850	750
800	950	850	800	–
900	900	800	–	–
1000	900 ³⁾	–	–	–
Threaded rod M8				
500	1700	1500	1400	1300
700	1500	1350	1250	1100 ²⁾
800	1400	1300	1200	–
900	1400	1250 ²⁾	–	–
1000	1300 ²⁾	1200 ²⁾	–	–

1) With fire resistance solely from below: Spacing of suspender (a) max. 1700 mm

2) Only permissible for furring channel spacing (b) max. 500 mm

Notes

Customized dimensioning of the ceiling substructure is possible on request.

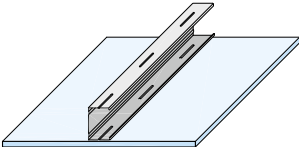
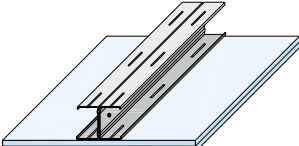
It is recommended that the substructure is designed to accommodate a possible additional ceiling (≤ 0.15 kN/m²).

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

plus Extension of the fire resistance Certificate of Usability
Prior consultation in acc. to page 100 is recommended.

Wall height without fire protection

	Fire resistance class		Cladding (lateral application)						Furring channel CW/UA profile Z100		Insulation layer Required for fire resistance	
	For fire exposure		Knauf Wallboard (I)	Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Diamant	Drystar-Board	Minimum thickness	Maximum spacings <div>b</div>		Minimum thickness	Min. density
	From below	From above							Single profile	double stud		
D131.de Free-Spanning Ceiling												
 <p>e.g. CW single profile</p>	-	-	•					12.5	500	500	-	
						•		12.5	-	500		
							•	12.5	500	500		
						•		15	-	500		
						•		2x 12.5	-	500		
 <p>e.g. CW double profile</p>												

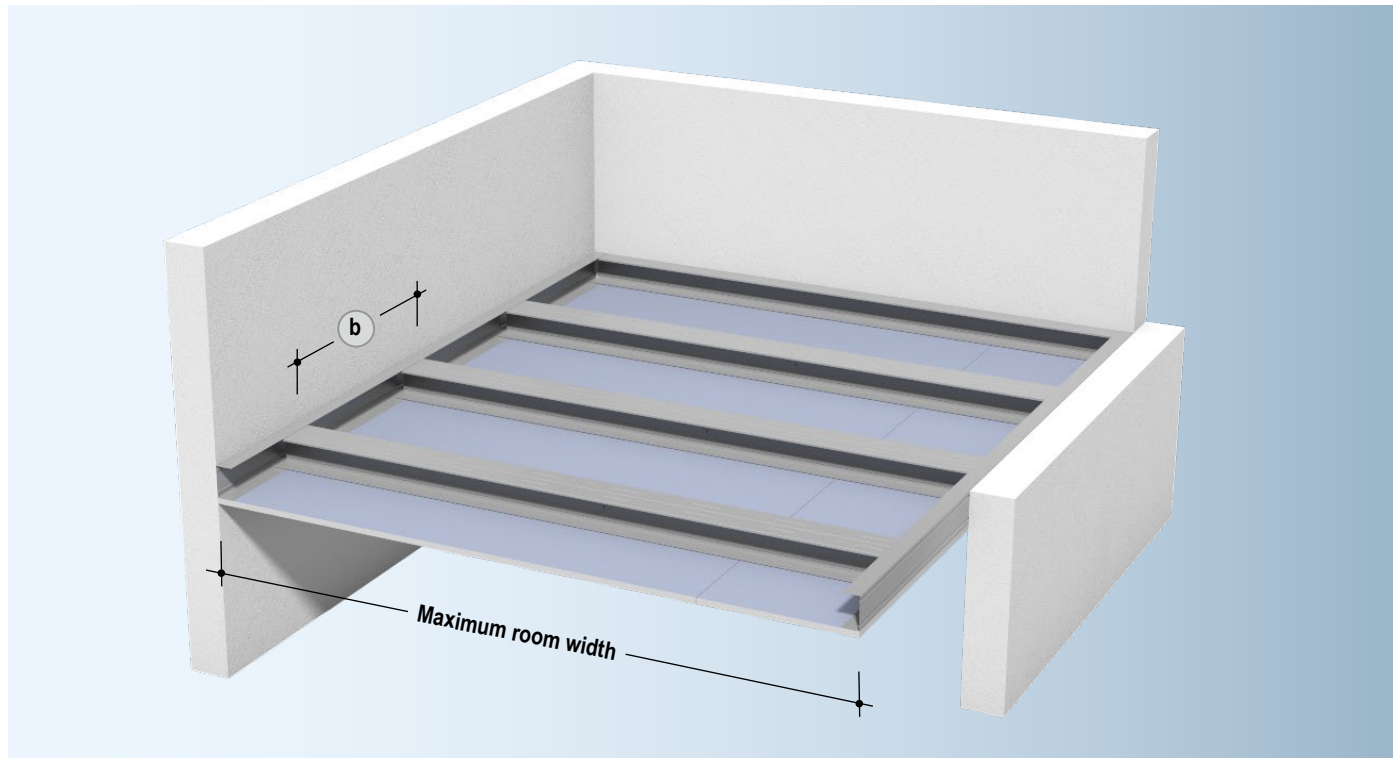
(I) Gypsum core special impregnation

Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

Maximum room widths
D131.de Free-spanning ceiling



Without fire resistance, metal grid, free-spanning, single profile

Knauf profiles	Maximum room width ¹⁾	
	Knauf Wallboard 12.5 mm m	Drystar-Board 12.5 mm m
Knauf CW single profile Metal gauge 0.6 mm		
CW 50	2.50	2.45
CW 75	3.15	3.05
CW 100	3.65	3.55
CW 125	4.15	4.05
CW 150	4.60	4.45
Knauf UA single profile Metal gauge 2.0 mm		
UA 50	3.00	2.90
UA 75	3.70	3.60
UA 100	4.35	4.25
UA 125	4.95	4.85
UA 150	5.45	5.35

Without fire resistance, metal grid, free-spanning, double profile

Knauf profiles	Maximum room width ¹⁾				
	Knauf Wallboard 12.5 mm m	Diamant 12.5 mm m	15 mm m	2x 12.5 mm m	Drystar-Board 12.5 mm m
Knauf CW double stud profile Metal gauge 0.6 mm					
2x CW 50	2.90	2.75	2.65	2.40	2.80
2x CW 75	3.60	3.45	3.35	3.05	3.50
2x CW 100	4.25	4.05	3.90	3.55	4.10
2x CW 125	4.80	4.55	4.40	4.00	4.65
2x CW 150	5.30	5.05	4.90	4.45	5.15
Knauf UA double stud profile Metal gauge 2.0 mm					
2x UA 50	3.35	3.25	3.15	2.90	3.30
2x UA 75	4.15	4.00	3.90	3.60	4.05
2x UA 100	4.85	4.70	4.60	4.25 ²⁾	4.75
2x UA 125	5.45	5.30	5.15 ²⁾	4.80 ²⁾	5.35
2x UA 150	6.00 ²⁾	5.85 ²⁾	5.70 ²⁾	5.35 ³⁾	5.90 ²⁾

1) Max. room widths: Including additional loads ($0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$) for sound insulation layers or fixing loads

2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:
 $\geq 18 \text{ mm}$ Knauf Boards / $\geq 15 \text{ mm}$ Diamant

3) Fixing plate with flanking Metal Stud Partitions on the side of the supporting connection necessary.
 Max. perimeter runner fastening spacing $\leq 312.5 \text{ mm}$.

Notes

Free-spanning ceiling profiles may not be joined or extended.
 (Larger room widths using centre suspension possible).

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

D131.de Fire protection F30 solely from below

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)					Furring channel CW/UA double profile Z100	Insulation layer Required for fire resistance			
	From below	From above	Knauf Wallboard (I)	Knauf Plano fire-resistant board (I)	Knauf fire-resistant board (I)	Diamant	Drystar-Board		Minimum thickness	Maximum spacings <div>b</div>	Minimum thickness	Min. density
From below No fire resistance requirements for basic ceiling/roof construction												
D131.de Free-spanning ceiling												
	F30	-		•			18	625	mineral wool 40	<div>G</div> <div>-</div>		
					•		18	625				
			•				2x 12.5	500	Without or mineral wool	<div>G</div>		
					•		Solid Board (I) 2x 12.5	500				

(I) Gypsum core special impregnation

Permissible wall connections

Connection	Solid construction (e.g. concrete, reinforced concrete or masonry) Fire resistance class	Lightweight partition (metal stud partitions) Fire resistance class
Direct		
Load-bearing	≥ F30	≥ F30
Constructional		
Shadow gap		
Load-bearing	≥ F30	≥ F30
Constructional		



Extension of the fire resistance Certificate of Usability

- Due to F30 configuration solely from below
Prior consultation in acc. to page 100 is recommended.

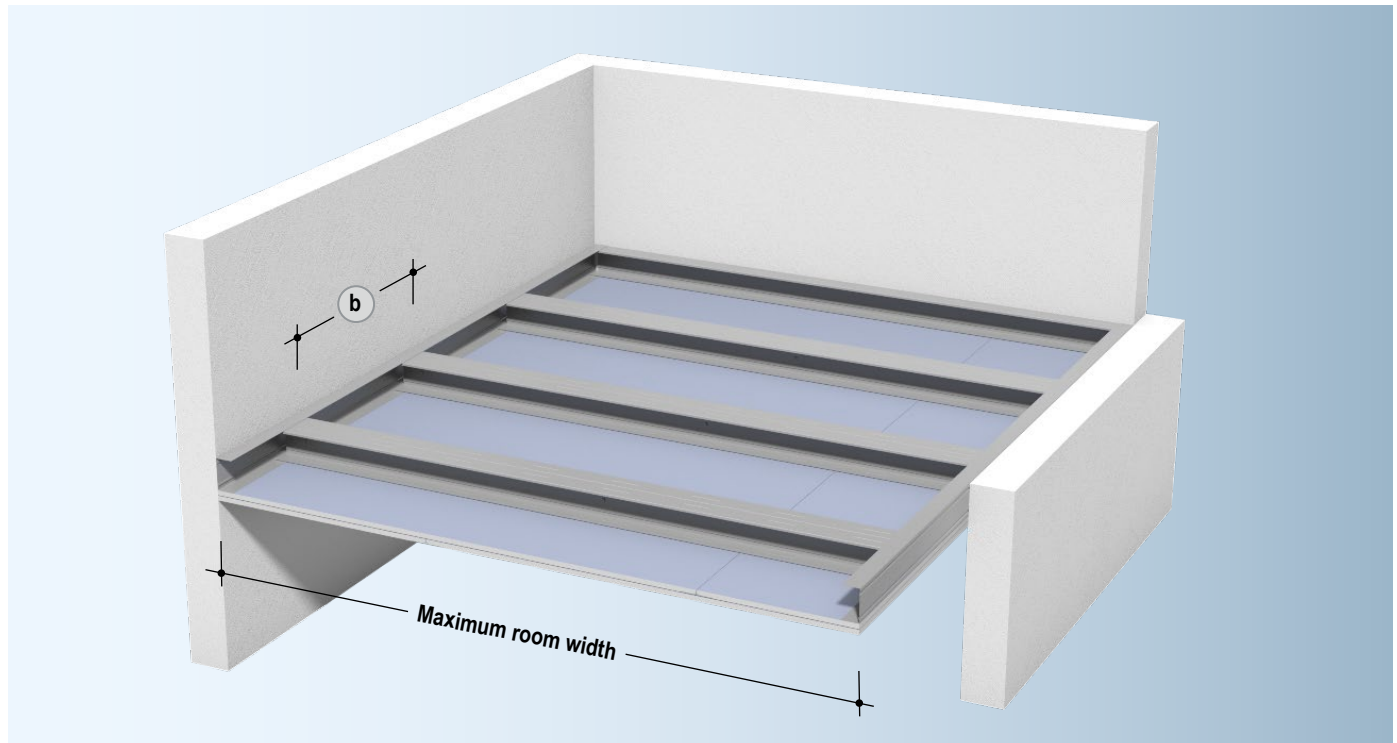
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

Maximum room widths

D131.de Free-spanning ceiling



F30 solely from below Metal grid – free-spanning

Knauf profiles	Maximum room width ¹⁾			
	Knauf Piano fire-resistant board 2x 12.5 mm m	Knauf Feuer-schutzplatte fire-resistant board 18 mm m	Diamant 18 mm m 2x 12.5 mm m	
Knauf CW double stud profile Metal gauge 0.6 mm				
2x CW 50	2.50	2.55	2.45	2.40
2x CW 75	3.15	3.15	3.05	3.05
2x CW 100	3.65	3.70	3.60	3.55
2x CW 125	4.15	4.20	4.10	4.00
2x CW 150	4.60	4.65	4.50	4.45
Knauf UA double stud profile Metal gauge 2.0 mm				
2x UA 50	3.00	3.00	2.95	2.90
2x UA 75	3.70	3.75	3.65	3.60
2x UA 100	4.35 ²⁾	4.40	4.30	4.25 ²⁾
2x UA 125	4.95 ²⁾	5.00	4.85 ²⁾	4.80 ²⁾
2x UA 150	5.45 ²⁾	5.50 ²⁾	5.40 ²⁾	5.35 ²⁾

1) Max. room widths: Including additional loads ($0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$) for insulation layers or fixing loads required for fire protection and/or sound insulation

2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:
≥ 18 mm Knauf Boards / ≥ 15 mm Diamant



Extension of the fire resistance Certificate of Usability

- Due to F30 configuration solely from below
Prior consultation in acc. to page 100 is recommended.

Notes

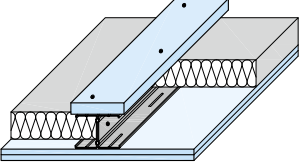
Free-spanning ceiling profiles may not be joined or extended.
(Larger room widths using centre suspension possible).

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

D13.de Knauf free-spanning ceilings, sole fire resistance

D131.de Fire protection F30 solely from below and from above (plenum)

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)					Furring channel CW/UA double profile Z100	Insulation layer Required for fire resistance	
	From below	From above	Knauf Wallboard (I)	Knauf Plano fire-resistant board (I)	Knauf fire-resistant board (I)	Diamant	Drystar-Board		Minimum thickness	Min. density
From below No fire resistance requirements for basic ceiling/roof construction From above (Plenum) Raw ceiling must have same fire resistance class as suspended ceiling								Maximum spacings b		
							mm	mm	mm	kg/m³
D131.de Free-spanning ceiling										
Covering strips 25 mm Solid Board				•			18	625		
	F30	F30		•			18	625	Mineral wool S 60 30 Alternative Mineral wool S 40 40 plus	
				•			18	625		
			•				2x 12.5 plus	500		
				•			2x 12.5 plus	500		

(I) Gypsum core special impregnation

Permissible wall connections

Connection	Solid construction (e.g. concrete, reinforced concrete or masonry) Fire resistance class	Lightweight partition (metal stud partitions) Fire resistance class
Direct		
Load-bearing	≥ F30	plus ≥ F30
Constructional		≥ F30
Shadow gap		
Load-bearing	≥ F30	plus ≥ F30
Constructional	plus ≥ F30	

plus Extension of the fire resistance Certificate of Usability

- For cladding with 2x 12.5 mm
 - Connection to lightweight partition
 - Connection to walls with shadow gap
 - When using mineral wool **S** thickness 40 mm, density 40 kg/m³
- Prior consultation in acc. to page 100 is recommended.

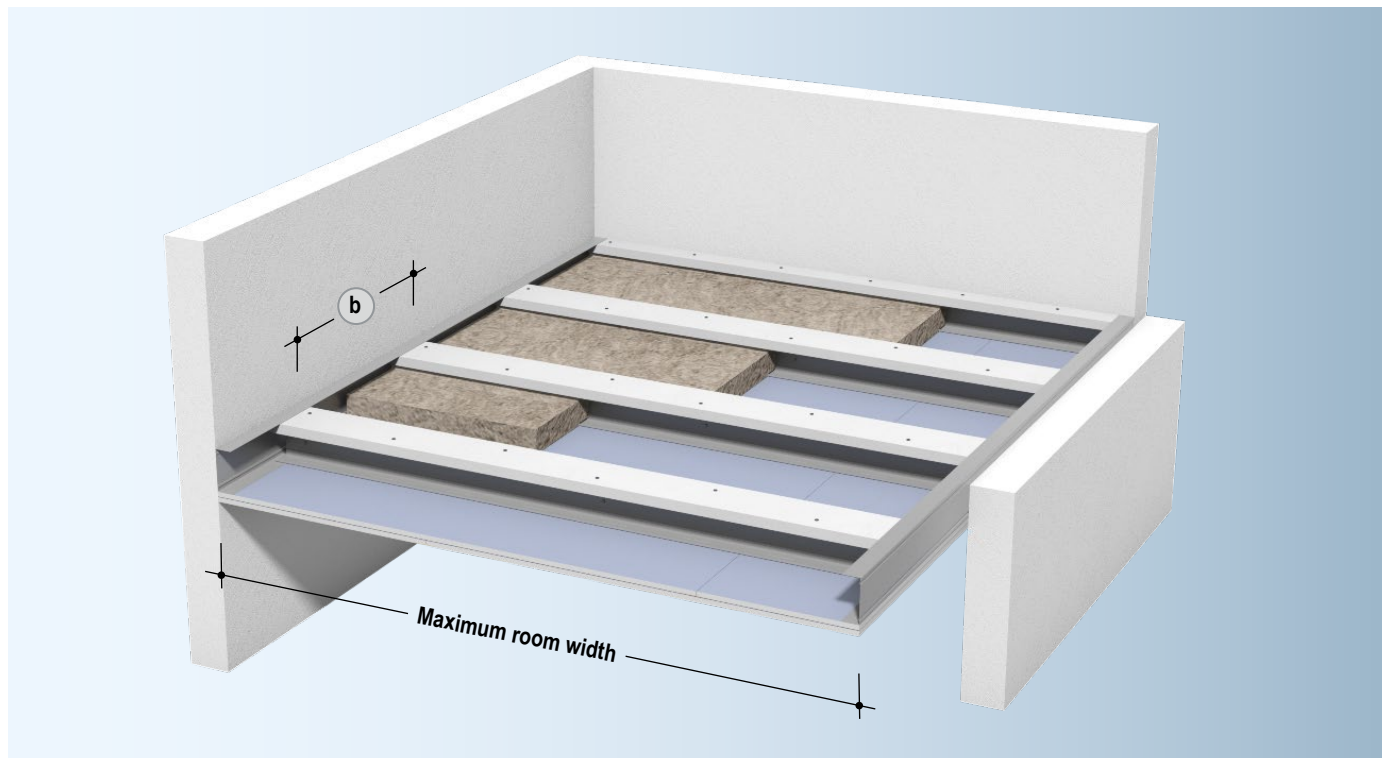
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

Maximum room widths

D131.de Free-spanning ceiling



F30 solely from below and from above, metal grid, free-spanning

Knauf profiles	Maximum room width ¹⁾					
	Knauf Piano fire-resistant board 2x 12.5 mm m plus	Knauf Feuerschutzplatte fire-resistant board 18 mm m	18 mm m plus	Diamant 18 mm m	18 mm m plus	2x12.5 mm m plus
Knauf CW double profile Metal gauge 0.6 mm						
2x CW 50	2.30	–	2.35	–	2.20	2.15
2x CW 75	2.90	3.00	3.00	2.80	2.80	2.75
2x CW 100	3.45	3.00	3.50	3.00	3.35	3.25
2x CW 125	3.95 plus	3.00	4.05	3.00	3.85	3.75
plus Knauf UA double profile Metal gauge 2.0 mm						
2x UA 50	2.90	–	2.90	–	2.85	2.80
2x UA 75	3.55	–	3.60	–	3.50	3.50
2x UA 100	4.20 ²⁾	–	4.25	–	4.15	4.10 ²⁾
2x UA 125	4.80 ²⁾	–	4.80 ²⁾	–	4.70 ²⁾	4.65 ³⁾

1) Max. room widths: Including additional loads ($0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$) for insulation layers or fixing loads required for fire protection and/or sound insulation

2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:
 $\geq 18 \text{ mm}$ Knauf Boards / $\geq 15 \text{ mm}$ Diamant

3) Fixing plate with flanking Metal Stud Partitions on the side of the supporting connection necessary.
 Max. perimeter runner fastening spacing $\leq 312.5 \text{ mm}$.



Extension of the fire resistance Certificate of Usability

- When the extended maximum room widths are used
 - With cladding 2x 12.5 mm
 - When UA profiles are used
- Prior consultation in acc. to page 100 is recommended.

Notes

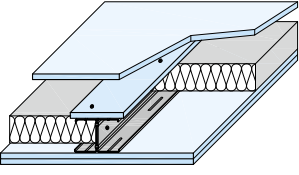
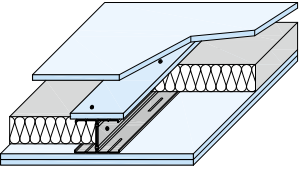
Free-spanning ceiling profiles may not be joined or extended.
 (Larger room widths using centre suspension possible).

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

D13.de Knauf free-spanning ceilings, sole fire resistance

D131.de Fire protection F60 solely from below and from above (plenum)

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)					Furring channel CW/UA double profile Z100	Insulation layer Required for fire resistance	
	From below	From above	Knauf Wallboard (I)	Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Diamant	Drystar-Board		Minimum thickness	Min. density
From below No fire resistance requirements for basic ceiling/roof construction From above (Plenum) Raw ceiling must have same fire resistance class as suspended ceiling								Maximum spacings b		
							mm	mm	mm	kg/m³
D131.de Free-spanning ceiling										
Covering strips 2x 12.5 mm Feuerschutzplatte Knauf Piano fire-resistant board 	F60	F60	•				2x 12.5 + 12.5 Additional board layer (cover board)	500	Mineral wool 50	S 50
Covering strips 12.5 mm Diamant 	F60	F60				•	2x 12.5 + 12.5 Additional board layer (cover board)	500	Mineral wool 50	S 50

(I) Gypsum core special impregnation

Permissible wall connections

Connection	Solid construction (e.g. concrete, reinforced concrete or masonry) Fire resistance class	Lightweight partition (metal stud partitions) Fire resistance class
Direct		
Load-bearing	≥ F60	plus ≥ F60
Constructional		
Shadow gap		
Load-bearing	≥ F60	plus ≥ F60
Constructional		



Extension of the fire resistance Certificate of Usability

- Connection to lightweight partition
- Prior consultation in acc. to page 100 is recommended.

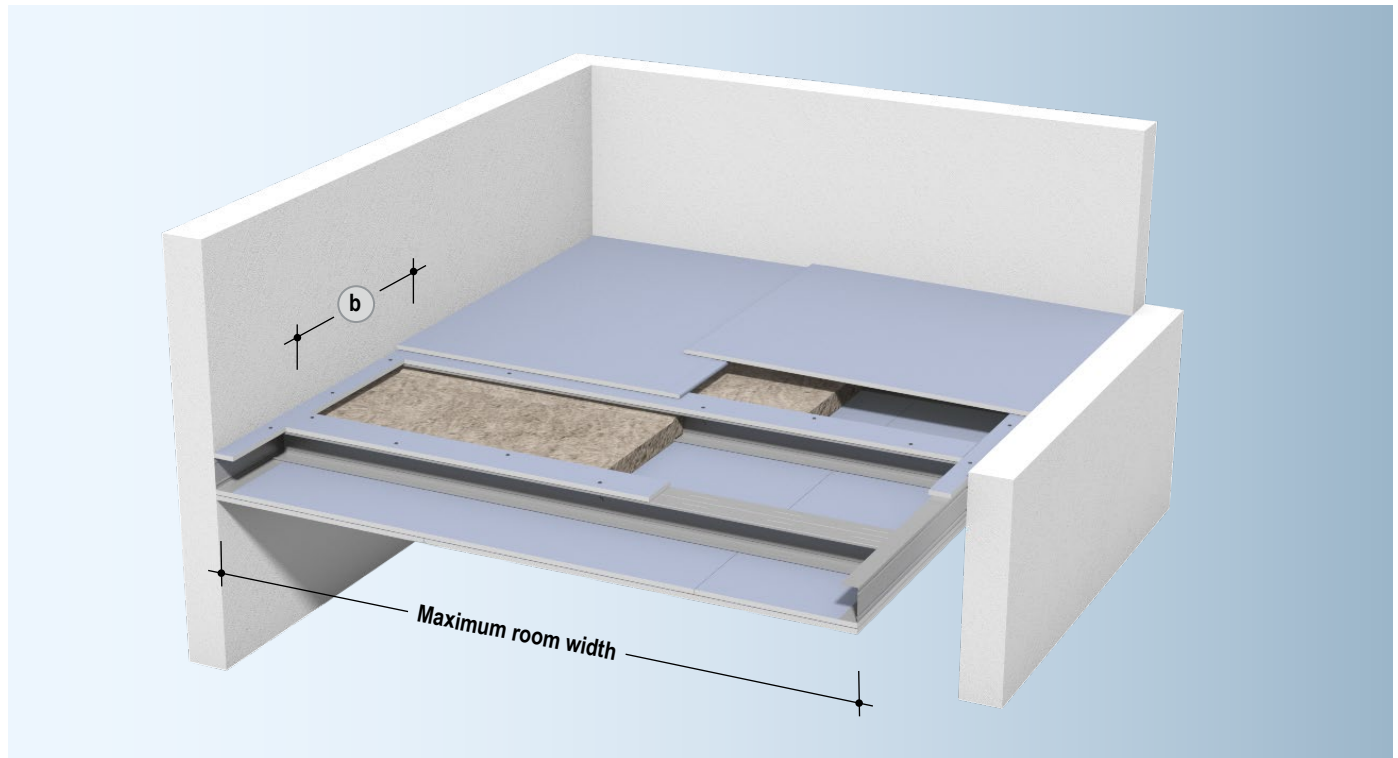
Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

Maximum room widths

D131.de Free-spanning ceiling



F60 solely from below and from above, metal grid, free-spanning

Knauf profiles	Maximum room width ¹⁾	
	Knauf Piano fire-resistant board 2x 12.5 mm m	Diamant 2x 12.5 mm m
Knauf CW double profile Metal gauge 0.6 mm		
2x CW 50	2.25	2.20
2x CW 75	2.85	2.75
2x CW 100	3.35	3.20 ²⁾
2x CW 125	3.80 ²⁾	3.65 ²⁾
2x CW 150	4.20 ²⁾	4.05 ²⁾
plus Knauf UA double profile Metal gauge 2.0 mm		
2x UA 50	2.75	2.65
2x UA 75	3.40 ²⁾	3.30 ²⁾
2x UA 100	4.05 ²⁾	3.90 ³⁾
2x UA 125	4.60 ³⁾	4.45 ³⁾
2x UA 150	5.10 ³⁾	4.95 ³⁾

- 1) Max. room widths: including additional loads ($0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$) for insulation layers or fixing loads required for fire protection and/or sound insulation
- 2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:
 $\geq 18 \text{ mm}$ Knauf Boards /
 $\geq 15 \text{ mm}$ Diamant
- 3) Fixing plate with flanking Metal Stud Partitions on the side of the supporting connection necessary.
 Max. perimeter runner fastening spacing $\leq 312.5 \text{ mm}$.



Extension of the fire resistance Certificate of Usability

- When used with double stud profiles CW 50 / 75 / 100 / 125
 - When UA profiles are used
- Prior consultation in acc. to page 100 is recommended.

Notes

Free-spanning ceiling profiles may not be joined or extended. (Larger room widths using centre suspension possible).

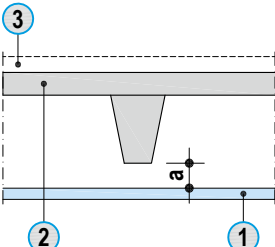
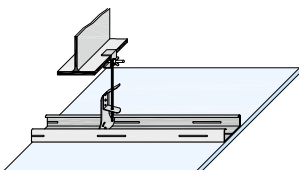
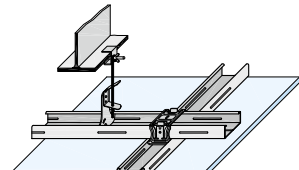
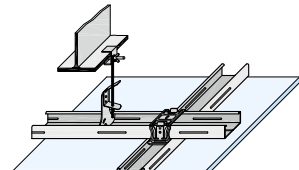
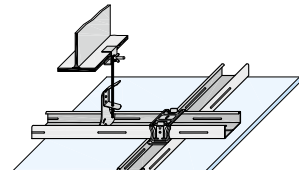
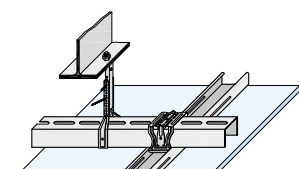
Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

D112.de Metal grid with CD profiles 60/27 / D116.de Metal grid with UA profiles 50/40 + CD profile 60/27

Fire resistance F30 in conjunction with basic ceilings of types I to III

(Specifications apply for basic ceiling types I to III)

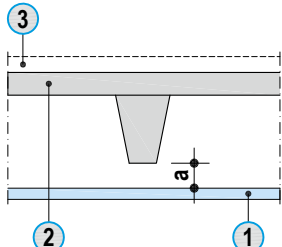
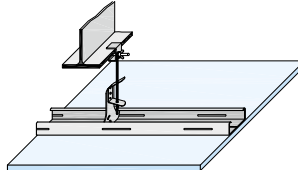
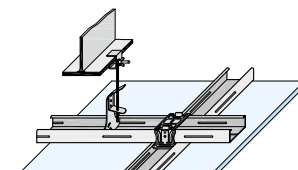
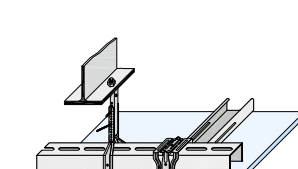
See page 80		Fire resistance class		1 Ceiling lining/suspended ceiling											
		Basic ceiling type acc. to DIN 4102-4		Cladding (lateral application)				Nominal weight		Furring channel Z100	Insulation layer		Minimum suspension height		
Fire resistance From below and from above 1 + 2 + possibly 3				Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (II)	Solid Board (I)	Diamant	mm	Without insulation layer	Maximum Axial spacings	In the plenum	Basic ceiling lower edge upper edge cladding a			
		I	II	III						D112 .de	D116 .de	mm	mm	kg/m³	mm
D112.de / D116.de Board ceilings, metal grid with CD profiles 60/27 / UA profiles 50/40 with CD profile 60/27															
		F30			•		15	15.5	18.3	500	Permissible	G	40		
						•	15	17.9	20.7		Permissible	G	40		
						•	20	19.9	22.7		Not permissible		15		
D112.de Furring channel/Hat-shaped channel or 		F30			•		12.5	13.3	16.1	500	Not permissible		40		
						•	12.5	15.3	18.1		Not permissible		40		
					•		15	15.5	18.3		G		40		
		F30				•	15	17.9	20.7	500	G		40		
						•	20	19.9	22.7		Not permissible		15		
					•		12.5	13.3	16.1		Not permissible		40		
D112.de Carrying channel and furring channel CD or 		F30				•	12.5	15.3	18.1	500	Not permissible		40		
					•		12.5	13.3	16.1		G		80		
						•	12.5	15.3	18.1		G		80		
		F30				•	15	15.5	18.3	500	G		40		
						•	15	17.9	20.7		G		40		
					•		20	19.9	22.7		Not permissible		15		
D116.de Carrying and furring channel UA+CD						•	20	19.9	22.7						

(I) Gypsum core special impregnation

D112.de Metal grid with CD profiles 60/27 / D116.de Metal grid with UA profiles 50/40 + CD profile 60/27

Fire resistance F60 and F90 in conjunction with basic ceilings of types I to III

(Specifications apply for basic ceiling types I to III)

See page 80		Fire resistance class		1 Ceiling lining/suspended ceiling											
				Cladding (lateral application)				Nominal weight		Furring channel Z100	Insulation layer In the plenum		Minimum suspension height		
				Knauf Piano fire-resistant board (I)	Knauf fire-resistant board (I)	Solid Board (I)	Diamant	Minimum thickness	Without insulation layer		Maximum Axial spacings	Minimum thickness	Minimum Density	Basic ceiling lower edge upper edge cladding a	
Fire resistance From below and from above 1 + 2 + possibly 3		Basic ceiling type acc. to DIN 4102-4		I	II	III	mm	kg/m²	D112 .de	D116 .de	mm	mm	kg/m³	mm	
D112.de / D116.de Board ceilings, metal grid with CD profiles 60/27 / UA profiles 50/40 with CD profile 60/27															
		F60			•	2x 15	28.7	31.5	500	Not permissible		15			
D112.de Furring channel/Hat-shaped channel					•	2x 15	33.5	36.3		Not permissible		15			
		F60			•	2x 15	28.7	31.5	500	Not permissible		15			
•	2x 15				33.5	36.3	Not permissible			15					
or		F60			•	12.5	13.6	16.4	400	Not permissible		80			
					•	12.5	15.6	18.4		Not permissible		80			
					•	15	15.8	18.6		Not permissible		40			
D112.de Carrying channel and furring channel CD					•	15	18.2	21.0		Not permissible		40			
					•	15	15.8	18.6		S		80			
or					•	15	18.2	21.0		S		80			
					•	20	20.2	23.0		Not permissible		15			
					F90			•		15	15.5	18.3	500	Not permissible	
		•	15	17.9				20.7	Not permissible		80				

(I) Gypsum core special impregnation



Extension of the fire resistance Certificate of Usability
Prior consultation in acc. to page 100 is recommended.

Notes

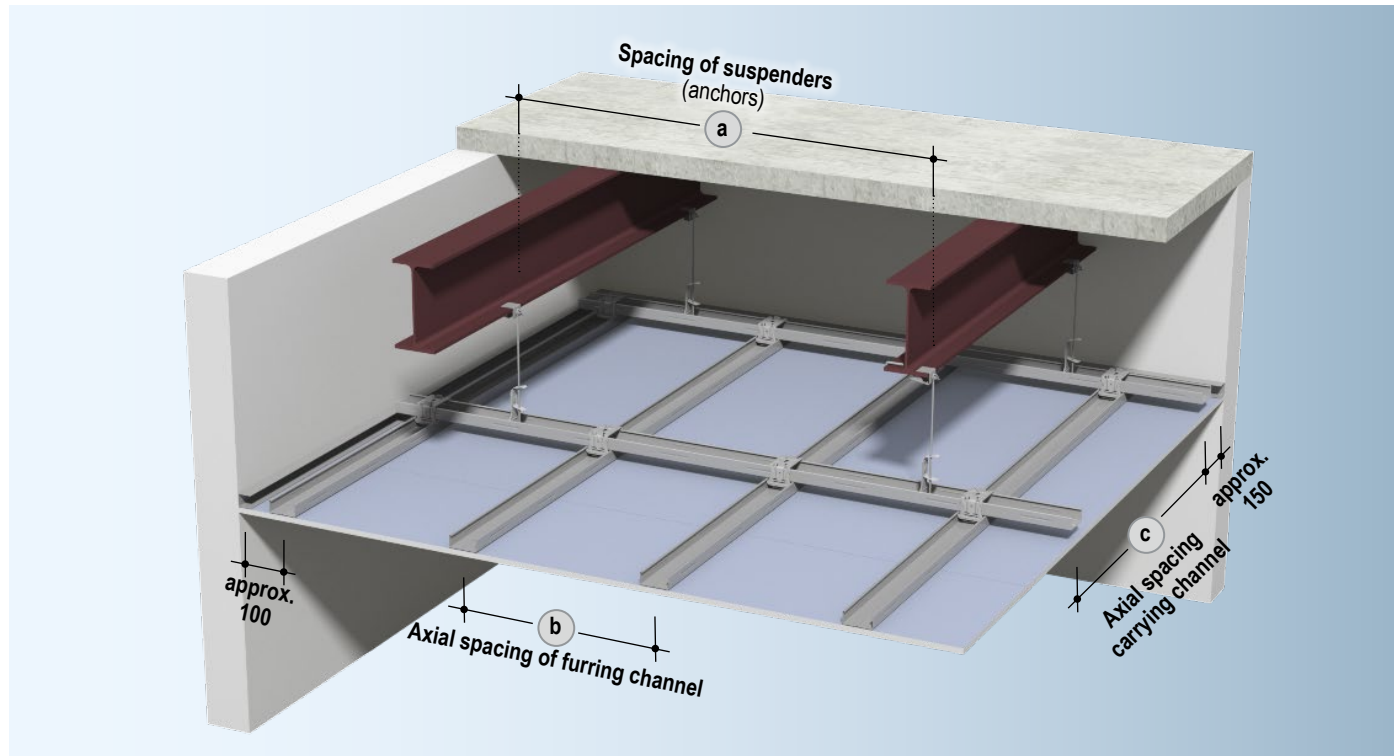
Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Maximum grid spacings

D112.de Board ceiling, metal grid with CD profiles 60/27

Dimensions in mm



Determination of load class

Load class kN/m ²	Nominal weight + weight of additional loads kg/m ²
Up to 0.65	60
Up to 0.50	50
Up to 0.40	40
Up to 0.30	30
Up to 0.15	20
	10

Fire resistance in conjunction with basic ceilings of types I to III Carrying and furring channel

Axial spacings carrying channel c	Suspender spacings a Load class in kN/m ²			
	Up to 0.15	Up to 0.30	Up to 0.40 ¹⁾	Up to 0.50 ¹⁾
500	1200	950	850	800
600	1100	900	800	700
700	1000	850	750	700
800	1000	800	–	–
900	1000	–	–	–

Fire resistance in conjunction with basic ceilings of types I to III Furring/hat-shaped channel only

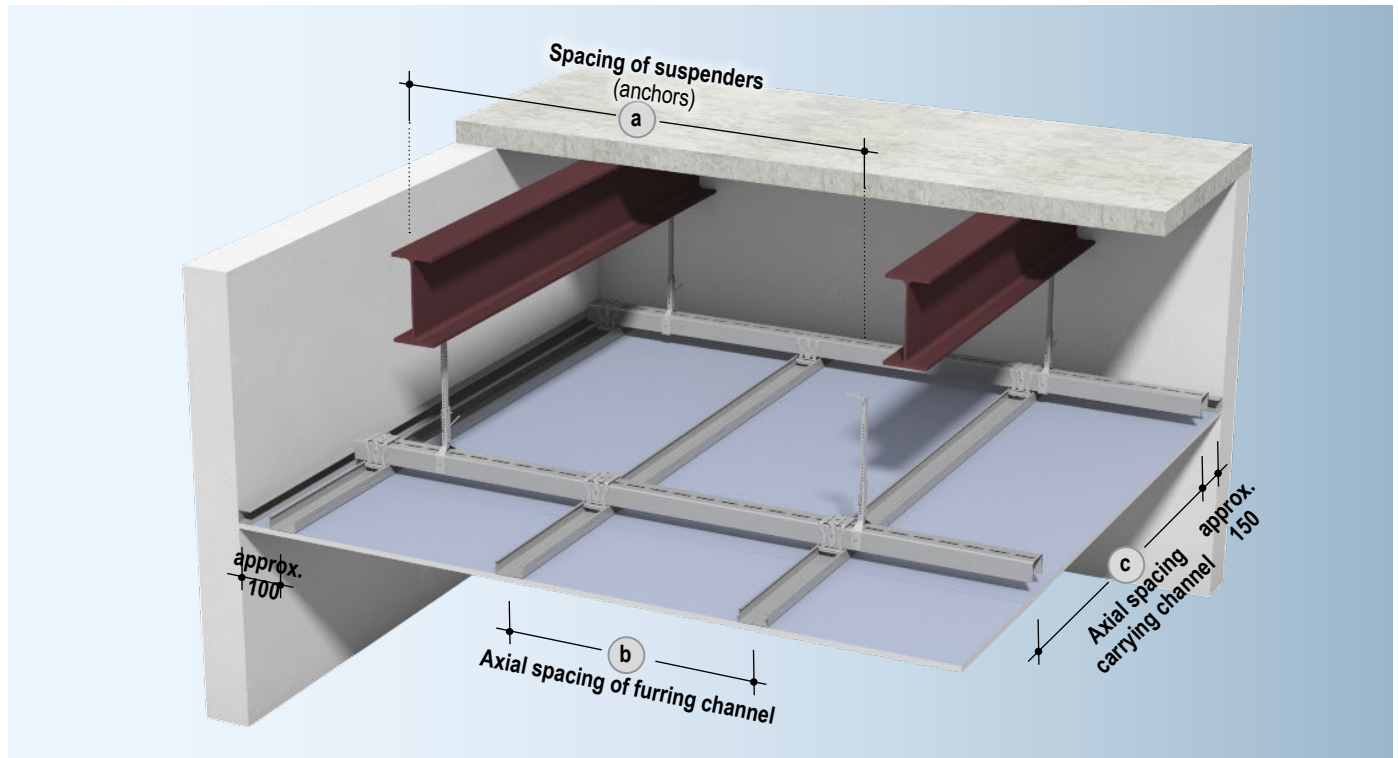
Axial spacings furring channel b	Suspender spacings a Load class in kN/m ²			
	Up to 0.15	Up to 0.30	Up to 0.40 ¹⁾	Up to 0.50 ¹⁾
400	1400	1150	1050	1000
500	1300	1050	950	900

1) Use suspenders of load carrying capacity class 0.40 kN

Maximum grid spacings

D116.de Metal Grid with UA Profiles 50/40 + CD Profile 60/27 large-span

Dimensions in mm



Determination of load class

Load class kN/m ²	Nominal weight + weight of additional loads kg/m ²
Up to 0.65	60
Up to 0.50	50
Up to 0.40	40
Up to 0.30	30
Up to 0.15	20
	10

Fire resistance in conjunction with basic ceilings of types I to III carrying and furring channel UA + CD

Carrying channel spacings c	Spacings of suspenders/anchors a Nonius stirrup 0.40 kN Load class in kN/m ²				
	Up to 0.15	Up to 0.30	Up to 0.40	Up to 0.50	Up to 0.65
	500	600	700	800	900
1400	1150	1000	950	850	800
1350	1050	950	850	800	750
1250	1000	900	850	800	750
1200	950	850	800	750	700
1150	900	800	750	700	650
1100	850	750	700	650	600



Extension of the fire resistance Certificate of Usability
Prior consultation in acc. to page 100 is recommended.

Notes

Observe notes from page 100.

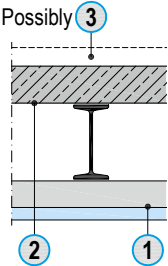
For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Fire resistance effect of board ceiling systems in conjunction with basic ceilings of types I to III

Division of the partial construction elements with demands on the fire resistance

With respect to the fire resistance, the entire ceiling construction acts on the partial construction elements ceiling lining/suspended ceiling, basic ceiling and possibly on floor constructions.

- 3 Floor construction rated for exposure to fire from above (ceiling top) in accordance with the folder "Fire resistance with Knauf", chapter "Floor systems" (German only)
- 2 Basic ceilings of type I to III
- 1 Ceiling linings / suspended ceilings acc. to system variants table of the Knauf systems



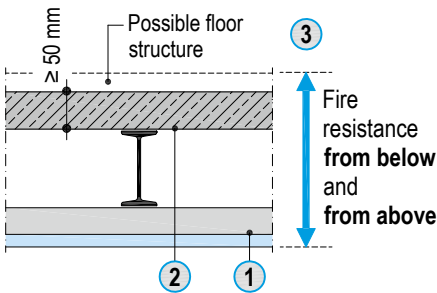
Basic ceilings of type I to III

2 Basic ceilings	System selection
Ceiling type I	
	Ceilings with exposed steel beams in the plenum area with a U/A ratio $\leq 300 \text{ m}^{-1}$ and an upper cover of pumice concrete hollow core planks or aerated concrete slabs
	Ribbed concrete cover with filler joists made of light concrete or bricks
	Reinforced concrete joist ceilings with filler joists made of light concrete or bricks
	Reinforced concrete ceiling in conjunction with steel beams embedded in concrete
Ceiling type II	
	Ceilings with exposed steel beams in the plenum area with a U/A ratio $\leq 300 \text{ m}^{-1}$ and an upper cover of in-situ concrete or prefabricated boards with structurally active in-situ concrete layer or prefabricated parts made of hollow core planks made of steel or reinforced and prestressed concrete

2 Basic ceilings	System selection
Ceiling type III	
	Reinforced concrete or prestressed concrete slabs made of standard concrete
	Reinforced concrete joist ceilings with beams and filler joists made of standard concrete
	Two-way flat slab ceiling and dropped ceiling made of standard concrete
	Reinforced concrete or prestressed concrete hollow core slabs
	Ribbed concrete cover without filler joists or with filler joists made of normal concrete

Load-bearing ceilings subject to fire resistance requirements must generally withstand exposure to fire from the bottom of the ceiling as well as from the top of the top of the ceiling.

If the basic ceiling alone does not comply with the required fire resistance class, an additional suspended ceiling / ceiling lining made of Knauf boards in conjunction with a basic ceiling can provide the required fire resistance. For a rating from above, additional measures may be necessary, e.g. classified screeds acc. to the folder "Brandschutz mit Knauf - Fire protection with Knauf", chapter "Bodensysteme - Floor systems" (German only).



The specifications of the German National Technical Test Certificate (AbP) assume, among other factors, that in the plenum area between basic ceiling and suspended ceiling, that no combustible components are located with the exception of components that are elements of the suspended ceiling construction. Combustible cable insulation and freely exposed not easily flammable materials, which are as evenly distributed as possible, are considered to be quiet safe if the fire load is $\leq 7 \text{ kWh/m}^2$.

Notes	Observe notes from page 100. For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.
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Water action classes W2-I and W3-I

Metal stud partition systems with cement boards

W381.de Metal stud partition, single metal stud frame, single-layer cladding

W382.de Metal stud partition, single metal stud frame, double-layer cladding

W383.de Metal stud partition, single metal stud frame, single-layer mixed cladding

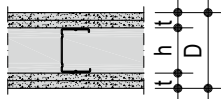
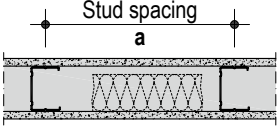
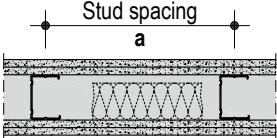
W384.de Metal stud partition, single metal stud frame, double-layer mixed cladding

W385.de Metal stud partition, double metal stud frame, single/double-layer / mixed cladding

W386.de Metal stud partition, double metal stud frame, single/double-layer / mixed cladding

W381.de Single metal stud partition, single-layer cladding

W382.de Single metal stud frame, double-layer cladding

Knauf System	Fire resistance class	Cladding per wall side		Weight	Wall thickness	Profile Knauf CW C3/C5M	Sound insulation		
		AQUAPANEL Cement Board Indoor	Minimum thickness				Without Insulation layer	Insulation layer	Sound reduction index
		t mm							
W381.de Metal stud partition									
Single metal stud frame, single-layer cladding									
	F30	•	12.5	24	75	50	50	43	41
					100	75	50	≥ 43	≥ 41
					125	100	50	≥ 43	≥ 41
W382.de Metal stud partition									
Single metal stud frame, double-layer cladding									
	F90	•	2x 12.5	46	100	50	40	55.0	53
					125	75	60	57.2	55
					150	100	80	60.7	58

Sound reduction index values represented in italics are derived values from measurements on divergent constructions.

With fire resistance:

Back the upper and lower as well as the lateral perimeter profiles with mineral wool insulation strips **S**.

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 50 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

Notes

Observe notes from page 100.

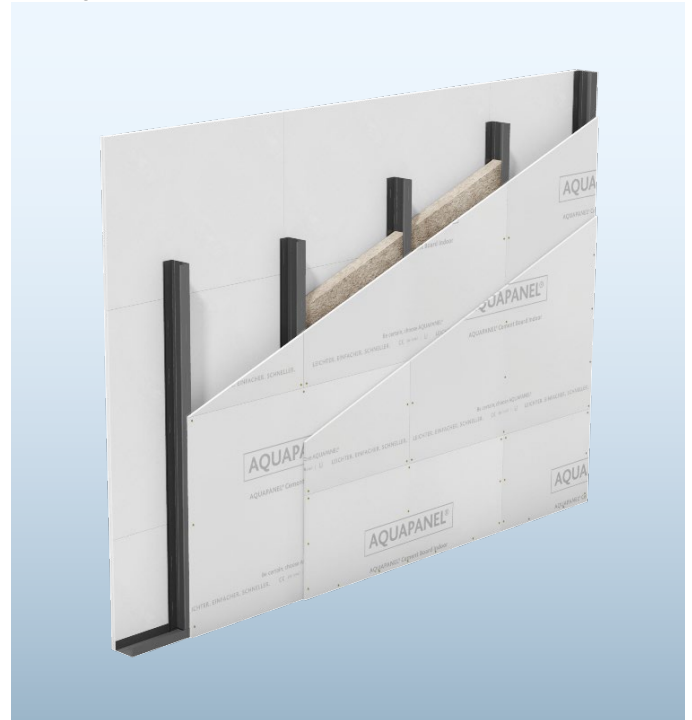
For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

Wall heights

W381.de Metal stud partition, single metal stud frame, single-layer cladding



W382.de Metal stud partition, single metal stud frame, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs a mm	W381.de AQUAPANEL Cement Board Indoor 12.5 mm			W382.de AQUAPANEL Cement Board Indoor 2x 12.5 mm		
		Without fire resistance	With fire resistance		Without fire resistance	With fire resistance	
Metal gauge 0.6 mm		m	Without insulation layer	Mineral wool G	m	Without insulation layer	Mineral wool G
	625	2.85 ¹⁾ / –	2.85 ¹⁾ / –	2.85 ¹⁾ / –	3.30 ¹⁾ / 2.40	3.30 ¹⁾ / 2.40	3.00 ¹⁾ / 2.40
CW 50	417	3.50 ¹⁾ / 2.90	3.50 ¹⁾ / 2.90	3.00 ¹⁾ / 2.90	4.00	4.00	3.00
	312.5	4.00	4.00	3.00	4.00	4.00	3.00
CW 75	625	4.00	4.00	4.00	4.00	4.00	4.00
	417	4.00	4.00	4.00	4.55	4.55	4.55
	312.5	4.55	4.55	4.55	5.45	5.00	5.00
CW 100	625	4.45	4.45	4.45	5.10	5.00	5.00
	417	5.45	5.00	5.00	6.70	5.00	5.00
	312.5	6.30	5.00	5.00	7.90	5.00	5.00
CW 125	625	5.80	5.00	5.00	7.10	5.00	5.00
	417	7.20	5.00	5.00	8.00	5.00	5.00
	312.5	8.00	5.00	5.00	8.00	5.00	5.00
CW 150	625	7.40	5.00	5.00	8.00	5.00	5.00
	417	8.00	5.00	5.00	8.00	5.00	5.00
	312.5	8.00	5.00	5.00	8.00	5.00	5.00

1) only for installation zone 1

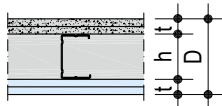
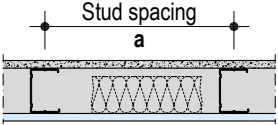
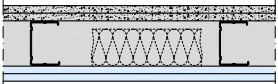
Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W383.de Single metal stud partition, single-layer mixed cladding

W384.de Single metal stud partition, double-layer mixed cladding

Knauf System	Fire resistance class	Cladding Partition side 1		Partition side 2			Weight	Wall thick-ness	Profile Knauf CW C3/C5M	Sound insulation			
		AQUAPANEL Cement Board Indoor	Mini-mum thick-ness	AQUAPANEL Cement Board Indoor	Knauf Piano fire-resistant board (I) ¹⁾	Diamant				Mini-mum thick-ness	Insula-tion layer	Sound reduction index	
		t mm				t mm				approx. kg/m²	D mm	h mm	mm
W383.de Metal stud partition, Single metal stud frame, single-layer mixed cladding													
	F30	●	12.5	●	12.5	23	75	50	50	44.9	42		
							100	75	50	≥ 44	≥ 42		
							125	100	50	≥ 44	≥ 42		
		●	12.5	●	12.5	25	75	50	50	≥ 44	≥ 42		
							100	75	50	≥ 44	≥ 42		
							125	100	50	≥ 44	≥ 42		
W384.de Metal stud partition, Single metal stud frame, double-layer mixed cladding													
	F90	●	2x 12.5	●	2x 12.5	44	100	50	50	54.2	52		
							125	75	50	≥ 54	≥ 52		
							150	100	50	≥ 54	≥ 52		
		●	2x 12.5	●	2x 12.5	48	100	50	–	–	–		
							125	75	60	57.8	55		
							150	100	80	≥ 57	≥ 55		

1) Knauf Piano fire-resistant board GKF and GKF1 (specially impregnated gypsum core)

Sound reduction index values represented in italics are derived values from measurements on divergent constructions.

With fire resistance:

Back the upper and lower as well as the lateral perimeter profiles with mineral wool insulation strips **S**.

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 50 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

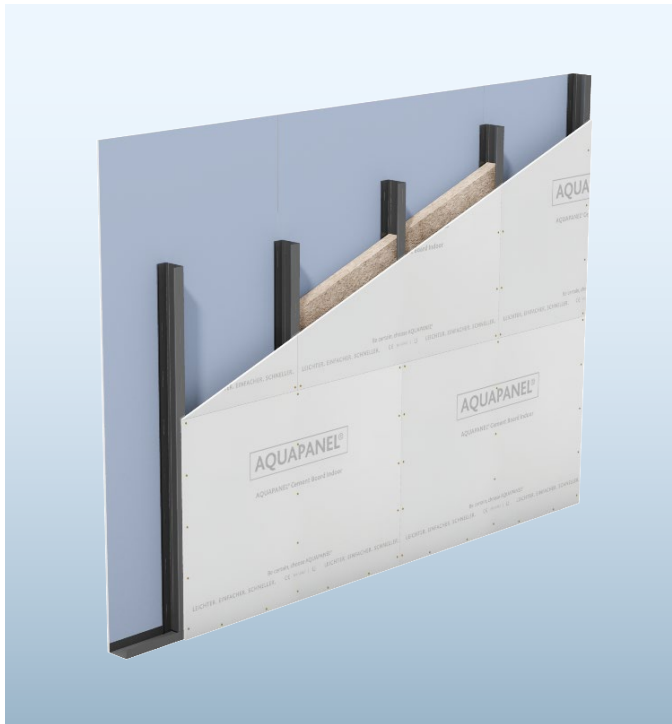
Notes

Observe notes from page 100.

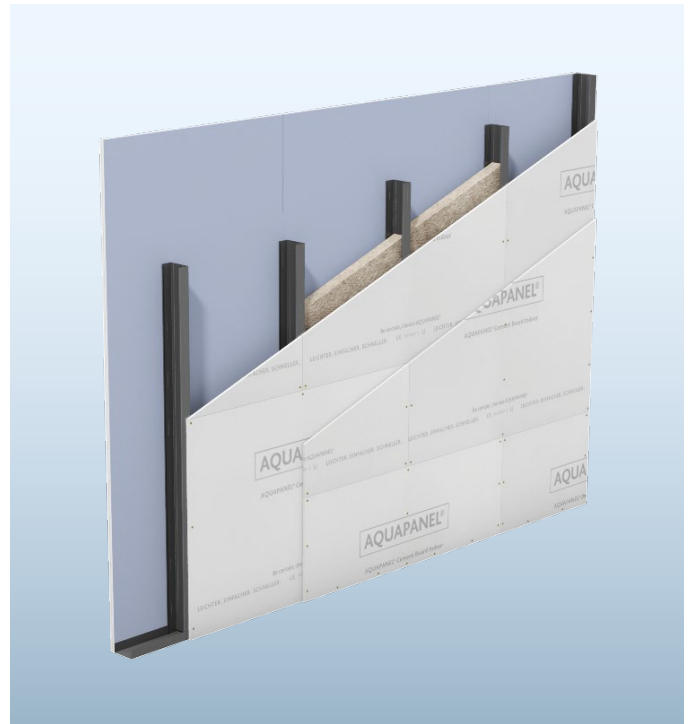
For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

Wall heights

W383.de Metal stud partition, single metal stud frame, single-layer mixed cladding



W384.de Metal stud partition, single metal stud frame, double-layer mixed cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	W383.de AQUAPANEL Cement Board Indoor 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 12.5 mm		W384.de AQUAPANEL Cement Board Indoor 2x 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 2x 12.5 mm	
		Without fire resistance	With fire resistance	Without fire resistance	With fire resistance
Metal gauge 0.6 mm	a mm	m	m	m	m
CW 50	625	3.00 ¹⁾ / –	3.00 ¹⁾ / –	3.90	3.00
	417	3.65 ¹⁾ / 3.30	3.00	4.00	3.00
	312.5	4.00	3.00	4.00	3.00
CW 75	625	4.00	3.00	4.20	3.00
	417	4.15	3.00	5.25	3.00
	312.5	4.70	3.00	6.00	3.00
CW 100	625	4.75	3.00	6.05	3.00
	417	5.70	3.00	7.40	3.00
	312.5	6.45	3.00	8.00	3.00
CW 125	625	6.25	3.00	8.00	3.00
	417	7.40	3.00	8.00	3.00
	312.5	8.00	3.00	8.00	3.00
CW 150	625	7.80	3.00	8.00	3.00
	417	8.00	3.00	8.00	3.00
	312.5	8.00	3.00	8.00	3.00

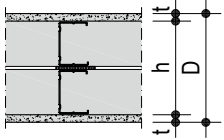
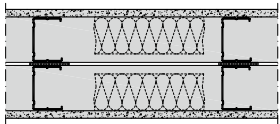
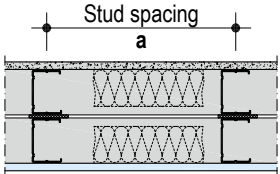
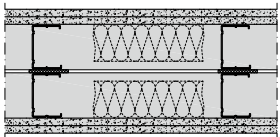
1) only for installation zone 1

Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W385.de Metal stud partition, single/double-layer / mixed cladding

Knauf System	Fire resistance class	Cladding Partition side 1		Partition side 2			Weight	Wall thickness	Profile Knauf CW C3/C5M	Sound insulation					
		AQUAPANEL Cement Board Indoor	Minimum thickness	AQUAPANEL Cement Board Indoor	Knauf Piano fire-resistant board (I) ⁽¹⁾	Diamant				Minimum thickness	Insulation layer	Sound reduction index			
		t mm				t mm									
							approx. kg/m²	D mm	h mm	mm	R _w dB	R _{w,R} dB			
W385.de Metal stud partition													Double metal stud frame, single/double-layer / mixed cladding		
	F30	●	12.5	●		12.5	26	130	2x 50	–	–	–			
								180	2x 75	–	–	–			
								230	2x 100	–	–	–			
			●	12.5		●	12.5	25	130	2x 50	–	–	–		
									180	2x 75	–	–			
									230	2x 100	–	–	–		
			●	12.5		●	12.5	27	130	2x 50	–	–	–		
									180	2x 75	–	–	–		
									230	2x 100	–	–	–		
	F90	●	2x 12.5	●		2x 12.5	48	155	2x 50	2x 40	64.2	62			
								205	2x 75	2x 60	≥ 66	≥ 64			
								255	2x 100	2x 80	≥ 66	≥ 64			
		●	2x 12.5		●	2x 12.5	46	155	2x 50	–	–	–			
								205	2x 75	–	–	–			
								255	2x 100	–	–	–			
			●	2x 12.5		●	2x 12.5	50	155	2x 50	2x 40	66.4	64		
									205	2x 75	2x 60	≥ 66	≥ 64		
									255	2x 100	2x 80	≥ 66	≥ 64		

1) Knauf Piano fire-resistant board GKF and GKFI (specially impregnated gypsum core)

Sound reduction index values represented in italics are derived values from measurements on divergent constructions.

With fire resistance:

Back the upper and lower as well as the lateral perimeter profiles with mineral wool insulation strips **S**.

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 50 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

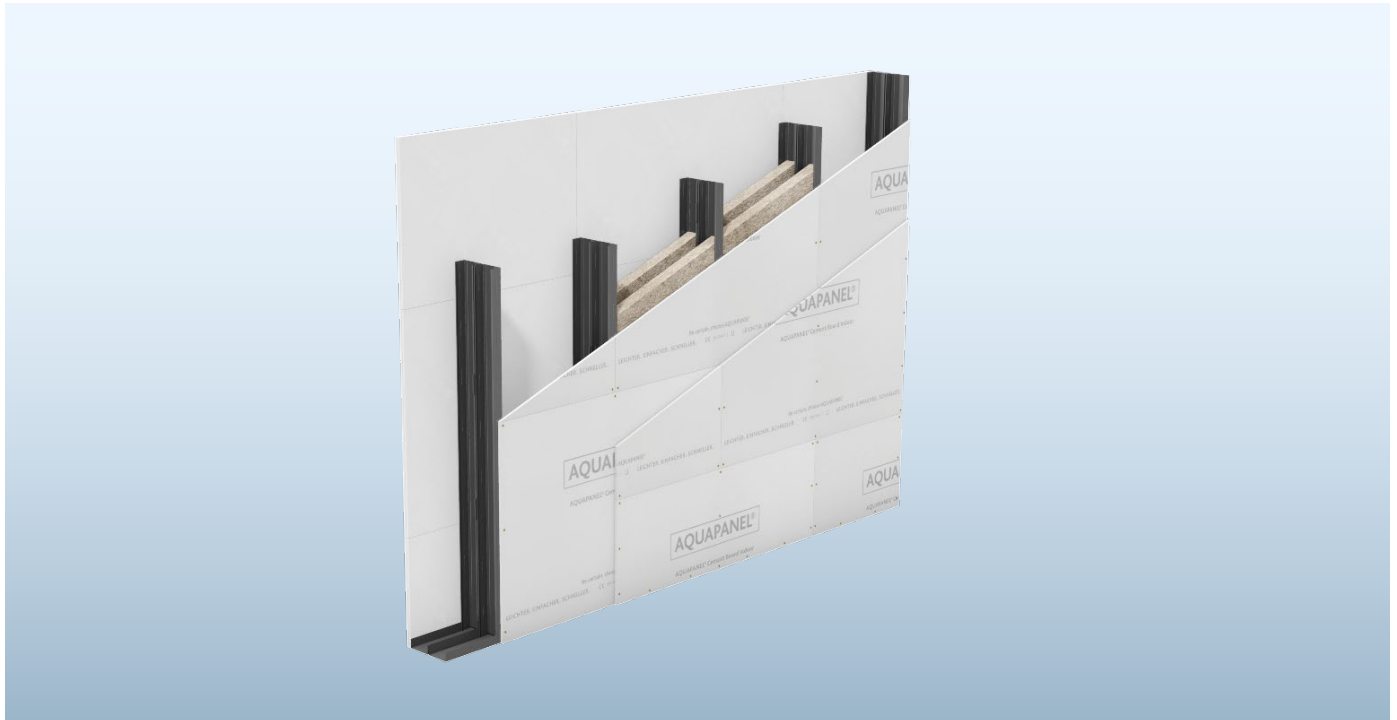
Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

Wall heights

W385.de Metal stud partition, double metal stud frame, single/double-layer / mixed cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	AQUAPANEL Cement Board Indoor 12.5 mm		AQUAPANEL Cement Board Indoor 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 12.5 mm		AQUAPANEL Cement Board Indoor 2x 12.5 mm		AQUAPANEL Cement Board Indoor 2x 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 2x 12.5 mm	
		Without fire resistance m	With fire resistance m	Without fire resistance m	With fire resistance m	Without fire resistance m	With fire resistance m	Without fire resistance m	With fire resistance m
Metal gauge 0.6 mm	a								
	mm								
CW 50 ²⁾	625	2.55 ¹⁾ / –	2.55 ¹⁾ / –	2.55 ¹⁾ / –	2.55 ¹⁾ / –	2.60 ¹⁾ / –	2.60 ¹⁾ / –	2.60 ¹⁾ / –	2.60 ¹⁾ / –
	417	3.10 ¹⁾ / 2.35	3.10 ¹⁾ / 2.35	3.10 ¹⁾ / 2.35	3.00 ¹⁾ / 2.35	3.20 ¹⁾ / 2.50	3.20 ¹⁾ / 2.50	3.20 ¹⁾ / 2.50	3.00 ¹⁾ / 2.50
	312.5	3.50 ¹⁾ / 3.10	3.50 ¹⁾ / 3.10	3.50 ¹⁾ / 3.10	3.00	3.70 ¹⁾ / 3.55	3.70 ¹⁾ / 3.55	3.70 ¹⁾ / 3.55	3.00 ¹⁾ / 3.10
CW 75	625	3.80	3.80	3.80	3.00	3.95	3.95	3.95	3.00
	417	4.00	4.00	4.00	3.00	4.00	4.00	4.00	3.00
	312.5	4.00	4.00	4.00	3.00	4.15	4.15	4.15	3.00
CW 100	625	4.00	4.00	4.00	3.00	4.00	4.00	4.00	3.00
	417	4.75	4.75	4.75	3.00	4.95	4.95	4.95	3.00
	312.5	5.40	5.00	5.40	3.00	5.75	5.00	5.75	3.00
CW 125	625	5.00	5.00	5.00	3.00	5.15	5.00	5.15	3.00
	417	6.05	5.00	6.05	3.00	6.45	5.00	6.45	3.00
	312.5	6.95	5.00	6.95	3.00	7.45	5.00	7.45	3.00
CW 150	625	6.15	5.00	6.15	3.00	6.50	5.00	6.50	3.00
	417	7.15	5.00	7.15	3.00	8.00	5.00	8.00	3.00
	312.5	8.00	5.00	8.00	3.00	8.00	5.00	8.00	3.00

1) Only for installation zone 1

2) CW50: For fire protection requirements **with** mineral wool insulation layer, only wall heights **up to 3.00 m** are permissible.

Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W386.de Installation wall, single/double-layer / mixed cladding

Knauf System	Fire resistance class	Cladding Partition side 1		Partition side 2			Weight	Wall thickness	Profile Knauf CW C3/C5M	Sound insulation				
		AQUAPANEL Cement Board Indoor	Mini-mum thick-ness	AQUAPANEL Cement Board Indoor	Knauf Piano fire-resistant board (I) ⁽¹⁾	Diamant				Mini-mum thick-ness	Without insulation layer	Cavity	Insula-tion layer	Sound reduction index
		t mm				t mm				approx. kg/m²	D mm	h mm	mm	R _w dB
W386.de Installation wall														
Double metal stud frame, single/double-layer / mixed cladding														
	F30	•	12.5	•		12.5	26	≥ 130	2x 50	50	50	48		
								≥ 180	2x 75	50	≥ 50	≥ 48		
								≥ 230	2x 100	50	≥ 50	≥ 48		
		•	12.5	•		12.5	25	≥ 130	2x 50	50	53.5	51		
								≥ 180	2x 75	50	≥ 53	≥ 51		
								≥ 230	2x 100	50	≥ 53	≥ 51		
	•	12.5		•	12.5	27	≥ 130	2x 50	50	≥ 53	≥ 51			
							≥ 180	2x 75	50	≥ 53	≥ 51			
							≥ 230	2x 100	50	≥ 53	≥ 51			
	F90	•	2x 12.5	•		2x 12.5	48	≥ 155	2x 50	50	57	55		
								≥ 205	2x 75	50	≥ 57	≥ 55		
								≥ 255	2x 100	50	≥ 57	≥ 55		
		•	2x 12.5	•		2x 12.5	46	≥ 155	2x 50	50	61.4	59		
								≥ 205	2x 75	50	≥ 61	≥ 59		
								≥ 255	2x 100	50	≥ 61	≥ 59		
		•	2x 12.5		•	2x 12.5	50	≥ 130	2x 50	50	≥ 61	≥ 59		
								≥ 180	2x 75	50	≥ 61	≥ 59		
								≥ 230	2x 100	50	≥ 61	≥ 59		

1) Knauf Piano fire-resistant board GKF and GKFI (specially impregnated gypsum core)

Sound reduction index values represented in italics are derived values from measurements on divergent constructions.

With fire resistance:

Back the upper and lower as well as the lateral perimeter profiles with mineral wool insulation strips **S**.

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 50 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

Wall heights

W386.de Installation wall, double metal stud frame, single/double-layer / mixed cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	AQUAPANEL Cement Board Indoor 12.5 mm		AQUAPANEL Cement Board Indoor 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 12.5 mm		AQUAPANEL Cement Board Indoor 2x 12.5 mm		AQUAPANEL Cement Board Indoor 2x 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 2x 12.5 mm	
		Without fire resistance m	With fire resistance m	Without fire resistance m	With fire resistance m	Without fire resistance m	With fire resistance m	Without fire resistance m	With fire resistance m
Metal gauge 0.6 mm	a								
	mm								
CW 50 ²⁾	625	3.55	3.55	3.55	3.00	4.00	4.00	4.00	3.00
	417	4.00	4.00	4.00	3.00	4.00	4.00	4.00	3.00
	312.5	4.00	4.00	4.00	3.00	4.70	4.70	4.70	3.00
CW 75	625	4.95	4.95	4.95	3.00	5.75	5.00	5.75	3.00
	417	6.10	5.00	6.10	3.00	7.40	5.00	7.40	3.00
	312.5	7.05	5.00	7.05	3.00	8.00	5.00	8.00	3.00
CW 100	625	5.35	5.00	5.35	3.00	5.85	5.00	5.85	3.00
	417	6.65	5.00	6.65	3.00	7.55	5.00	7.55	3.00
	312.5	7.60	5.00	7.60	3.00	8.00	5.00	8.00	3.00
CW 125	625	8.00	5.00	8.00	3.00	8.00	5.00	8.00	3.00
	417	8.00	5.00	8.00	3.00	8.00	5.00	8.00	3.00
	312.5	8.00	5.00	8.00	3.00	8.00	5.00	8.00	3.00
CW 150	625	8.00	5.00	8.00	3.00	8.00	5.00	8.00	3.00
	417	8.00	5.00	8.00	3.00	8.00	5.00	8.00	3.00
	312.5	8.00	5.00	8.00	3.00	8.00	5.00	8.00	3.00

2) CW50: For fire protection requirements **with** mineral wool insulation layer, only wall heights **up to 3.00 m** are permissible.

Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



Water action classes W2-I and W3-I

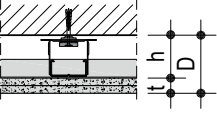
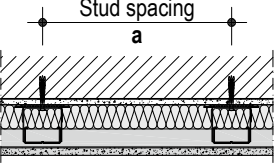
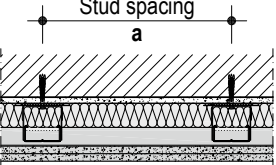
Furring systems with cement boards

W683.de Furring directly anchored, metal grid CD 60/27 single-/double-layer cladding

W685.de Furring, detached, metal studs CW, single-layer cladding

W686.de Furring, detached, metal studs CW, double-layer cladding

W683.de Directly anchored, metal grid CD 60/27, single-/double-layer cladding

Knauf System	Cladding	Weight	Minimum thickness	Profile Knauf CD C3/C5M	Cavity	Sound insulation		
						Insulation layer G	Improve-ment index	Resonance frequency ¹⁾
	AQUAPANEL Cement Board Indoor Minimum thickness t mm	Without insulation layer approx. kg/m ²	D mm		h mm	mm	$\Delta R_{w,heavy}$ dB	f_0 Hz
W683.de Furring directly anchored Metal grid CD 60/27, directly anchored with damping universal brackets, single-/double-layer cladding								
	• 12.5	13	≥ 52.5	60/27	≥ 40	≥ 30	7	85
	• 2x 12.5	24	≥ 65.0	60/27	≥ 40	≥ 30	10	61

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m².

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

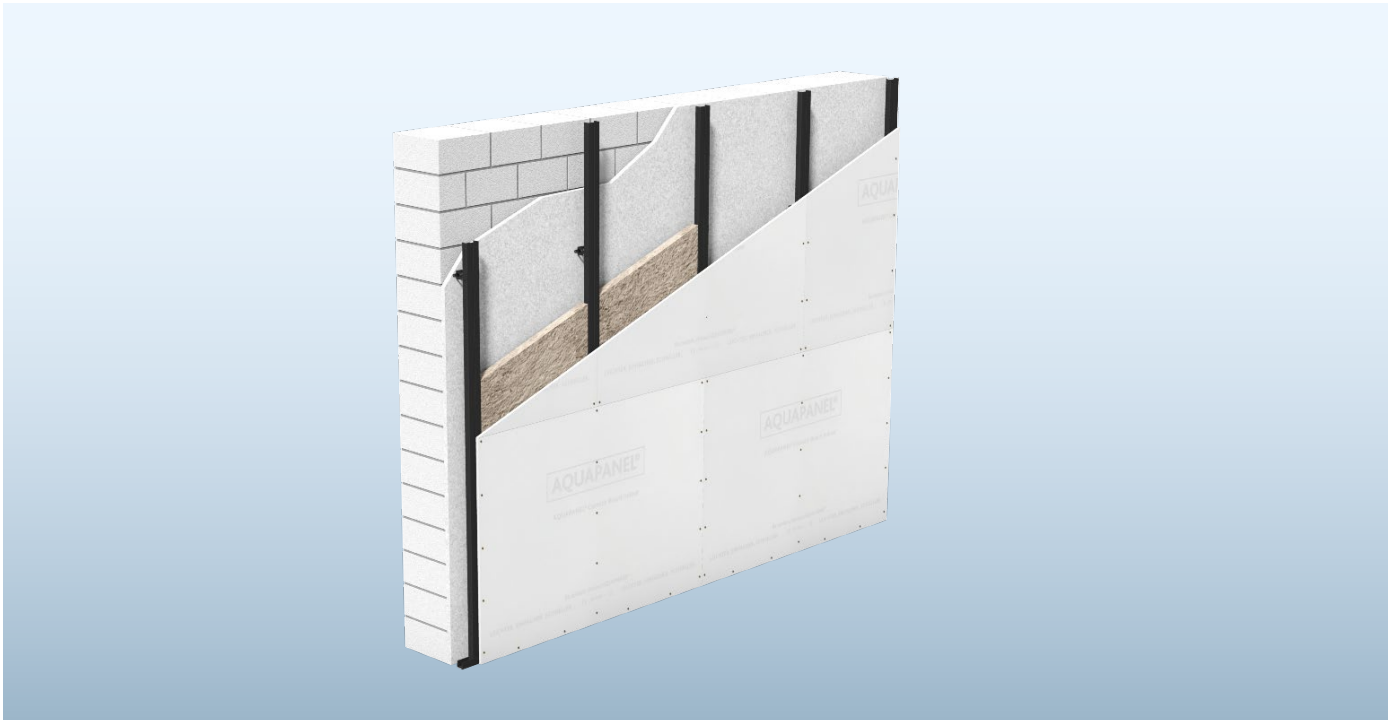
Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

Wall heights

W683.de Furring directly anchored, metal grid CD 60/27, single-/double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	AQUAPANEL Cement Board Indoor 12.5 mm	AQUAPANEL Cement Board Indoor 2x 12.5 mm
Metal gauge 0.6 mm	a mm	m	m
CD 60/27	625	10	10

- Use Universal Bracket 120 mm
- Max. partition cavity 127 mm

Notes

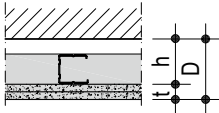
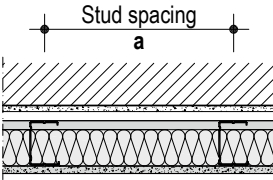
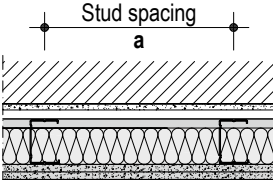
The maximum wall heights specified here include the combination of the load case installation zone 1, installation zone 2 and wind load (0.285 kN/m²) with cantilever load acc. to DIN 18183 with DIN 4103-1.

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W685.de Detached, metal studs CW, single-layer cladding

W686.de Detached, metal studs CW, double-layer cladding

Knauf System	Cladding	Weight	Minimum thickness	Profile Knauf CW C3/C5M	Cavity	Sound insulation			
	AQUAPANEL Cement Board Indoor Minimum thickness t mm	Without insulation layer approx. kg/m²	D mm		h mm	Insulation layer G mm	Improvement index $\Delta R_{w,heavy}$ dB	Resonance frequency¹) f_0 Hz	
W685.de Furring, detachedMetal studs CW, single-layer cladding									
	• 12.5	14	≥ 62.5	50	≥ 50	40	10	62	
			≥ 87.5	75	≥ 75	60	12	51	
			≥ 112.5	100	≥ 100	80	13	44	
W686.de Furring, detachedMetal studs CW, double-layer cladding									
	• 2x 12.5	24	≥ 75	50	≥ 50	40	13	45	
			≥ 100	75	≥ 75	60	15	37	
			≥ 125	100	≥ 100	80	16	32	

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m².

Requirements for the insulation layer: (Insulation materials, e.g. from Knauf Insulation)

- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

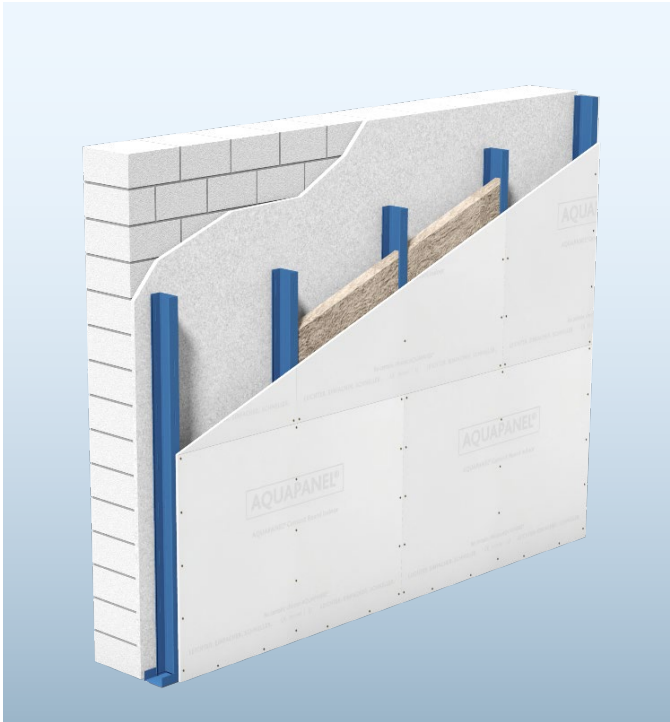
Notes

Observe notes from page 100.

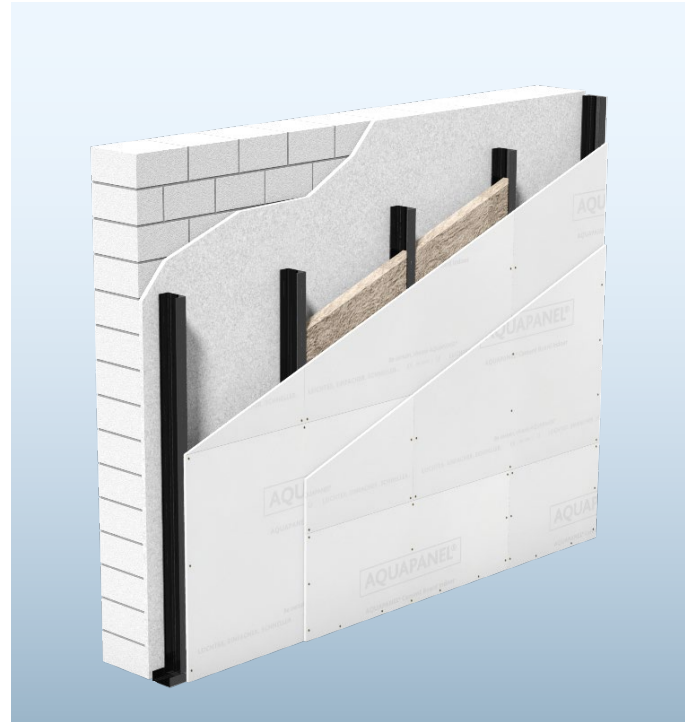
For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

Wall heights

W685.de Furring, detached, metal studs CW, single-layer cladding



W686.de Furring detached, metal studs CW, double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Spacing of studs	W685.de AQUAPANEL Cement Board Indoor 12.5 mm	W686.de AQUAPANEL Cement Board Indoor 2x 12.5 mm
Metal gauge 0.6 mm	a mm	m	m
CW 50	625	2.55 ¹⁾ / –	2.60 ¹⁾ / –
	417	3.10 ¹⁾ / 2.35	3.20 ¹⁾ / 2.50
	312.5	3.50 ¹⁾ / 3.10	3.70 ¹⁾ / 3.55
CW 75	625	3.80	3.95
	417	4.00	4.00
	312.5	4.00	4.15
CW 100	625	4.00	4.00
	417	4.75	4.95
	312.5	5.40	5.75
CW 125	625	5.00	5.15
	417	6.05	6.45
	312.5	6.95	7.45
CW 150	625	6.15	6.50
	417	7.45	8.00
	312.5	8.00	8.00

1) only for installation zone 1

Notes

The maximum wall heights specified here include the combination of the load case installation zone 1, installation zone 2 and wind load (0.285 kN/m²) with cantilever load acc. to DIN 18183 with DIN 4103-1.

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



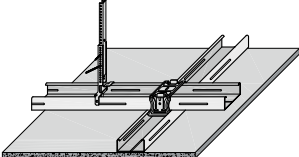
Water action classes W2-I and W3-I

Ceiling systems with cement boards

D282.de Board ceiling, metal grid with CD profiles 60/27

D282.de Metal grid with CD channels 60/27

Without fire resistance

	Fire resistance class		Cladding		Nominal weight	Furring channel CD 60/27 C3/C5M Maximum grid spacings <div>b</div>	Insulation layer Required for fire resistance			
	For fire exposure		AQUAPANEL Cement Board SkyLite	AQUAPANEL Cement Board Indoor			Minimum thickness mm	Without insulation layer kg/m²	Minimum thickness mm	Min. density kg/m³
	From below	From above								
	D282.de Board ceiling, metal grid with CD profiles 60/27									
	-	-	•	8.0	13.1	312.5 / 450 ¹⁾	-			
			•	12.5	13.6	312.5 / 450 ¹⁾				
			•	2x 8.0	23.6	312.5 / 450 ¹⁾				

1) 312.5 mm with lateral direction of application; 450 mm with longitudinal direction of application. Applies for AQUAPANEL Cement Board SkyLite/Indoor 900 x 1250 mm.

Ball impact safety

Ball impact safety is implemented when cladding 12.5 mm AQUAPANEL, Cement Board Indoor is applied.

Notes

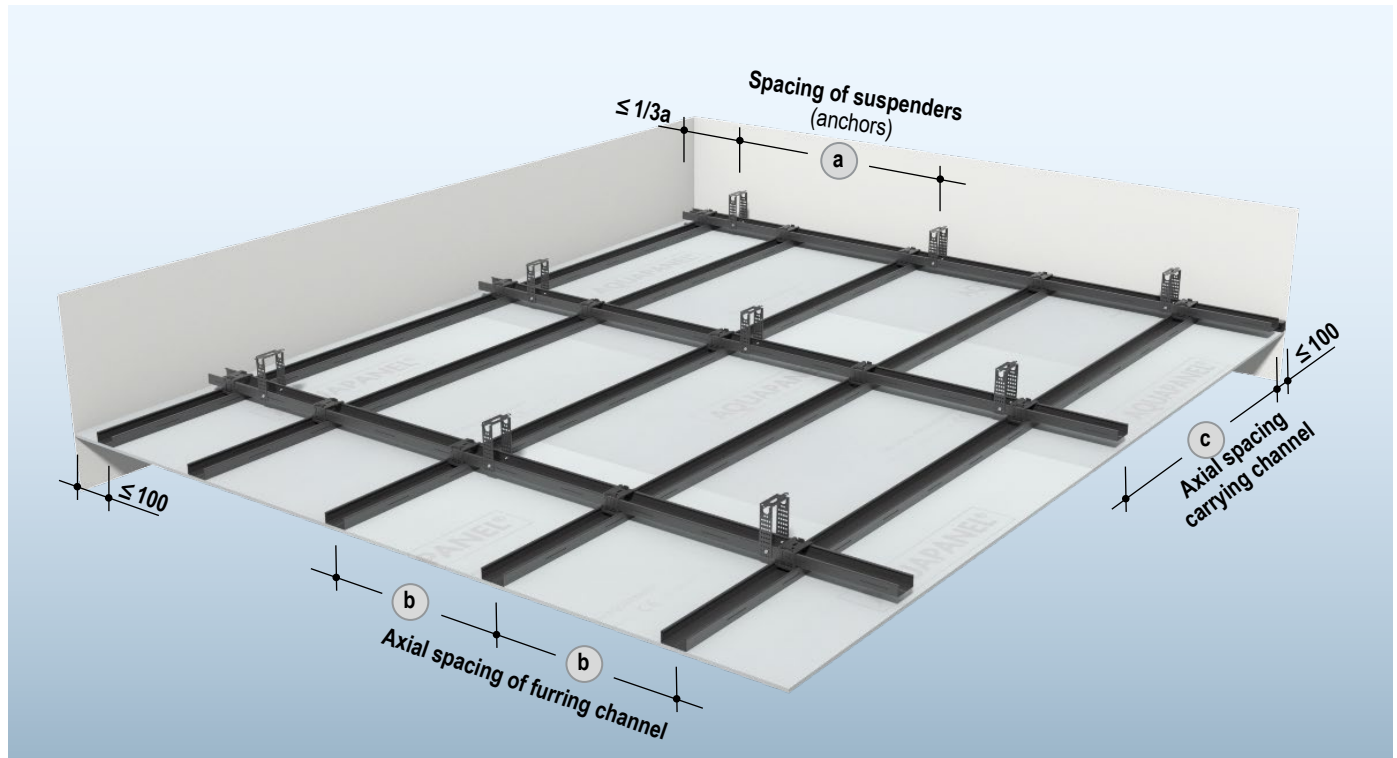
Observe notes from page 100.

For further planning and application details, see brochure Ceilings systems for indoors and outdoors DEA.de (German only).

Maximum grid spacings

D282.de Board ceiling, metal grid with CD profiles 60/27

Dimensions in mm



Determination of load class

Load class kN/m ²	Nominal weight + weight of additional loads kg/m ²
Up to 0.65	60
Up to 0.50	50
Up to 0.40	40
Up to 0.30	30
Up to 0.20	20
Up to 0.15	10

Without fire resistance, carrying and furring channel

Axial spacings carrying channel c	Suspender spacings a Load class in kN/m ²			
	Up to 0.15	Up to 0.20	Up to 0.30	Up to 0.50
500	1350	1250	1050	900
600	1300	1150	1000	850
700	1200	1100	950	800
800	1150	1050	900	750
900	1150	1000	900	750
1000	1100	1000	850	700
1100	1050	950	800	700
1200	1050	950	800	–
1300	1000	900	750	–
1400	1000	900	–	–

Spacings apply only in conjunction with connectors and suspenders with corrosivity category C3 and C5M.

Notes

Observe notes from page 100.

For further planning and application details, see brochure Ceilings systems for indoors and outdoors DEA.de (German only).

Notes on the document

Knauf technical brochures are the information documents on special topics as well as on the specialist competence from Knauf. The contained information and specifications as well as the construction variants of the stated products are based, unless otherwise stated, on the certificates of usability (e.g. National Technical Test Certificate (abP) and/or German National Technical Approvals (abZ)) valid at the date they are published as well as on the applicable standards. In addition, design and structural requirements and those regarding building physics (fire resistance and sound insulation) are considered.

References to other documents

System data sheets

- Knauf Metal Stud Partitions W11.de
- Knauf Furring W61.de
- Knauf Installation Shaft Walls W62.de
- Knauf Board Ceiling D11.de
- Knauf Free-Spanning Ceilings D13.de
- Knauf Pre-fab Floor Screed F12.de

Brochures

- Wet room solutions with AQUAPANEL technology NA.de
- Drywalling in damp and wet rooms To154.de (German only)
- Ceilings systems for indoors and outdoors with AQUAPANEL technology DEA.de (German only).
- AQUAPANEL sealing BP17.de (German only)

Product data sheets

- Observe the Product Data Sheets of the Knauf system components

Symbols in this technical brochure

The following symbols are used in this document:

Insulation layers

- G** Mineral wool insulation layer acc. to EN 13162 non-combustible (insulating material, e.g. from Knauf Insulation)
- S** Mineral wool insulation layer acc. to EN 13162 non-combustible melting point ≥ 1000 °C acc. to DIN 4102-17 (insulating material, e.g. from Knauf Insulation)

Stud frame spacings

- a** Spacing of suspenders/anchors
- b** Axial spacing furring channel/hat-shaped channel (cladding span width)
- c** Axial spacing carrying channel (spacing furring channel)

Intended use of Knauf Systems

Please observe the following:

Caution	Knauf systems may only be used for the application cases as stated in the Knauf documentation. In case third-party products or components are used, they must be recommended or approved by Knauf. Flawless application of products/systems assumes proper transport, storage, assembly, installation and maintenance.
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General instructions

Terms

Installation zones acc. to DIN 4103-1

Installation zone 1

Partitions in rooms where low numbers of persons gather, e.g. dwellings, hotels, office and hospital rooms including corridors and halls or similar.

Installation zone 2

Partitions in rooms where large numbers of persons gather, e.g. meeting halls, school classrooms, auditoria, exhibition halls and sales rooms.

Unless otherwise stated, the value in the table is the maximum permissible partition height for installation zone 2 is considered.

Notes on sound insulation

- R_w = Weighted sound reduction index in dB without sound transmission via flanking building components
- $L_{n,w}$ = Weighted normalized impact sound pressure level in dB without sound transmission via flanking building components
- $\Delta R_{w,heavy}$ = Weighted sound reduction improvement index of the furring in conjunction with a basic wall as a solid wall with a mass per unit area of 350 ± 50 kg/m² acc. to EN ISO 10140-5:2010-12 appendix B
- f_0 = Resonance frequency, determined acc. to EN 4109-34:2016-07
- $D_{nT,w}$ = Weighted standardized sound level difference in dB with respect to a reference reverberation time of $T_0 = 0.5$ s without sound transmission via flanking building components
- Index R = Used to differentiate between the calculation value and the test stand values.

Notes

The verification of the new DIN 4109:2018-01 is no longer according to calculation values $R_{w,R}$ or $L_{n,w,R}$, but rather with the values obtained on the test rig $R_w/L_{n,w}$ rounded off to a single position following the decimal point. Only at the end of the forecast after consideration of all the perimeter surfaces (flanking surfaces) involved in the transmission of sound is an element of forecast uncertainty included in dependence on the type of separating constructional component. For a transition period, the Knauf System Data Sheets will specify both the test stand values as well as the calculated values used up to now.

If values are stated instead of rated test stand values, that are based on calculated prognoses or are derived from measured test stand values, they will be stated without positions following the decimal point.

Notes on fire resistance

The specifications marked with **plus** offer additional application options, which are not directly included in the Certificate of Usability. On the basis of our technical assessments, we assume that these marked design solutions can be assessed as a non-significant divergence. We can make the documentation on which this assessment is based, such as surveyors' reports or technical assessments, available to you together with the Certificate of Usability on request. We recommend that a non-significant divergence be coordinated and authorised in advance in consultation between the persons responsible for fire resistance and/or the relevant authorities.

The stated constructional and structural properties, and characteristic building physics of Knauf systems can solely be ensured with the exclusive use of Knauf system components, or other products expressly recommended by Knauf. The validity and up-to-datedness of the stated proofs have to be considered.

Certificates of Usability systems with gypsum boards

Metal stud partitions, furring, installation shaft walls

Knauf System	Fire resistance		Sound insulation		Structural engineering Taking the respective fire protection abP (National Technical Test Certificate) into consideration		
	Knauf boards / Diamant	Drystar-Board	Knauf boards / Diamant	Drystar-Board	Knauf boards	Diamant	Drystar-Board
W111.de	AbP P-3310/563/07-MPA BS	–	L 037-01.15	L 039-09.14	AbP P-1402/354/12-MPA BS	AbP P-1405/928/10-MPA BS	AbP P-1402/354/12-MPA BS
W112.de	AbP P-3310/563/07-MPA BS	AbP P-SAC 02/III-719	L 037-01.15	L 039-09.14	AbP P-1402/354/12-MPA BS	AbP P-1405/928/10-MPA BS	AbP P-1402/354/12-MPA BS
W113.de	AbP P-3310/563/07-MPA BS		L 037-01.15		AbP P-1402/354/12-MPA BS	AbP P-1405/928/10-MPA BS	
W115.de	AbP P-3310/563/07-MPA BS	AbP P-SAC 02/III-719	L 037-01.15	–	DIN 18183-1 and Knauf recommendation	Knauf recommendation	Knauf recommendation
W116.de	AbP P-3310/563/07-MPA BS	AbP P-SAC 02/III-719	L 037-01.15	L 039-09.14	DIN 18183-1	Knauf recommendation	Knauf recommendation
W623.de	–	–	SWK 11 108	L 039-09.14	–	–	–
W625.de	–	–	SWK 11 108	–	AbP P-1403/355/12-MPA BS AbP P-1100/490/15-MPA BS		–
W626.de	–	–	SWK 11 108	–	AbP P-1403/355/12-MPA BS AbP P-1100/490/15-MPA BS		–
W653.de	–		–		AbP P-1403/355/12-MPA BS		
W628A.de	AbP P-3969/2222-MPA BS	–	L 020-08.09	–	Knauf calculation		
W628B.de	AbP P-3393/172/08-MPA BS abP P-SAC-02/III-797	–	L 020-08.09	–	AbP P-1403/355/12-MPA BS	AbP P-1100/490/15-MPA BS	
W629.de	AbP P-3393/172/08-MPA BS abP P-SAC-02/III-797	–	L 020-08.09	–	AbP P-1403/355/12-MPA BS	AbP P-1100/490/15-MPA BS	
W630.de	AbP P-3969/2222-MPA BS	–	L 020-08.09	–	Knauf calculation		
W635.de	AbP P-3320/194/09-MPA BS	–	L 020-08.09	–	Knauf calculation		

Board ceilings

Knauf System	Fire resistance Suspended ceilings allocated solely to a single fire resistance class		Sound insulation Suspended ceilings in conjunction with basic ceilings of types I to III		Sound insulation Airborne and impact sound (Knauf sound protection proofs)	
	Knauf boards / Diamant	Drystar-Board	Knauf boards / Diamant	Drystar-Board	Diamant	Drystar-Board
D112.de	F30: AbP P-2100/199/15-MPA BS F90: AbP P-3400/4965-MPA BS	–	AbP P-3155/3992-MPA BS		Floor Subceiling Floor + subceiling	T 007-06.10 T 008-10.10 T 009-10.10
D113.de	F30: AbP P-2100/199/15-MPA BS F90: AbP P-3400/4965-MPA BS	–			–	–
D116.de	F30: AbP P-2100/199/15-MPA BS F90: AbP P-3400/4965-MPA BS	–	AbP P-3155/3992-MPA BS		–	–
D131.de	F30: AbP P3964/2172-MPA BS F60: AbP P-3085/3824-MPA BS	–			T 007-06.10 / T 008-10.10 / T 009-10.10 / T 010-07.10 / T 011-07.10	–

System in the respective application variant is not a constituent part of this document.

Certificates of Usability systems with cement boards

Metal stud partitions, furring

Knauf System	Fire resistance	Sound insulation (Knauf sound protection proofs)	Structural engineering Taking the respective fire protection abP (National Technical Test Certificate) into consideration
W381.de	AbP P-2100/343/17-MPA BS	L 048-10.17	Knauf calculation
W382.de	AbP P-2100/345/17-MPA BS	L 048-10.17	Knauf calculation
W383.de	AbP P-2100/343/17-MPA BS	L 048-10.17	Knauf calculation
W384.de	AbP P-2100/345/17-MPA BS	L 048-10.17	Knauf calculation
W385.de	AbP P-2100/343/17-MPA BS AbP P-2100/345/17-MPA BS	L 048-10.17	Knauf calculation
W386.de	AbP P-2100/343/17-MPA BS AbP P-2100/345/17-MPA BS	L 048-10.17	Knauf calculation
W683.de	–	–	Knauf calculation
W685.de	–	–	Knauf calculation
W686.de	–	–	Knauf calculation

Board ceilings

Knauf System	Fire resistance	Sound insulation Airborne and impact sound
D282.de	–	–



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Floor Systems
Plaster & Façade Systems

Knauf Insulation
Insulation system for renovation and new projects

Knauf Integral
Gypsum fibre technology for floors, walls and ceilings

Knauf PFT
Machine Technology and Plant Engineering

Marbos
Mortar systems for cobblestone paving

Sakret Bausysteme
Dry mortars for new projects and renovations