

W11.de Knauf Metal Stud Partitions

W111.de – Knauf Metal Stud Partition – Single metal stud frame, single-layer cladding

W112.de – Knauf Metal Stud Partition – Single metal stud frame, double-layer cladding

W113.de – Knauf Metal Stud Partition – Single metal stud frame, triple-layer cladding

W115.de – Knauf Metal Stud Partition – Double metal stud frame, double-layer cladding

W116.de – Knauf Metal Stud Partition – Double metal stud frame, single/double-layer cladding

Note on English translation / Hinweise zur englischen Fassung

This is a translation of the system catalogue 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.

Dies ist eine Übersetzung des in Deutschland gültigen Detailblattes. Alle angegebenen Werte und Eigenschaften entsprechen den in Deutschland gültigen Normen und bauaufsichtlichen Regelungen. Sie gelten nur bei Verwendung der angegebenen Produkte, Systemkomponenten, Anwendungsregeln und Konstruktionsdetails in Verbindung mit den Vorgaben der bauaufsichtlichen Nachweise.

Die Knauf Gips KG lehnt jegliche Haftung für Einsatz und Anwendung außerhalb Deutschlands ab, da in diesem Fall eine Anpassung an nationale Normen und bauaufsichtliche Regelungen notwendig ist.

Knauf boards

Extract from Knauf product range

Board type		Dimensions mm		Short designation		Board edges Long edge		
		Thick-ness	Width	DIN	EN			
Gypsum boards acc. to DIN 18180 and EN 520							Reaction to fire A2-s1,d0 (B)	
Knauf Bauplatte wallboard	GKB	12.5	1250	GKB	A	Half-rounded tapered edge		
	GKBI	12.5	1250	GKBI	H2			
Feuerschutzplatte Knauf Piano fire-resistant board	GKF	12.5	1250	GKF	DF	Half-rounded tapered edge		
	GKFI	12.5	1250	GKFI	DFH2			
Knauf Feuerschutzplatte fire-resistant board	GKF	15	1250	GKF	DF	Half-rounded tapered edge		
		18	1250					
	GKFI	15	1250	GKFI	DFH2			
Massivbauplatte solid board	GKF	25	625	GKF	DF	Half-rounded tapered edge		
	GKFI	25	625	GKFI	DFH2			
Diamant	GKFI	12.5	1250	GKFI	DFH2IR	Half-rounded tapered edge		
		15	1250					
Diamant	GKFI	18	625	GKFI	DFH2IR	Half-rounded tapered edge		
Silentboard	GKF	12.5	625	GKF	DF	Half-rounded tapered edge		
Gypsum boards acc. to DIN 18180 and EN 520							Reaction to fire D-s1,d0	
Comfortboard 23 ¹⁾	GKB	12.5	1250	GKB	D	Half-rounded tapered edge		
Gypsum boards from reprocessing acc. to DIN 18180 and EN 14190							Reaction to fire A2-s1,d0 (C.2)	
Horizonboard ²⁾	GKF	12.5	1250	GKF	Procedure a/b	Tapered long edge		
Gypsum boards acc. to EN 15283-1							Reaction to fire A1	
Fireboard	GM-F	15	1250	-	GM-F	Square edge		
		20	1250					
		25	1250					
		30	1250					
Gypsum boards acc. to DIN EN 15283-1							Reaction to fire A2-s1,d0 (B)	
Drystar Board ³⁾	GM-FH1IR	12.5	1250	-	GM-FH1IR	Tapered long edge		

1) Application in constructions with demands made on the fire resistance on request

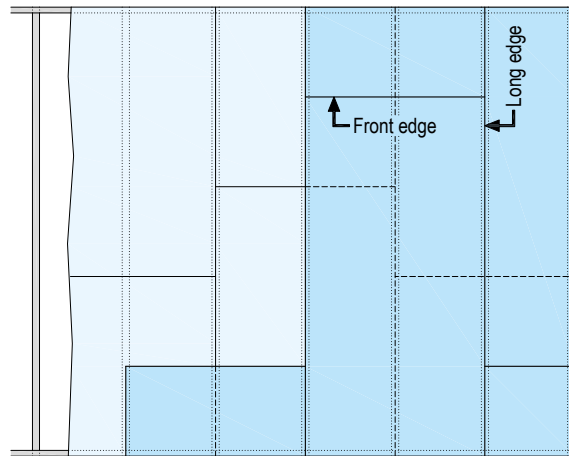
2) Application as top cladding layer possible analogue to Knauf Piano GKF fire-resistant board

3) Fire protection, sound insulation and application acc. to brochure Tro96.de Knauf Drystar

- GKBI/GKFI: Gypsum core with additional special impregnation against the absorption of moisture. Board suitable for high humidity areas.
- Drystar Board is suitable for use in damp and wet rooms

Board layers vertical

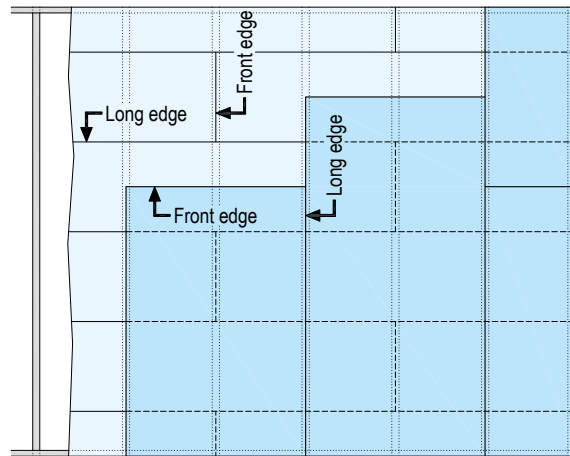
Board width: 1250 mm
Stud spacing: 625 mm



- Stagger long edge joints by 625 mm (one stud spacing)
- If floor-to-ceiling boards are not used, stagger the front edge joints in a cladding layer
 - Without fire protection: ≥ 400 mm
 - With fire protection: single-layer ≥ 1000 mm; multi-layer ≥ 500 mm
- Stagger the front edge joints between board layers in case of multi-layer cladding.
- Board joints of cladding on opposing sides must also be staggered to one another.

Board layers horizontal + vertical

Board width: 625 mm (lower layer horizontal)
Board width: 1250 mm (upper layer vertical)
Stud spacing: 625 mm



Lower layer:

- Front edge joints must be staggered by at least one stud spacing.
- Recommendation: Board length 2500 mm

Upper layer:

- If floor-to-ceiling boards are not used, stagger the front edge joints.
 - Without fire protection: ≥ 400 mm
 - With fire resistance: ≥ 500 mm

Offset between lower and upper layer:

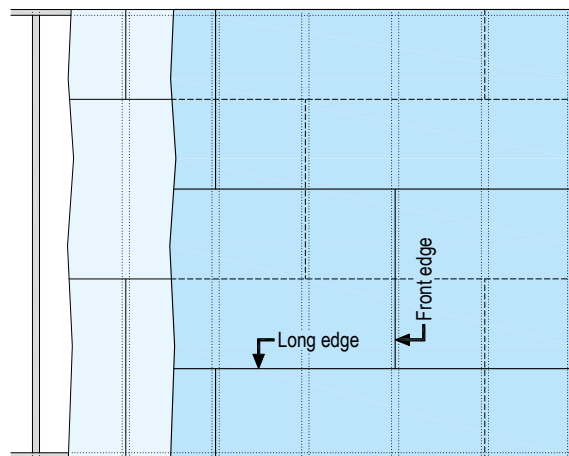
- Stagger the board joints of the upper layer by approx 312.5 mm to the board joints of the lower layer.

Offset of cladding on opposing sides:

- Board joints must also be staggered to one another.

Board layers horizontal (e.g. W116.de)

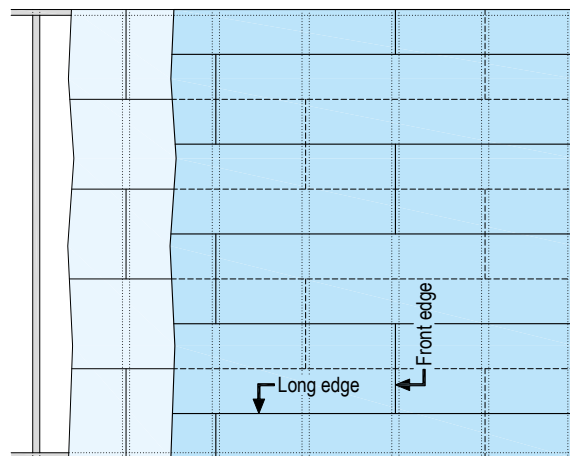
Board width: 1250 mm
Stud spacing: 625 mm



- Recommendation: Board length 2500 mm
- Front edge joints must be staggered by at least one stud spacing.
- Stagger the long joints between the cladding layers by at least half a board width.
- Board joints of cladding on opposing sides must also be staggered to one another.

Horizontal board layer

Board width: 625 mm
Stud spacing: 625 mm



- Recommendation: Board length 2500 mm
- Front edge joints must be staggered by at least one stud spacing.
- Stagger the long joints between the cladding layers by at least half a board width.
- Board joints of cladding on opposing sides must also be staggered to one another.

Fastening of the cladding to the stud frame with Knauf screws

Dimensions in mm

Cladding	Metal stud frame (Penetration ≥ 10 mm) Metal gauge $s \leq 0.7$ mm		Metal gauge 0.7 mm $< s \leq 2.25$ mm	
	Drywall screws	Diamant screws	Drywall screws	Diamant screws
Thickness in mm	TN	XTN	TB	XTB
12.5	TN 3.5x25	XTN 3.9x23	TB 3.5x25	XTB 3.9x35
15	–	XTN 3.9x33	–	XTB 3.9x35
18	–	XTN 3.9x33	–	XTB 3.9x35
2x 12.5	TN 3.5x25 + 3.5x35	XTN 3.9x23 + 3.9x38	TB 3.5x25 + 3.5x45	XTB 3.9x35 + 3.9x55
	TN 3.5x25	+ XTN 3.9x38 ¹⁾	TB 3.5x25	+ XTB 3.9x55 ¹⁾
25 + 12.5	TN 3.5x35 + 3.5x55	–	TB 3.5x45 + 3.5x55	–
	TN 3.5x35	+ XTN 3.9x55 ¹⁾	TB 3.5x45	+ XTB 3.9x55 ¹⁾
3x 12.5	TN 3.5x25 + 3.5x35 + 3.5x55	XTN 3.9x23 + 3.9x38 + 3.9x55	TB 3.5x25 + 3.5x45 + 3.5x55	XTB 3.9x35 + 3.9x55 + 3.9x55
	TN 3.5x25 + 3.5x35	+ XTN 3.9x55 ¹⁾	TB 3.5x25 + 3.5x45	+ XTB 3.9x55 ¹⁾

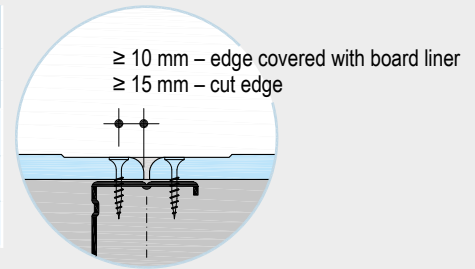
1) Combined cladding (Knauf boards + Diamant)

- Diamant screws must always be used for Diamant, Silentboard or Comfortboard 23 cladding.

Maximum fastener spacings, all board layers fastened to frame with screws

Dimensions in mm

Cladding	1st layer			2nd layer			3rd layer		
	Board layer → vertical	horizontal	Board width →	vertical	horizontal	Board width →	vertical	horizontal	Board width →
	1250	1250 ²⁾	625	1250	1250 ²⁾	625	1250	1250	625
1 layer	250	–	200	–	–	–	–	–	–
2 layers	750	610	600	250	250	200	–	–	–
3 layers	750	–	600	500	–	300	250	–	200 ³⁾



2) System W116.de

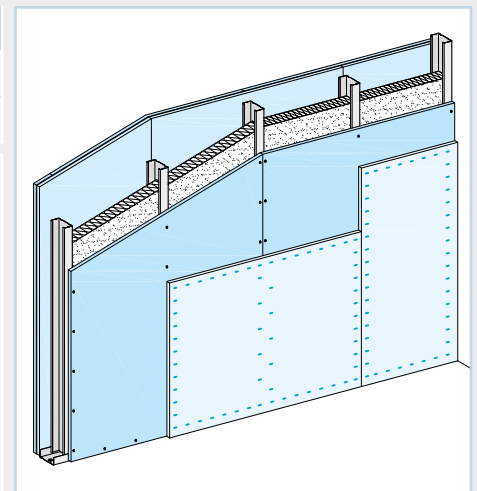
3) Upgrade with Silentboard

- Arrangement of screws for optimum sound insulation with minimum spacing from edge (10 mm edge covered with board liner, 15 mm cut edge).
- Arrange board joint on centre of profile flange.

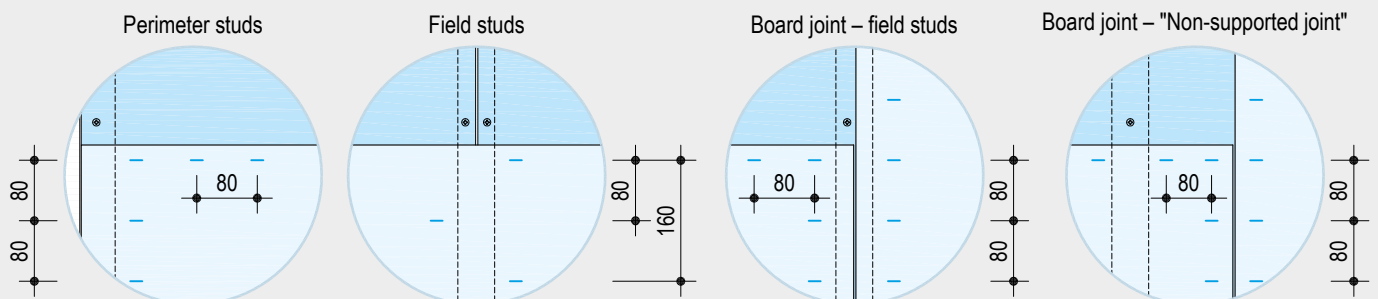
Maximum fastener spacings, uppermost board layer stapled to the board layer below it

Dimensions in mm

Cladding	1st layer	2nd layer	3rd layer
2 layers	250 (screwed)	80 (stapled)	–
3 layers	750 (screwed)	250 (screwed)	80 (stapled)



- Improved sound insulation by stapled top layer
- Staples can only be used exclusively on Diamant
- Vertical board layer; board width 1250 mm
- Lower board layer screw fastened (observe the reduced screw spacing)
- Observe the reduced partition heights (see pages 11 and 13)
- Observe the reduced fixing loads/cantilever load (see pages 40 and 41)
- Do not staple in the studs
- Curved Knauf boards may not be stapled.
- Steel staples compliant to DIN 18182-2: e.g. Expanding staples from Haubold or Poppers-Senco
Staple length = 2 board layers minus 2 mm



Stud partitions - Metal stud frames

Scheme drawings, dimensions in mm

Single metal stud frames
W111.de / W112.de / W113.de

← Knauf stud
CW 50
CW 75
CW 100
CW 125
CW 150

← Knauf UW runner

Double metal stud frames W115.de

← Knauf stud
CW 50
CW 75
CW 100

Decoupled with insulation strips

← Knauf UW runner

Double metal stud frames W116.de

← Knauf stud
CW 50
CW 75
CW 100

Linked with board strips

← Knauf UW runner

Vertical stud extensions

Stud extensions Knauf profiles	Overlap o
CW / UA 50	≥ 500 mm
CW / UA 75	≥ 750 mm
CW / UA 100	≥ 1000 mm
CW / UA 125	≥ 1250 mm
CW / UA 150	≥ 1500 mm

■ Stagger the stud joints vertically (alternating on upper and lower partition half)

■ **Options 1 to 3:**

In overlapping section, rivet, screw or, if possible, crimp connect the studs

■ **Option 4:**

Screw 2x per UA profile with M8 bolts

or self-tapping screws ≥ Ø 4.5 mm

■ Knauf recommendation:

Use floor-to-ceiling height UA profiles

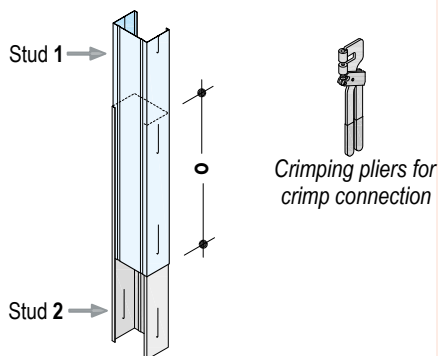
plus Extension to the fire protection certificate of usability

■ Design options 2 to 4

Prior consultation in acc. to page 2 recommended.

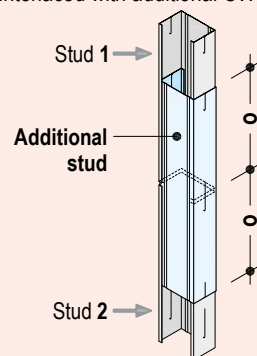
Option 1

2 CW studs interlaced as a box.



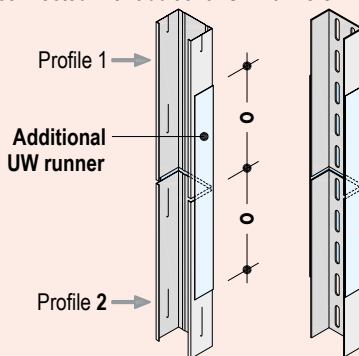
Option 2

2 CW studs butt joint connected, interlaced with additional CW stud.



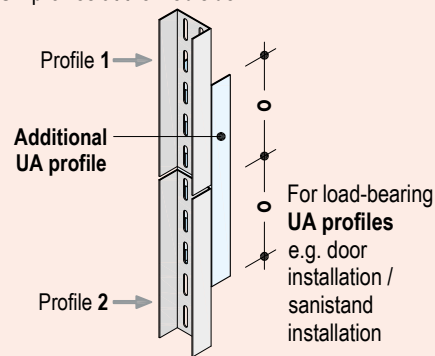
Option 3

2 CW studs or 2 UA profiles butt joint connected, connected with additional UW runners.



Option 4

2 UA profiles butt joint connected with additional UA profiles at the web side.



Web cut-out, on-site

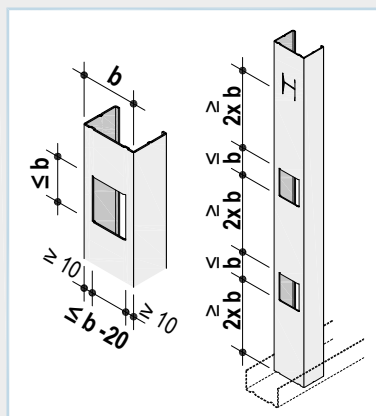
■ **H web cut-outs**

- Web cut-outs: max. 2 per metal stud
- Observe the dimensions in acc. with drawing on right
- Knauf profiles: CW 75 / CW 100 / CW 125 / CW 150
- Cladding thickness per wall side: ≥ 12.5 mm

■ Large number of smaller openings possible on request

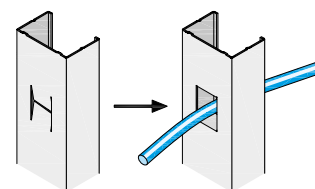
■ The openings can be provided in addition to the usual factory made H punches

■ Web cut-outs for UA profiles on request



H-punches, factory-made

For cable penetrations in Knauf CW studs



Proofs and certificates

Knauf system	Fire protection	Sound insulation	Statics (partition heights)	
			Knauf boards	Diamant
W111.de	ABP P-3310/563/07-MPA BS	Knauf sound insulation proof L 037-01.15	ABP P-1402/354/12-MPA BS	ABP P-1405/928/10-MPA BS
W112.de				
W113.de			DIN 18183-1 and/or Knauf recommendation	Knauf recommendation
W115.de				
W116.de				

Details / notes

- 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 as well as rooms with floor height difference of ≥ 1 m (protection against falling).
- Requirements for the insulation layer: See the specifications for the respective system
- $R_{w,R}$ = calculation value of the weighted apparent sound reduction index without flanking paths
- Sound insulation values only apply in conjunction with Knauf profiles when the recommended screw fastening is observed.
- Reinforcing and supporting components must feature the same fire resistance class as a minimum requirement.
- Constructions acc. to DIN 4102-4 are also possible using Knauf materials

Construction

Knauf Metal Stud Partitions consist of a metal stud frame configured as a single or double frame and both sides with single-layer or multiple-layer cladding made of Knauf boards.

The stud construction is connected all around to the flanking constructional components. Insulation material can be fitted in the partition cavities (prior consultation is recommended with demands made on the fire resistance, see page 2) as well as sanitary or electric built-ins.

Ball impact safety

Ball impact safety is provided with multi-layer cladding.

Movement joints

Movement joints of the main structure should be integrated into the construction of the stud partitions. Movement joints are to be installed every 15 m on continuous partitions.

Notes

Sound insulation

- Avoid air leaks.
- For deflection heads, sealing with permanently elastic sealant material (recommendation: Knauf Insulation LDS Solimur) may be necessary (see detail drawings).

Fire protection

- Cable and pipe penetrations must be implemented in accordance with Knauf Fire Protection folder BS1.de (German only).

Anti-burglary protection

- Should there be demands made on anti-burglary protection with party walls, the System W118.de can be applied, see Brochure ST01.de Knauf Security Engineering (German only).

Installation

Stud frame

- Apply Trennwandkitt acoustical sealant (two strings) or sealing tape to rear side of runners for the connection of flanking constructional components.

In case of sound insulation requirements, seal carefully with Trennwandkitt acoustical sealant according to DIN 4109, supplement 1, chapter 5.2; porous sealant strips such as sealing tape are usually not suitable in this case.

- If a deflection of the ceiling ≥ 10 mm can be expected, install deflection heads.
- Anchor wall perimeter runners to the floor and ceiling. Anchor wall perimeter runners with suitable dowels to flanking walls. Use suitable

spacings and fasteners in accordance with the tables of the corresponding systems.

- Use suitable fasteners.
Solid flanking constructional components: Knauf Drehstiftdübel nailable plugs with masonry or Knauf Deckennagel ceiling steel dowels with reinforced concrete.
Non-solid flanking constructional components: Anchors specially suited for the building material, e.g. Knauf Universalschraube FN multi-purpose screws for wooden substrates, metal stud partitions, etc.
- Place the CW studs into the UW runners arranged along the length and align them.

Cladding

- Fasten the cladding in accordance with the tables on page 5.
- Apply the cladding vertically or horizontally to suit the system. Floor-to-ceiling Knauf boards are preferred for vertical cladding.
- Stagger the board joints according to the installation schemes on page 4.

W111.de Knauf Metal Stud Partitions

Fire protection, sound installation, technical data



Technical and physical building data (Observe the notes/specifications on page 7)

Knauf system	Fire resistance class	Cladding per wall side					Weight Without insulation layer approx. kg/m ²	Wall thickness D mm	Profile Knauf CW Cavity h mm	Sound insulation	
		Knauf Bauplate wallboard	Feuerschutzplatte Knauf Piano	Massivbauplatte solid board	Diamant	Silentboard				Minimum thickness t mm	Insulation layer Minimum thickness mm
Scheme drawings 											
W111.de Knauf Metal Stud Partitions											
Single metal stud frame, single-layer cladding											
	-	■				12.5	22	75	50	40	42
					■	12.5	39				54
	F30	■				12.5	24				43
					■	12.5	30	80			46
	F30				■	15	35				48
	-	■				12.5	22	100	75	60	45
					■	12.5	39				57
	F30	■				12.5	24				46
					■	12.5	30	105			49
	F30				■	15	35				51
	-	■				12.5	22	125	100	80	48
					■	12.5	39				58
	F30	■				12.5	24				49
					■	12.5	30	130			51
	F30				■	15	25				52

- With fire resistance: Apply profile backing to front joints provided that no insulation material is installed
- With ceramic tiles:

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)

- Fire protection requirement: None
- Fire protection permissible: Mineral wool **G**; ≥ 40 mm thick; mineral wool insulation layer to EN 13162; non-combustible
- Sound insulation requirement:

W111.de Knauf Metal Stud Partitions

Partition heights, max. fastener spacings



Maximum permissible partition heights , Installation zones 1 and 2

Knauf profile	Stud spacing a mm	Knauf boards 12.5 mm		Diamant 12.5 mm / 15 mm	
		Without fire protection m	With fire protection m	Without fire protection m	With fire protection m
CW 50	625	3.20 ¹⁾	3.20 ¹⁾	4.00	4.00
	417	3.85	3.85	4.00	4.00
	312.5	4.00	4.00	4.00	4.00
CW 75	625	4.00	4.00	4.75	4.75
	417	4.35	4.35	5.40	5.00
	312.5	4.85	4.85	5.80	5.00
CW 100	625	5.10	5.00	6.55	5.00
	417	5.95	5.00	7.20	5.00
	312.5	6.60	5.00	7.70	5.00
CW 125	625	6.65	5.00	8.30	5.00
	417	7.60	5.00	8.95	5.00
	312.5	8.30	5.00	9.35	5.00
CW 150	625	8.20	5.00	9.65	5.00
	417	9.15	5.00	10.20	5.00
	312.5	9.70	5.00	10.65	5.00

1) Only for installation zone 1

Maximum permissible fastener spacings

Supporting fastening of perimeter runner (UW) connection on basic floor and subceiling				
Partition height m	Knauf Deckennagel ceiling steel dowels (with reinforced concrete)	Knauf Drehstiftdübel nailable plug	Knauf Universalschraube FN multi-purpose screw (with wooden substrates screw-in depth > 24 mm, subceiling)	
	1x mm	1x mm	2x mm	1x mm
Without fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 6.50	1000	500	500	250
> 6.50 to ≤ 12.00 ²⁾	500	–	Verify the stability of the anchoring substrate and select suitable fasteners (for 2 kN/m)	
With fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 5.00	1000	500	500	250

2) Observe max. partition heights

- Constructional anchoring of the wall connection profiles (CW) to the flanking walls at centres of 1000 mm (min. 3 anchoring points).

Reduced maximum permissible spacings with edge fixing on floor constructions

Supporting fastening of perimeter runner (UW) on floor constructions		
Anchoring substrate	Fasteners	Spacing of fasteners
Pre-fab floor screeds	Knauf Befestigungsschraube LG anchor	halved – (multi-purpose screw) compared to above table
Flowing screed	Knauf Drehstiftdübel nailable plug	halved – compared to above table
Wooden planks / floorboards (screw-in depth 15 – 24 mm)	Knauf Universalschraube FN multi-purpose screw	halved – compared to above table

W112.de Knauf Metal Stud Partitions

Fire protection, sound installation, technical data



Technical and physical building data (Observe the notes/specifications on page 7)

Knauf system	Fire resistance class	Cladding per wall side					Weight Without Insulation layer approx. kg/m ²	Wall thickness D mm	Profile Knauf CW Cavity h mm	Sound insulation	
		Knauf Bauplate wallboard	Feuerschutzplatte Knauf Piano	Massivbauplatte solid board	Diamant	Silentboard				Minimum thickness t mm	Insulation layer Minimum thickness mm
Scheme drawings 											
W112.de Knauf Metal Stud Partition											
Single metal stud frame, double-layer cladding											
	F30	■				2x 12.5	40				52
	F90		■			2x 12.5	45	100		40	54
			■			12.5 + 12.5	50		56		
				■		2x 12.5	55		57 / 58 ¹⁾		
				■	■	25 + 12.5	71		62		
					■	12.5 + 12.5	65		63		
					■	2x 12.5	75	100			65
	F30	■				2x 12.5	40				53
	F90		■			2x 12.5	45	125		60	55
			■			12.5 + 12.5	50		57		
				■		2x 12.5	55		59 / 61 ¹⁾		
				■	■	25 + 12.5	71		64		
					■	12.5 + 12.5	65		64		
						■	2x 12.5		75		125
	F30	■				2x 12.5	40				56
	F90		■			2x 12.5	45	150		80	57
			■			12.5 + 12.5	50		60		
				■		2x 12.5	55		61 / 62 ¹⁾		
				■	■	25 + 12.5	71		66		
					■	12.5 + 12.5	65		65		
						■	2x 12.5		75		150

1) Upper board layer stapled

- Always use Diamant as a covering layer with combined cladding
- F60 on request

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

- Fire protection requirement: None
- Fire protection permissible: Mineral wool **G** (mineral wool insulation layer to EN 13162; non-combustible) **plus**
- Sound insulation requirement:
Mineral wool insulation layer acc. to EN 13162; length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

plus Extension to the fire protection certificate of usability

- When applying the insulation layer **G** in conjunction with
 - Partition height > 5.00 m (F90)
 - Cladding with Knauf Bauplatten wallboard
- Prior consultation is recommended acc. to page 2

W112.de Knauf Metal Stud Partitions

Partition heights, max. fastener spacings



Maximum permissible partition heights , Installation zones 1 and 2

Knauf profile	Stud spacing a mm	Knauf boards 2x 12.5 mm			Diamant 2x 12.5 mm / Massivbauplatte solid board 25 mm + Diamant 12.5 mm (all board layers screw fastened to stud frame)	
		Without fire protection m	With fire protection F30 m	F90 m	Without fire protection m	With fire protection F90 m
CW 50	625	4.00	4.00	4.00	4.75	4.75
	417	4.00	4.00	4.00	5.40	5.40
	312.5	4.35	4.35	4.35	5.80	5.80
CW 75	625	5.05	5.00	5.05	7.20	7.00
	417	5.95	5.00	5.95	7.85	7.00
	312.5	6.50	5.00	6.50	8.20	7.00
CW 100	625	7.15	5.00	7.00	9.30	7.00
	417	8.05	5.00	7.00	9.75	7.00
	312.5	8.55	5.00	7.00	10.00	7.00
CW 125	625	9.05	5.00	7.00	10.80	7.00
	417	9.65	5.00	7.00	11.20	7.00
	312.5	10.10	5.00	7.00	11.55	7.00
CW 150	625	10.35	5.00	7.00	12.00	7.00
	417	10.95	5.00	7.00	12.00	7.00
	312.5	11.40	5.00	7.00	12.00	7.00

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

Maximum permissible fastener spacings

Supporting fastening of perimeter runner (UW) connection on basic floor and subceiling

Partition height m	Knauf Deckennagel ceiling steel dowels (with reinforced concrete)	Knauf Drehstiftdübel nailable plug	Knauf Universalschraube FN multi-purpose screw (with wooden substrates screw-in depth > 24 mm, subceiling)	
	1x mm	1x mm	2x mm	1x mm
Without fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 6.50	1000	500	500	250
> 6.50 to ≤ 12.00	500	–	Verify the stability of the anchoring substrate and select suitable fasteners (for 2 kN/m)	
With fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 5.00	1000	500	500	250
> 5.00 to ≤ 6.50	500	500	500	250
> 6.50 to ≤ 7.00	500	–	Verify the stability of the anchoring substrate and select suitable fasteners (for 2 kN/m)	

■ Constructional anchoring of the wall connection profiles (CW) to the flanking walls at centres of 1000 mm (min. 3 anchoring points), for fire protection constructions with partition height > 5.00 m at spacing of max. 500 mm.

Reduced maximum permissible spacings with edge fixing on floor constructions

Supporting fastening of perimeter runner (UW) on floor constructions

Anchoring substrate	Fasteners	Spacing of fasteners
Pre-fab floor screeds	Knauf Befestigungsschraube LG anchor	halved – (multi-purpose screw) compared to above table
Flowing screed	Knauf Drehstiftdübel nailable plug	halved – compared to above table
Wooden planks / floorboards (screw-in depth 15 – 24 mm)	Knauf Universalschraube FN multi-purpose screw	halved – compared to above table

W113.de Knauf Metal Stud Partitions

Fire protection, sound installation, technical data



Technical and physical building data (Observe the notes/specifications on page 7)

Knauf system	Fire resistance class	Cladding per wall side					Weight Without insulation layer approx. kg/m ²	Wall thickness D mm	Profile Knauf CW Cavity h mm	Sound insulation	
		Knauf Bauplate wallboard	Feuerschutzplatte Knauf Piano	Massivbauplatte solid board	Diamant	Silentboard				Insulation layer Minimum thickness mm	Sound reduction index R _{w,R} dB
Scheme drawings 											
W113.de Knauf Metal Stud Partitions											
Single metal stud frame, triple-layer cladding											
	F30	■				3x 12.5	58				56
	F90		■			3x 12.5	65	125	50	40	59
				■		3x 12.5	81				62 / 64 ¹⁾
					■	2x 12.5 + 12.5	101				69
					■	3x 12.5	58				56
	F30	■				3x 12.5	58				56
	F90		■			3x 12.5	65	150	75	60	59
					■	3x 12.5	81				64 / 65 ¹⁾
					■	2x 12.5 + 12.5	101				69
					■	3x 12.5	58				61
	F30	■				3x 12.5	58				61
	F90		■			3x 12.5	65	175	100	80	62
					■	3x 12.5	81				65 / 66 ¹⁾
					■	2x 12.5 + 12.5	101				69
					■	3x 12.5	58				56

1) Upper board layer stapled

- Always use Diamant as a covering layer with combined cladding

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

- Fire protection requirement: None
- Fire protection permissible: Mineral wool **G** (mineral wool insulation layer to EN 13162; non-combustible) **plus**
- Sound insulation requirement:
Mineral wool insulation layer acc. to EN 13162; length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$



Extension to the fire protection certificate of usability

- When applied with insulation layer **G**
Prior consultation is recommended acc. to page 2

W113.de Knauf Metal Stud Partitions

Partition heights, max. fastener spacings



Maximum permissible partition heights, Installation zones 1 and 2

Knauf profile	Stud spacing a mm	Knauf boards 3x 12.5 mm			Diamant 3x 12.5 mm (all board layers screw fastened to stud frame)	
		Without fire protection m	With fire protection F30 m	F90 m	Without fire protection m	With fire protection F90 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 stapled upper board layer: Partition heights acc. to system W112.de

Maximum permissible fastener spacings

Supporting fastening of perimeter runner (UW) connection on basic floor and subceiling

Partition height m	Knauf Deckennaegel ceiling steel dowels (with reinforced concrete)	Knauf Drehstiftdübel nailable plug	Knauf Universalschraube FN multi-purpose screw (with wooden substrates screw-in depth > 24 mm, subceiling)	
	1x mm	1x mm	2x mm	1x mm
Without fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 6.50	1000	500	500	250
> 6.50 to ≤ 12.00	500	–	Verify the stability of the anchoring substrate and select suitable fasteners (for 2 kN/m)	
With fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 5.00	1000	500	500	250
> 5.00 to ≤ 6.50	500	500	500	250
> 6.50 to ≤ 9.00	500	–	Verify the stability of the anchoring substrate and select suitable fasteners (for 2 kN/m)	

- Constructional anchoring of the wall connection profiles (CW) to the flanking walls at centres of 1000 mm (min. 3 anchoring points), for fire protection constructions with partition height > 5.00 m at spacing of max. 500 mm.

Reduced maximum permissible spacings with edge fixing on floor constructions

Supporting fastening of perimeter runner (UW) on floor constructions

Anchoring substrate	Fasteners	Spacing of fasteners
Pre-fab floor screeds	Knauf Befestigungsschraube LG anchor	halved – (multi-purpose screw) compared to above table
Flowing screed	Knauf Drehstiftdübel nailable plug	halved – compared to above table
Wooden planks / floorboards (screw-in depth 15 – 24 mm)	Knauf Universalschraube FN multi-purpose screw	halved – compared to above table

W115.de Knauf Metal Stud Partitions

Fire protection, sound installation, technical data



Technical and physical building data (Observe the notes/specifications on page 7)

Knauf system	Fire resistance class	Cladding per wall side					Weight Without Insulation layer approx. kg/m ²	Wall thickness D mm	Profile Knauf CW Cavity h mm	Sound insulation	
		Knauf Bauplate wallboard	Feuerschutzplatte Knauf Piano	Massivbauplatte solid board	Diamant	Silentboard				Insulation layer Minimum thickness mm	Sound reduction index R _{w,R} dB
Scheme drawings 					Minimum thickness t mm						
W115.de Knauf Metal Stud Partitions											
Double metal stud frame, double-layer cladding											
	F90	■			2x 12.5	47	155	2x 50 105	2x 40	64	
		■			12.5 + 12.5	52				65	
			■			2x 12.5				58	66
				■		12.5 + 12.5				67	71
	F90	■			2x 12.5	47	205	2x 75 155	2x 60	67	
		■			12.5 + 12.5	52				68	
			■			2x 12.5				58	69
	F90	■			2x 12.5	47	255	2x 100 205	2x 80	69	
		■			12.5 + 12.5	52				70	
			■			2x 12.5				58	71

■ Always use Diamant as a covering layer with combined cladding

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

- Fire protection requirement: None
- Fire protection permissible: Mineral wool **G** (mineral wool insulation layer to EN 13162; non-combustible) **plus**
- Sound insulation requirement:
Mineral wool insulation layer acc. to EN 13162; length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

plus Extension to the fire protection certificate of usability

- When applying the insulation layer **G** in conjunction with a partition height > 5.00 m
Prior consultation is recommended acc. to page 2

W115.de Knauf Metal Stud Partitions

Partition heights, max. fastener spacings



Maximum permissible partition heights

Knauf profiles	Stud spacing	Knauf boards 2x 12.5 mm				Diamant 2x 12.5 mm			
		Installation zone 1		Installation zone 2		Installation zone 1		Installation zone 2	
Metal gauge	a	Without fire protection	With fire protection F90	Without fire protection	With fire protection F90	Without fire protection	With fire protection F90	Without fire protection	With fire protection F90
0.6 mm	mm	m	m	m	m	m	m	m	m
Knauf recommendation									
CW 50	625	3.30	3.30	2.80	2.80	3.60	3.60	3.30	3.30
CW 75	625	4.50	4.50	4.00	4.00	5.00	5.00	4.50	4.50
CW 100	625	5.50	5.50	5.00	5.00	6.00	6.00	5.50	5.50
According to DIN 18183-1									
CW 50	625	4.50	4.50	4.00	4.00	X			
CW 75	625	6.00	6.00	5.50	5.50				
CW 100	625	6.50	6.50	6.00	6.00				

Maximum permissible fastener spacings

Supporting fastening per perimeter runner (UW) connection on basic floor and subceiling				
Partition height	Knauf Deckennagel ceiling steel dowels (with reinforced concrete)	Knauf Drehstiftdübel nailable plug	Knauf Universalschraube FN multi-purpose screw (with wooden substrates screw-in depth > 24 mm, subceiling)	
m	1x mm	1x mm	2x mm	1x mm
Without fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 6.50	1000	500	500	250
With fire protection				
≤ 3.00	1000	1000	1000	500
> 3.00 to ≤ 5.00	1000	500	500	250
> 5.00 to ≤ 6.50	500	500	500	250

- Constructional anchoring of the wall connection profiles (CW) to the flanking walls at centres of 1000 mm (min. 3 anchoring points), for fire protection constructions with partition height > 5.00 m at spacing of max. 500 mm.

Reduced maximum permissible spacings with edge fixing on floor constructions

Supporting fastening per perimeter runner (UW) on floor constructions		
Anchoring substrate	Fastener	Fastener spacing
Pre-fab floor screeds	Knauf Befestigungsschraube LG anchor	halved – (multi-purpose screw) compared to above table
Flowing screed	Knauf Drehstiftdübel nailable plug	halved – compared to above table
Wooden planks / floorboards (screw-in depth 15 – 24 mm)	Knauf Universalschraube FN multi-purpose screw	halved – compared to above table

W116.de Knauf Installation Wall

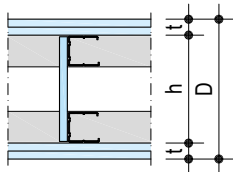
Fire protection, sound installation, technical data



Technical and physical building data (Observe the notes/specifications on page 7)

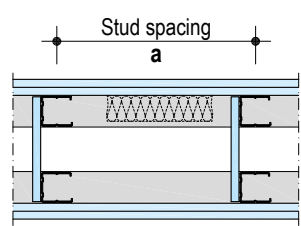
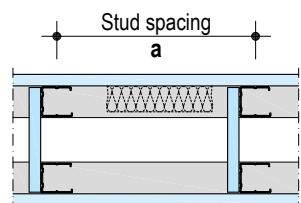
Knauf system	Fire resistance class	Cladding per wall side					Weight Without Insulation layer approx. kg/m ²	Wall thickness D mm	Profile Knauf CW Cavity h mm	Sound insulation	
		Knauf Bauplate wallboard	Feuerschutzplatte Knauf Piano	Massivbauplatte solid board	Diamant	Silentboard				Minimum thickness t mm	Insulation layer Minimum thickness mm

Scheme drawings



W116.de Knauf Installation Wall Double metal stud frame, single/double-layer cladding

Fire resistance class	Knauf Bauplate wallboard	Feuerschutzplatte Knauf Piano	Massivbauplatte solid board	Diamant	Silentboard	Minimum thickness t mm	Weight kg/m ²	Wall thickness D mm	Profile	Sound insulation	
										Insulation layer	Sound reduction index R _{w,R} dB
-						18	45	≥ 141		40	50
						18	45			2x 40	54
F30	■					2x 12.5	43	2x 50 ≥ 105		40	52
F90						2x 12.5	48			≥ 155	
						2x 12.5	59	40	60		
						2x 12.5	59	2x 40	61		



■ Use impregnated boards in areas with moderate levels of humidity (recommendation acc. to DIN 18181).

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

- Fire protection requirement: None
- Fire protection permissible: Mineral wool **G** (mineral wool insulation layer to EN 13162; non-combustible) **plus**
- Sound insulation requirement:
Mineral wool insulation layer acc. to EN 13162; length-related flow resistance acc. to EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

plus Extension to the fire protection certificate of usability

- When applying the insulation layer **G** in conjunction with
 - Partition height > 5.00 m (F90)
 - Cladding with Knauf Bauplatten wallboards

Prior consultation is recommended acc. to page 2

Maximum permissible partition heights

Knauf profiles	Stud spacing	Knauf recommendation		According to DIN 18183-1						
		Diamant 18 mm		Knauf boards 2x 12.5 mm			Installation zone 2			
		Installation zone 1	Installation zone 2	Installation zone 1		Installation zone 2		Without fire protection	With fire protection	
Metal gauge	a			Without fire protection	With fire protection			Without fire protection	With fire protection	
0.6 mm	mm	m	m	m	F30	F90	m	m	F30	F90
					m	m		m	m	m
CW 50	625	4.00	3.50	4.50	4.50	4.50	4.00	4.00	4.00	4.00
CW 75	625	4.00	3.50	6.00	5.00	6.00	5.50	5.00	5.00	5.50
CW 100	625	4.00	3.50	6.50	5.00	6.50	6.00	5.00	5.00	6.00

Maximum permissible fastener spacings

Supporting fastening per perimeter runner (UW) connection on basic floor and subceiling

Partition height	Knauf Deckennagel ceiling steel dowels (with reinforced concrete)	Knauf Drehstiftdübel nailable plug	Knauf Universalschraube FN multi-purpose screw (with wooden substrates screw-in depth > 24 mm, subceiling)	
m	1x mm	1x mm	2x mm	1x mm
Without fire protection				
≤ 6.50	1000	1000	1000	500
With fire protection				
≤ 5.00	1000	1000	1000	500
> 5.00 to ≤ 6.50	500	500	500	500

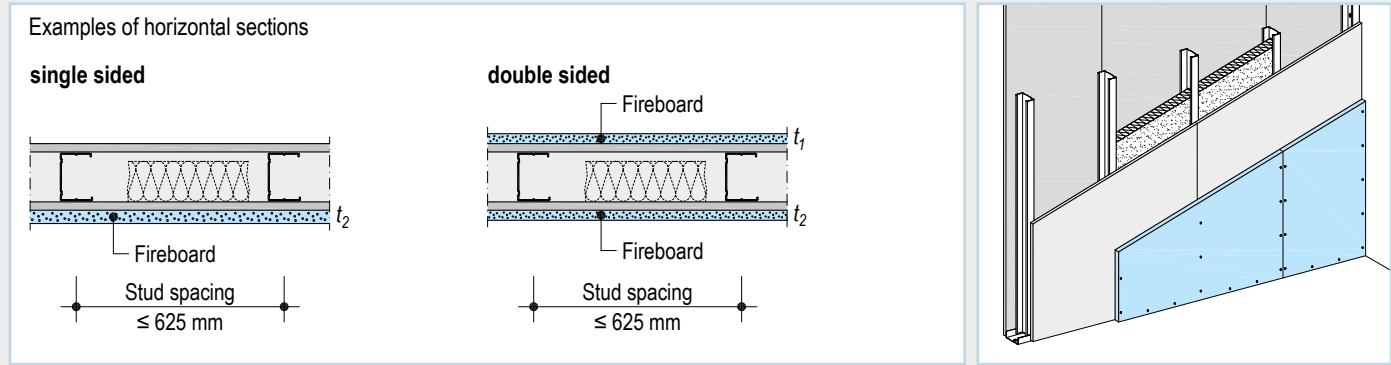
- Constructional anchoring of the wall connection profiles (CW) to the flanking walls at centres of 1000 mm (min. 3 anchoring points), for fire protection constructions with partition height > 5.00 m at spacing of max. 500 mm.

Reduced maximum permissible spacings with edge fixing on floor constructions

Supporting fastening per perimeter runner (UW) on floor constructions

Anchoring substrate	Fastener	Fastener spacing
Pre-fab floor screeds	Knauf Befestigungsschraube LG anchor	halved – (multi-purpose screw) compared to above table
Flowing screed	Knauf Drehstiftdübel nailable plug	halved – compared to above table
Wooden planks / floorboards (screw-in depth 15 – 24 mm)	Knauf Universalschraube FN multi-purpose screw	halved – compared to above table

Fire protection: Upgrading metal stud partitions with Fireboard



- Attachment of additional Fireboard cladding by screwing it onto the stud (alternative fastening method on request).

Existing partition		Upgrade (required cladding, minimum thickness in mm)					
Cladding per wall side mm	Insulation layer	to F30		to F60		to F90	
		Fireboard single sided	Fireboard single sided	Fireboard double sided	Fireboard single sided	Fireboard double sided	
≥ 12.5 GKB		t_2 15	t_2 20	t_1 12.5 + t_2 12.5	t_2 30	t_1 15 + t_2 15	
≥ 2x 12.5 GKB	without or with mineral wool in the cavity	–	–	–	t_2 15	t_1 12.5 + t_2 12.5	
≥ 12.5 GKF ¹⁾		–	t_2 15	t_1 12.5 + t_2 12.5	t_2 20	t_1 12.5 + t_2 12.5	

1) Alternative possible: 1x 12.5 mm gypsum fibre boards or 1x 12.5 mm cementitious boards or 1x 10 mm calcium silicate board

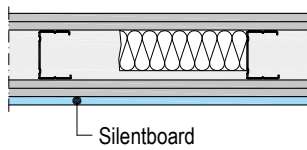
- The existing wall must satisfy the requirements of the DIN 4103-1

Sound insulation: Upgrading metal stud partitions with Silentboard

Examples of horizontal sections

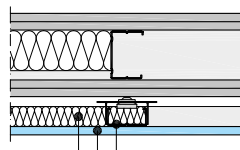
With boards

as additional cladding

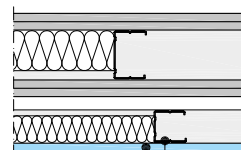


With furring

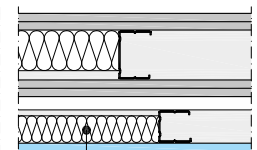
W623.de



W625.de



W626.de



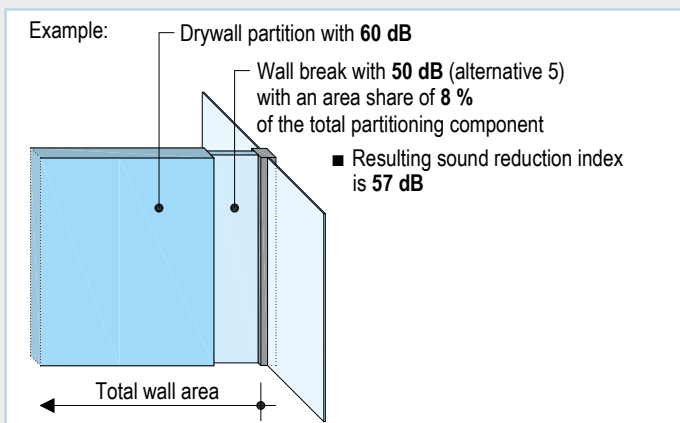
30 mm Akustik-Dämmplatte TP 120 A
 Silentboard
 CD 60/27 with damping universal bracket
 CW stud
 Silentboard
 40 mm Trennwand-Dämmrolle TI 140 T

- Fastening of the Silentboard (horizontal) by screw attachment to the studs
- Insulation materials e.g. from Knauf Insulation
- Application of furring in accordance with System Data Sheet W61.de Knauf Trockenputz und Vorsatzschalen (Drylining and Furring) - German only

Existing partition			Upgrade (required cladding, minimum thickness in mm)					
Cladding per wall side	Profile	Insulation layer	Improvement of sound reduction index after upgrading with boards			Sound reduction of entire construction after upgrading with furring		
			Arrangement of the boards	Silentboard	Improvement $\Delta R_{w,R}$	Arrangement of the furring	Silentboard	Sound reduction index $R_{w,R}$
mm		mm						
2x 12.5 GKB	CW 75	60		12.5	+ 5 dB	W623.de	12.5	62 dB
				2x 12.5	+ 7 dB	W625.de	12.5	65 dB
				12.5 + 12.5	+ 9 dB	W626.de	2x 12.5	70 dB
			By fixing boards with Gypsum Board Screws, further improvement in the sound insulation is possible. Values on request				W626.de + W623.de/ W625.de	2x 12.5 + 12.5

Wall breaks with a length of 625 mm

Alternatives	Wall break Design	Sound reduction index $R_{w,R}$ dB	Partition types											
			Sound reduction index			Drywall partition with 50 dB			Drywall partition with 60 dB			Drywall partition with 65 dB		
See page 21 for corresponding drawings			Resulting sound reduction index $R_{w,R}$ in dB											
			Area share of the wall break											
			8 %	14 %	25 %	8 %	14 %	25 %	8 %	14 %	25 %	8 %	14 %	25 %
1	<ul style="list-style-type: none"> 1x 15 mm Diamant on both sides 20 mm mineral wool TP 120 A Connection "Post" 2x L-angle 13/30/08 Connection "Wall" 2x L-angle 13/30/08 Wall break thickness 50 mm 	43	48	47	46	53	50	48	53	50	48	54	51	48
2	<ul style="list-style-type: none"> 1x 12.5 mm Silentboard on both sides 12 mm mineral wool TPE 12-2 Connection "Post" 2x L-angle 13/30/08 Connection "Wall" 2x L-angle 13/30/08 Wall break thickness 38 mm 	44	49	48	47	53	51	49	54	52	49	54	52	49
3	<ul style="list-style-type: none"> 1x 15 mm Fireboard (cover layer) + 2 mm galvanized sheet metal on both sides 12 mm mineral wool TPE 12-2 Connection "Post" U profile 18/30/08 Connection "Wall" 2x L-angle 13/30/08 Wall break thickness 48 mm 	48	49	49	49	56	55	53	58	55	53	58	56	53
4	<ul style="list-style-type: none"> 1x 12.5 mm Silentboard on both sides 20 mm mineral wool TP 120 A Connection "Post" 2x L-angle 13/30/08 Connection "Wall" 2x L-angle 13/30/08 Wall break thickness 47 mm 	48	49	49	49	56	55	53	58	55	53	58	56	53
5	<ul style="list-style-type: none"> 10 mm Diamant (cover layer) + 12.5 mm Silentboard on both sides 30 mm mineral wool TP 120 A Connection "Post" UD profile 28/27 Connection "Wall" UD profile 28/27 Wall break thickness 73 mm 	50	49	49	49	57	56	54	59	57	55	60	58	55
6	<ul style="list-style-type: none"> 1x 12.5 mm Silentboard (cover layer) + 2 mm galvanized sheet metal on both sides 20 mm mineral wool TP 120 A Connection "Post" 2x L-angle 13/30/08 Connection "Wall" 2x L-angle 13/30/08 Wall break thickness 47 mm 	54	50	50	50	59	58	57	62	60	59	63	61	59

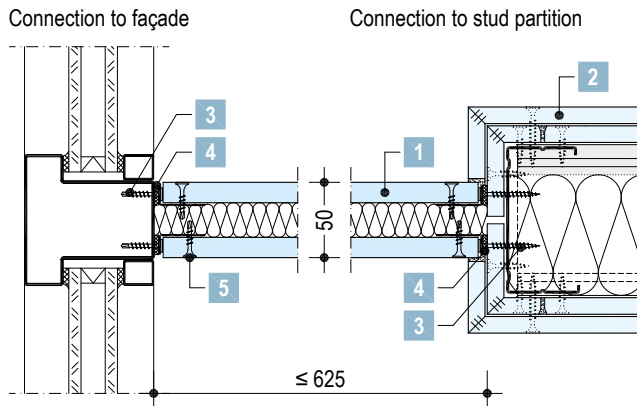


- Sound insulation proof: L 038-07.14
- The specifications in the table apply for wall breaks with a width of 625 mm and the specified area share.
- Interpolation between the area shares is permissible.
- The specifications for wall breaks with a width of 312.5 mm or the calculation with divergent area shares, refer to the folder Sound insulation and room acoustics with Knauf (German only).
- See page 30 with demands made on the fire resistance.

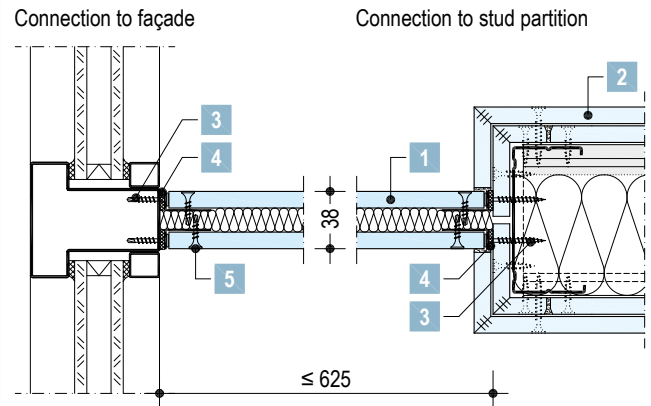
Details, scale 1:5

Horizontal sections, dimensions in mm

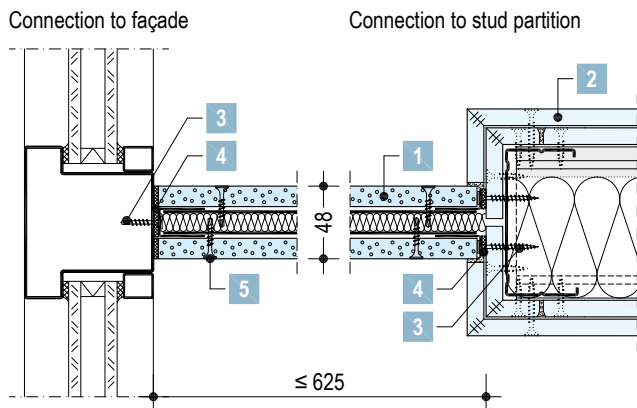
Alternative 1



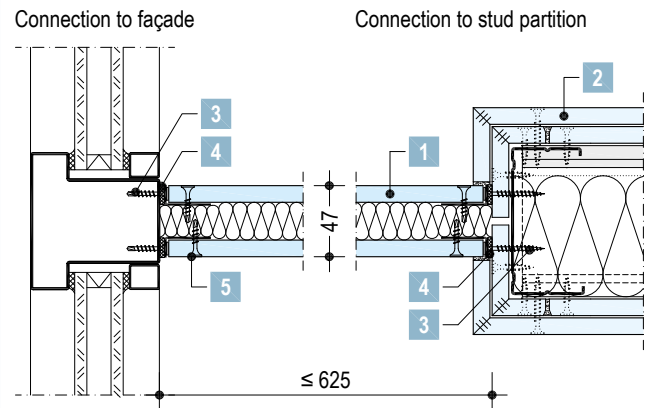
Alternative 2



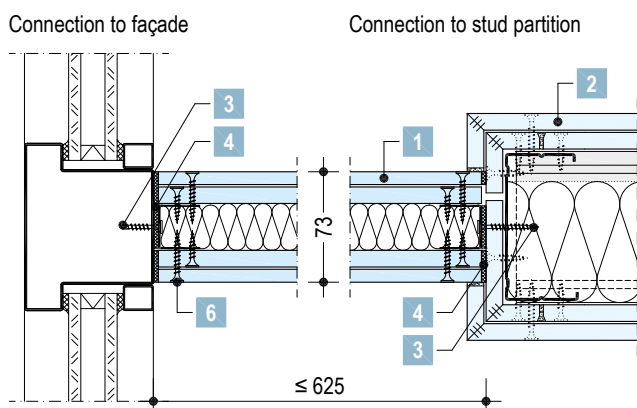
Alternative 3



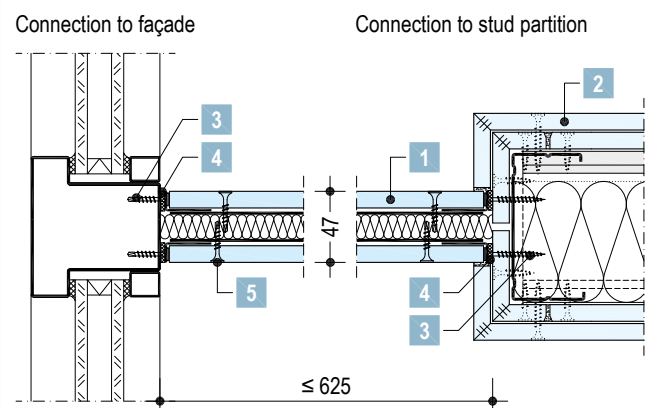
Alternative 4



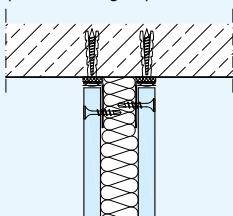
Alternative 5



Alternative 6



- Partition height ≤ 4 m (larger partition heights on request)
- No vertical board joints are permissible
- Maximum spacings of the fasteners for perimeter runners (U / UD / angles) on the connection to the floor and ceiling: ≤ 500 mm



Legend

- 1 Wall breaks, see page 20 for design
- 2 Metal stud partitions with joint section
- 3 Suitable fasteners: Spacing ≤ 500 mm
- 4 Suitable sealing, e.g. Trennwandkitt acoustical sealant
- 5 Schnellbauschraube TB drywall screw
- 6 Schnellbauschraube TN drywall screw

Connection of "lightweight" partitions to fire protection classified ceilings

Scheme drawings

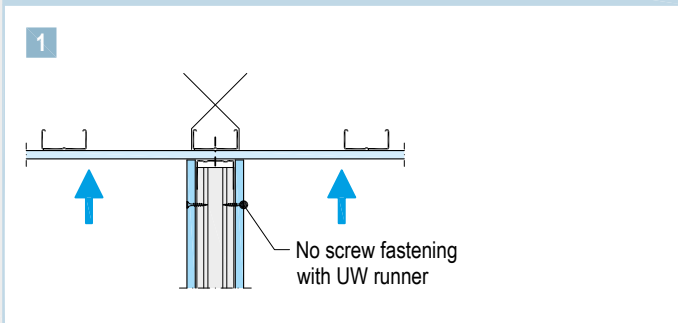
- Partitions may only be connected to fire protection classified ceiling systems (suspended ceilings), if you can ensure in the event of a fire when the partition is destroyed prematurely, that the remains of the partitions may fall without causing additional loading to the ceiling.
- In the case that a partition with fire protection classification is connected to a suspended ceiling, the suspended ceiling alone must feature at least the same fire protection classification.
- Horizontal reinforcement of the suspended ceiling (max. 15 m x 15 m ceiling field size) or transfer of the load into the flanking components is necessary.
- The following connection configurations are possible (Further connections or detail designs can be found on page 35 or on request).

Knauf partition systems	Knauf ceiling systems		Suspended ceilings in conjunction with basic ceilings of type I - IV
	Suspended ceilings with a fire rating solely for fire exposure from below	fire exposure from above (plenum)	
Without fire protection	1	2	3a
Partition fire resistance class less than ceiling	1	2	3b
Partition fire resistance class equal to ceiling	1	2	3c

Suspended ceilings with a sole fire resistance class

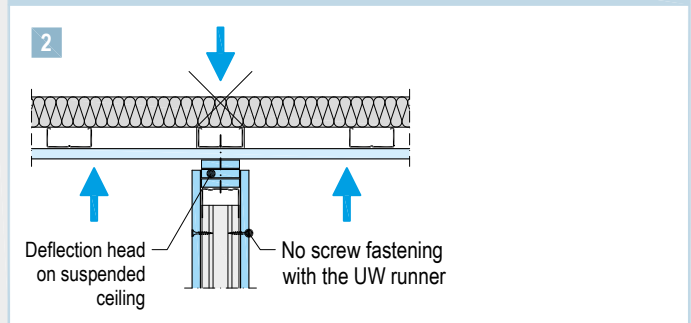
Fire exposure from below

On suspended ceilings with protection **from below**, use the ceiling connection without screw fastening with the UW runner, but with the cladding connected to the suspended ceiling.



Fire exposure from above (plenum)

On suspended ceilings with protection **from below and above / from above**, use a deflection head in the standard design with movement play of at least 15 mm.



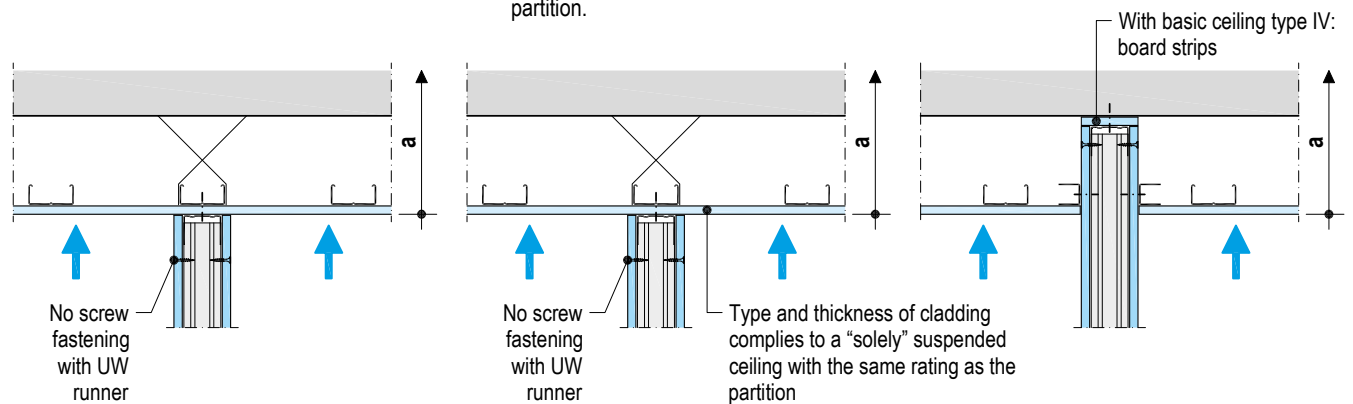
Suspended ceilings in conjunction with basic ceilings of types I - IV

The stated fire rating only applies for the entire ceiling system (a) with suspended ceilings in conjunction with basic ceilings of types I - IV

3a Use ceiling connection of partitions without fire protection without screw fastening to the UW runner.

3b If you fasten partitions with fire protection ratings to the suspended ceiling, the rating of the suspended ceiling must be at least that of the partition.

3c Partitions with the same fire protection rating as the entire ceiling system (a) must be attached to the basic ceiling.



Partition without fire protection

Partition with fire protection

Partition with fire protection

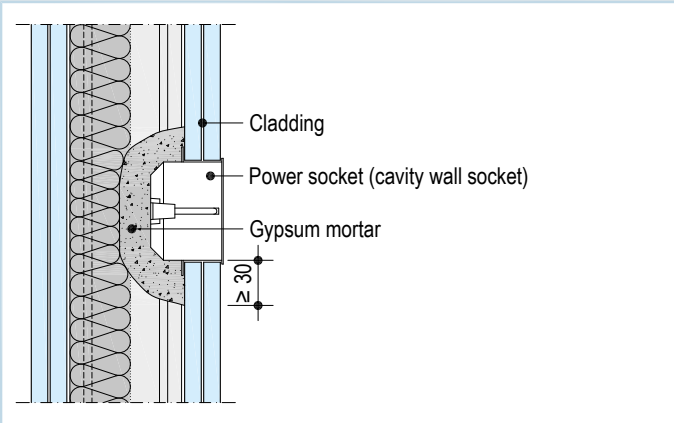
With connection components of combustible building materials, perimeter runners (UW) must be integrated into the wall cladding thickness with gypsum boards.

Installation of power sockets in Knauf metal stud partitions with fire protection ratings

Scheme drawings, dimensions in mm

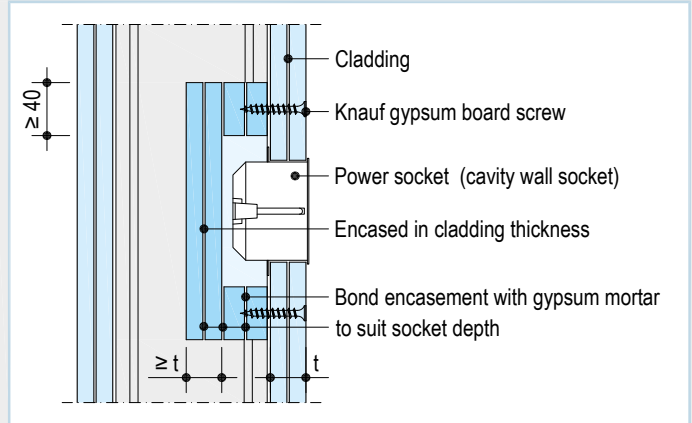
- Power sockets, switch sockets, splitter sockets, etc. may be installed at any position with Knauf partitions, except not directly opposite one another.
- The entry of single electrical cables is permissible. The remaining openings must be sealed with gypsum mortar.
- Insulation layers required for fire protection reasons shall be retained, however, they may be compressed to a thickness of ≥ 30 mm.

With gypsum mortar



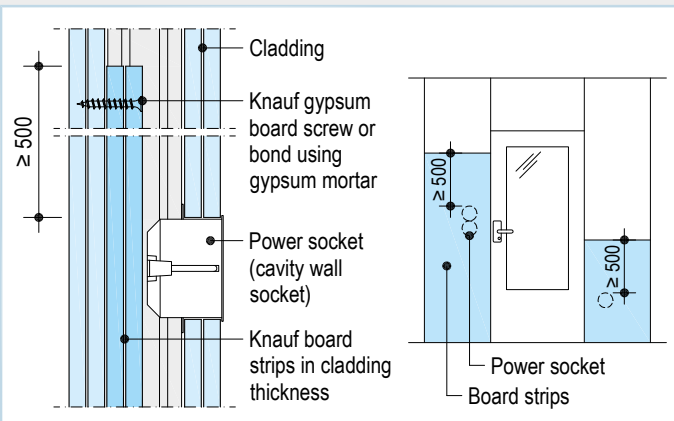
- Enclose power sockets in gypsum mortar (gypsum bed ≥ 30 mm thick).

With encasing using boards



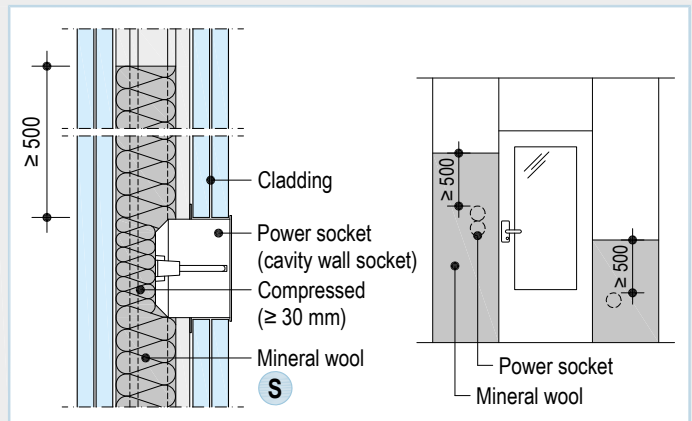
- Enclose power socket with gypsum boards (\geq thickness t of the weakened cladding layer).

With board strips (only for single metal stud partitions)



- Application of board strips with the same thickness as the cladding (glue to rear of board or fasten with gypsum board screws).
- The board strips must fully cover the following area: Up to min. 500 mm above the highest power socket, down to the floor and laterally to the next studs on each side.

With mineral wool (only for single metal stud partitions)



- Fill mineral wool cavity with mineral wool **S** secured against sliding.
- The mineral wool must fully cover the following area: Up to min. 500 mm above the highest power socket, down to the floor and laterally to the next studs on each side.
- The mineral wool area weight must be at least as follows:
 - F30: $\geq 1.2 \text{ kg/m}^2$** (e.g. 40 mm x 30 kg/m³)
 - F60: $\geq 1.6 \text{ kg/m}^2$** (e.g. 40 mm x 40 kg/m³)
 - F90: $\geq 2.4 \text{ kg/m}^2$** (e.g. 60 mm x 40 kg/m³)
- Compression of the mineral wool insulation layer up to a thickness of ≥ 30 mm is permissible.
- Mineral wool insulation layer acc. to EN 13162;
 - S** Building material class A; melting point ≥ 1000 °C acc. to DIN 4102-17 (e.g. insulation from Knauf insulation)

Notes for avoidance of performance losses in noise reduction measures:

- Avoid rigid connections with the opposite partition cladding
- On partitions with sound insulation up to R_w 60 dB:
 - Do not install power sockets opposite one another for each panel section
 - Seal any remaining openings after installation of the sockets
- Solutions for partitions with sound insulation exceeding R_w 60 dB or for sockets positioned opposite one another on request

► For access panel installation see Product Data Sheets for Knauf alutop Access Panels

► Solutions for cable and pipe penetrations, see BS1 Brandschutz-Ordner, fire protection with Knauf (German only)

► Solutions for power sockets located opposite one another: see e.g. KAISER GmbH & Co. KG (available at: www.kaiser-elektro.de)

W111.de Knauf Metal Stud Partitions

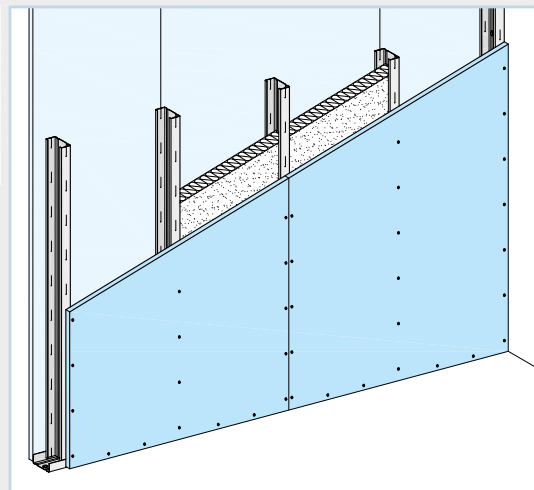
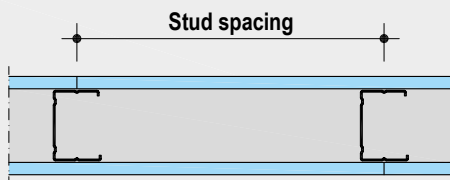
Single metal stud frame, single-layer cladding



Cladding installation

Board position	Board width	Knauf boards
horizontal	625 mm	Silentboard
vertical	1250 mm	Wallboard / Feuerschutzplatte Knauf Piano fire-resistant board / Diamant

Example: vertical cladding

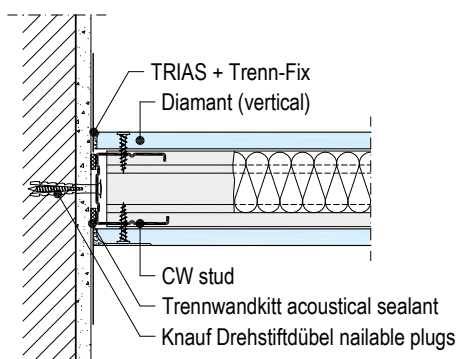


Details scale 1:5

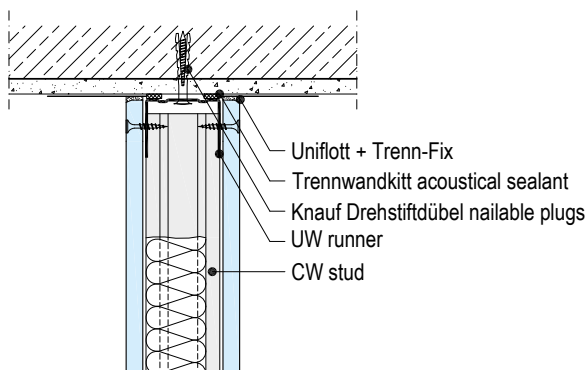
Horizontal sections, examples

Vertical sections, examples

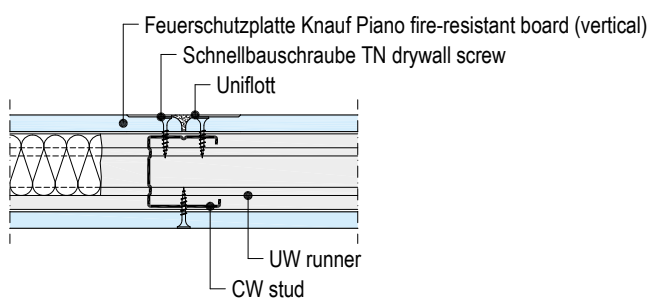
W111.de-A1 Connection to solid wall



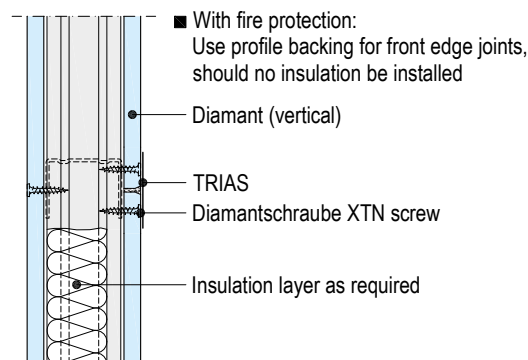
W111.de-VO1 Connection to basic ceiling



W111.de-B1 Board joint

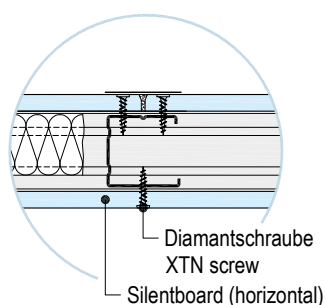


W111.de-VM1 Board joint



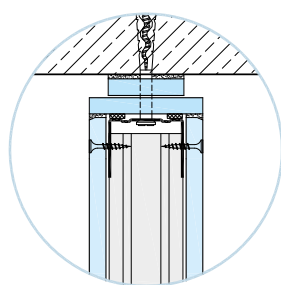
Board joint

■ without fire protection

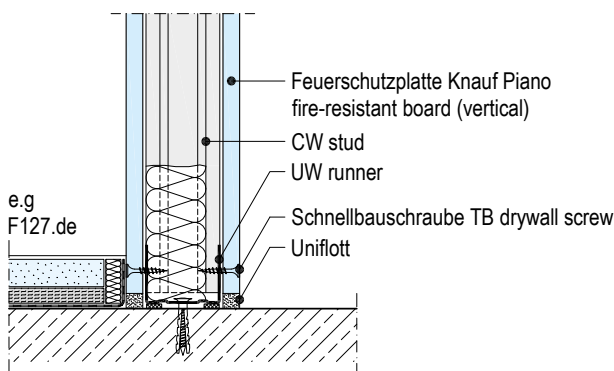


Ceiling connection with shadow gap

■ without fire protection



W111.de-VU1 Connection to basic floor



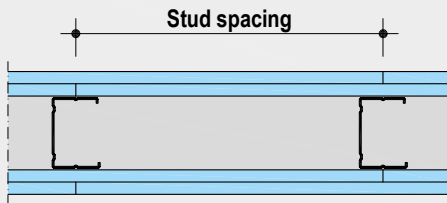
W112.de Knauf Metal Stud Partitions

Single metal stud frame, double-layer cladding

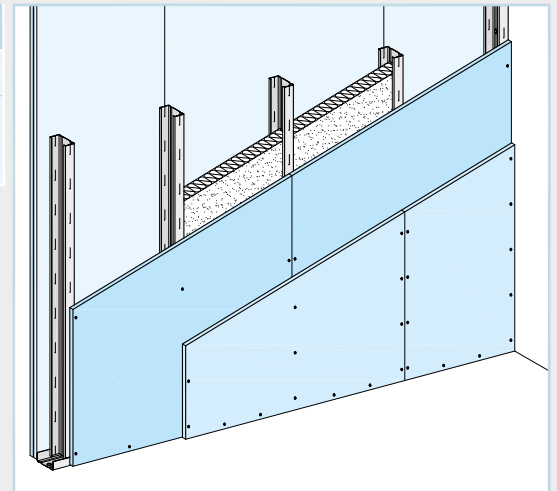


Cladding installation

Board position	Board width	Knauf boards
horizontal	625 mm	Massivbauplatte solid board / Silentboard
vertical	1250 mm	Wallboard / Feuerschutzplatte Knauf Piano fire-resistant board / Diamant



Example: vertical cladding

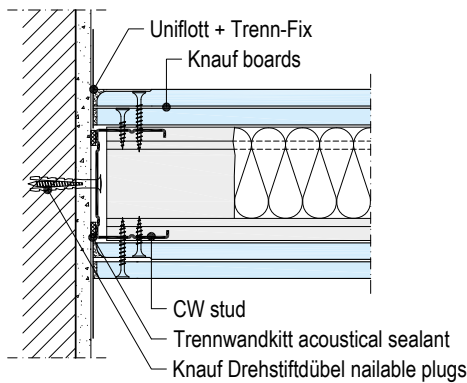


Details scale 1:5

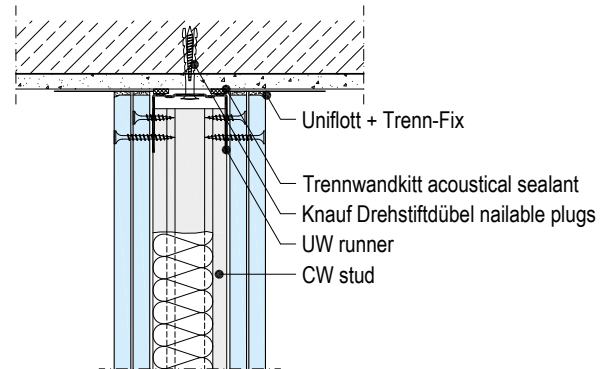
Horizontal sections, examples

Vertical sections, examples

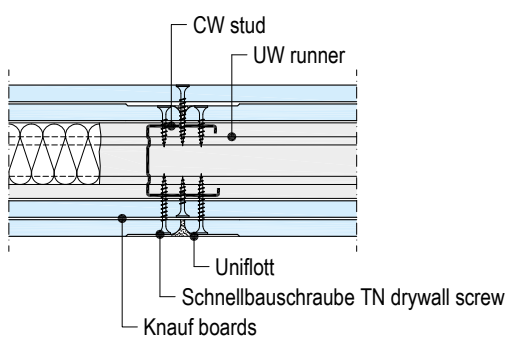
W112-A1 Connection to solid wall



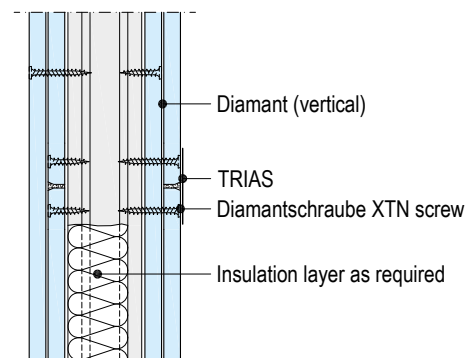
W112.de-VO1 Connection to basic ceiling



W112.de-B1 Board joint



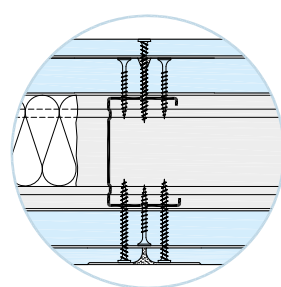
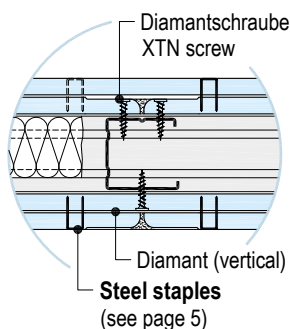
W112.de-VM1 Board joint



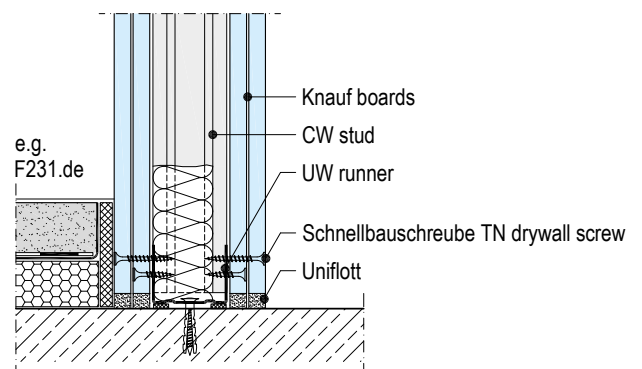
Board joint

■ Top board layer stapled

■ Cladding 25 mm + 12.5 mm



W112.de-VU1 Connection to basic ceiling



W113.de Knauf Metal Stud Partitions

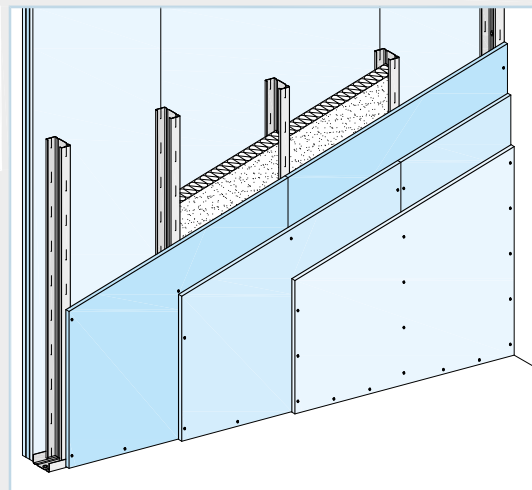
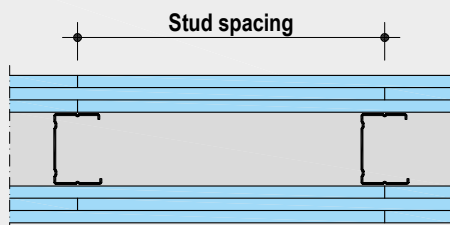
Single metal stud frame, triple-layer cladding



Cladding installation

Board position	Board width	Knauf boards
horizontal	625 mm	Silentboard
vertical	1250 mm	Wallboard / Feuerschutzplatte Knauf Piano fire-resistant board / Diamant

Example: vertical cladding

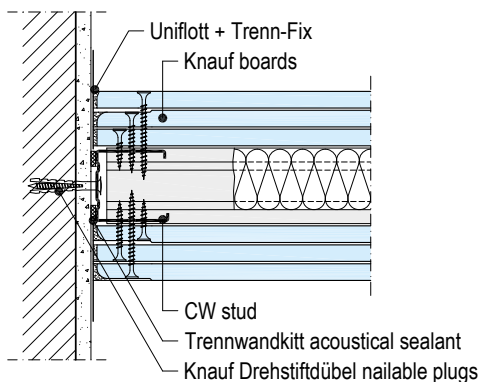


Details scale 1:5

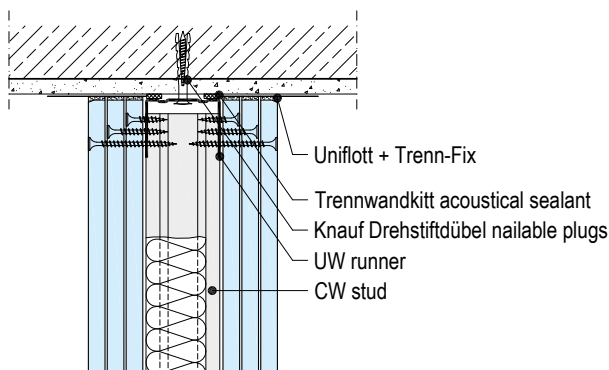
Horizontal sections, examples

Vertical sections, examples

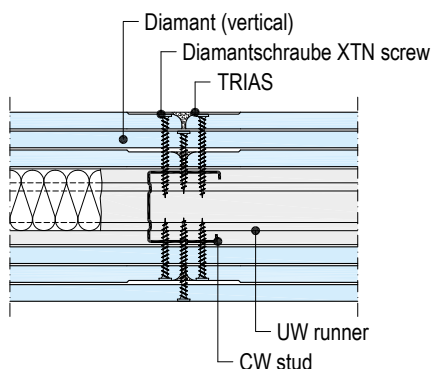
W113.de-A1 Connection to solid wall



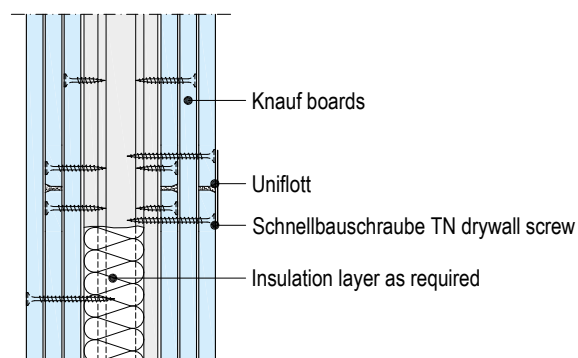
W113.de-VO1 Connection to basic ceiling



W113.de-B1 Board joint

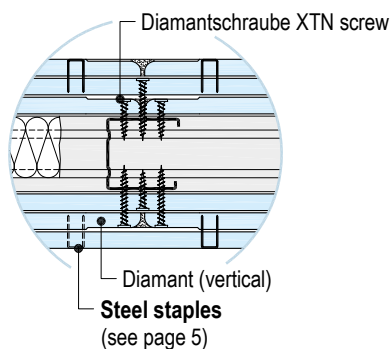


W113.de-VM1 Board joint

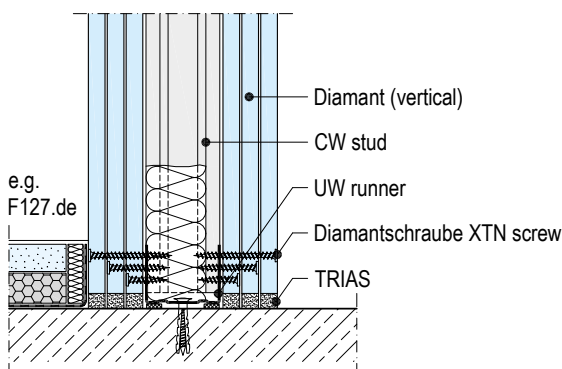


Board joint

■ Top board layer stapled



W113.de-VU1 Connection to basic floor



W115.de Knauf Metal Stud Partitions

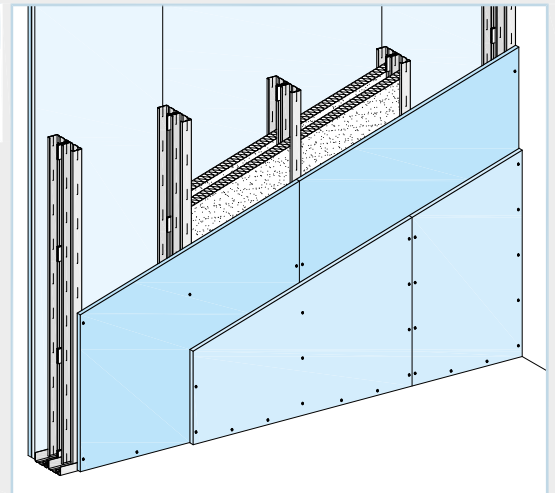
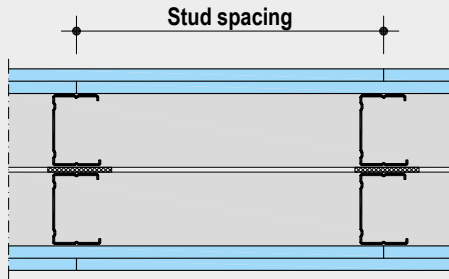
Double metal stud frame, double-layer cladding



Cladding installation

Example: vertical cladding

Board position	Board width	Knauf boards
horizontal	625 mm	Silentboard
vertical	1250 mm	Feuerschutzplatte Knauf Piano fire-resistant board / Diamant

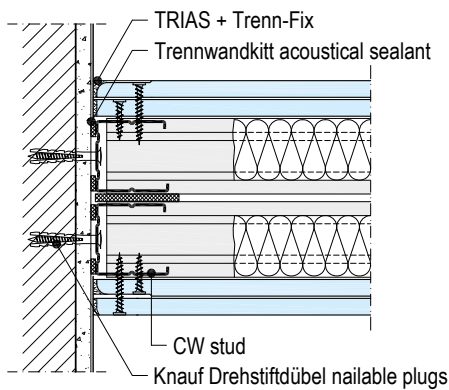


Details scale 1:5

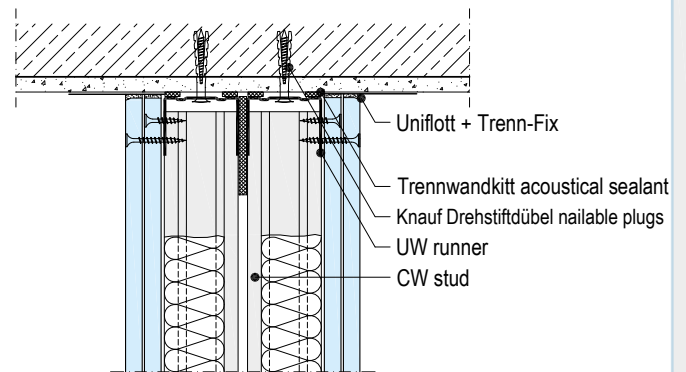
Horizontal sections, examples

Vertical sections, examples

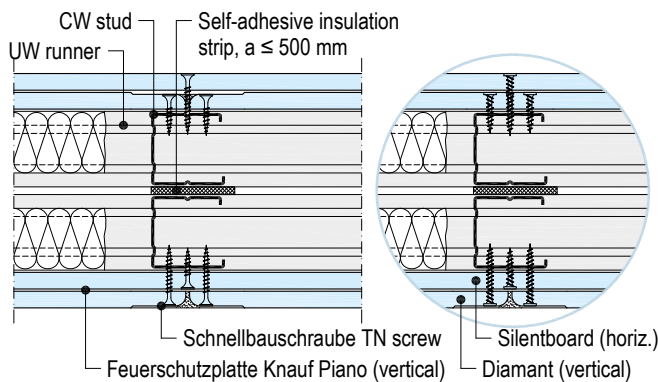
W115.de-A1 Connection to solid wall



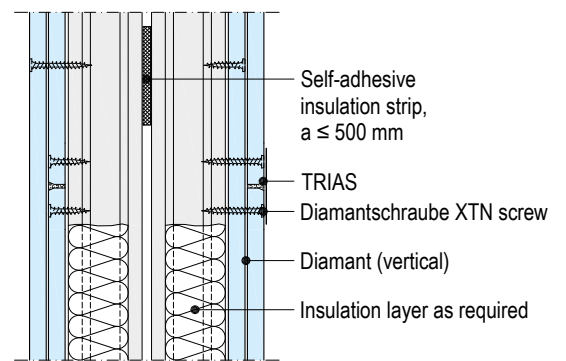
W115.de-VO1 Connection to basic ceiling



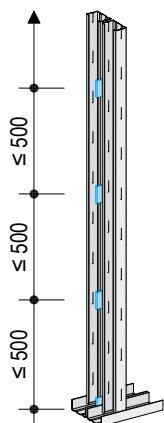
W115.de-B1 Board joint



W115.de-VM1 Board joint



Scheme drawing, dimensions in mm

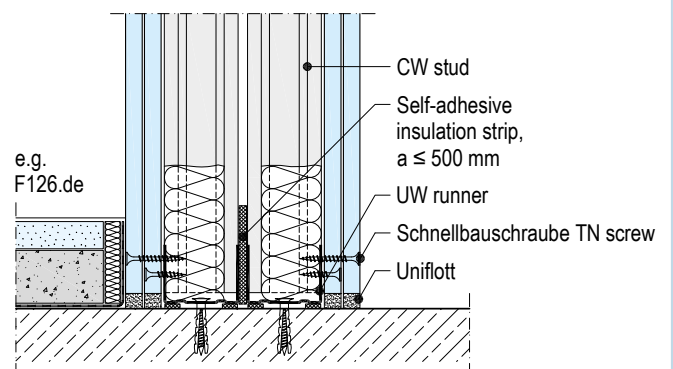


Decoupling

using self-adhesive insulation strips

- On entire wall height, spaced at ≤ 500 mm

W115.de-VU1 Connection to basic floor



W116.de Knauf Installation Wall

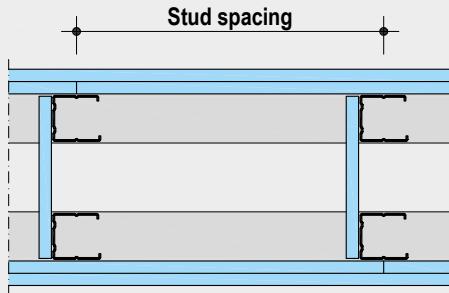
Double metal stud frame, single/double-layer cladding



Cladding installation

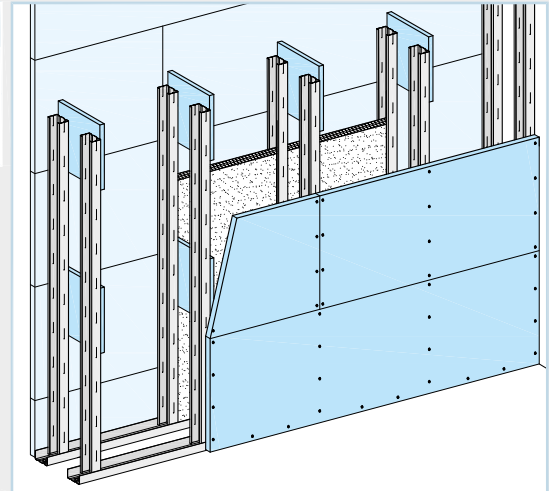
Board position	Board width	Knauf boards
horizontal	625 mm	Diamant GKFI 18
horizontal	1250 mm	Wallboard / Feuerschutzplatte Knauf Piano fire-resistant board / Diamant GKFI 12.5

Example: Diamant GKFI 18, horizontal cladding



■ For installation, for example, of a WC sanistand, UA profiles are required for fixing

► Refer also to System Data Sheet W21.de Knauf Sanitär-Einbauteile sanitary built-ins (German only)

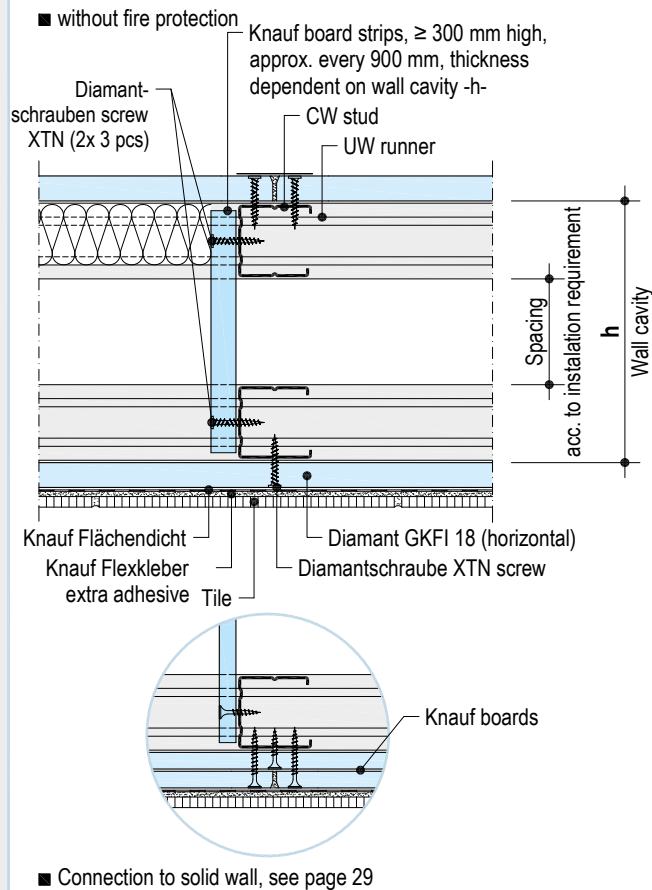


Details scale 1:5

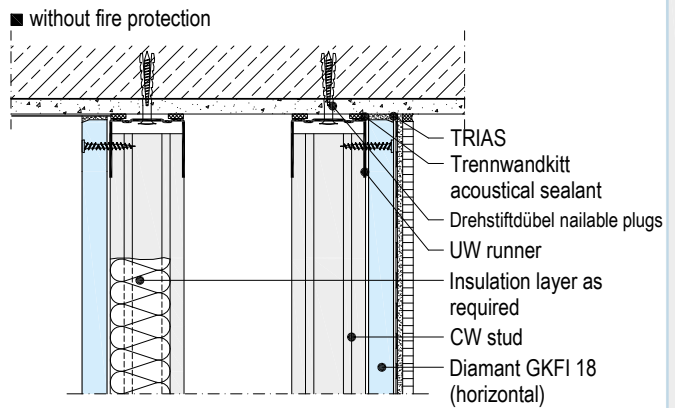
Horizontal sections, examples

Vertical sections, examples

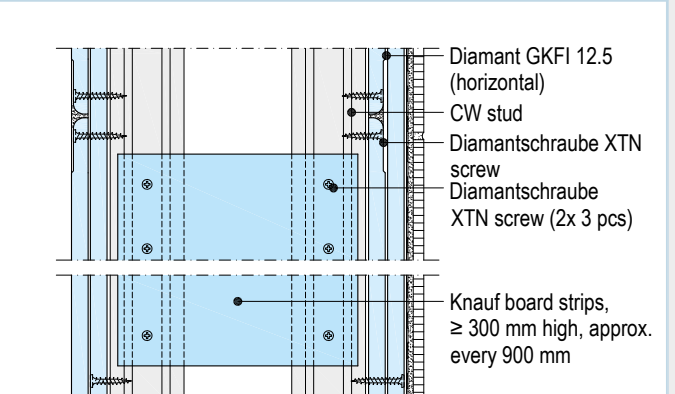
W116.de-B10 Board joint



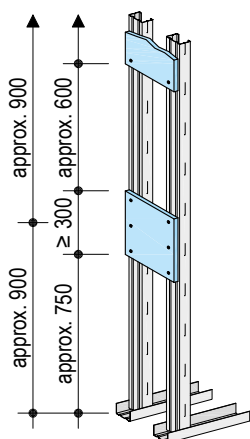
W116.de-VO10 Connection to basic ceiling



W116.de-VM1 Board joint



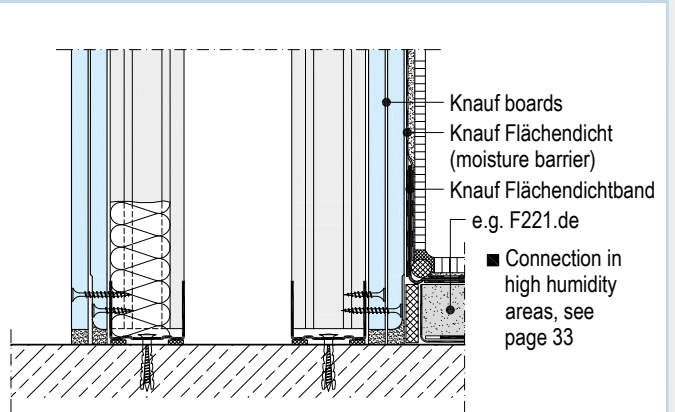
Scheme drawing, dimensions in mm



Linking

- with Knauf board strips
- **≥ 300 mm high**
- **Thickness dependent on wall cavity -h**
- h ≤ 300 mm:
Thickness: ≥ 12.5 mm Knauf boards
- h > 300 mm to ≤ 500 mm:
Thickness: ≥ 20 mm Knauf boards / ≥ 18 mm Diamant
- (with double-layer linking:
individual board thickness ≥ 12.5 mm)
- **On entire wall height,**
at spacings approx. every 900 mm

W116.de-VU1 Connection to basic floor



W11.de Knauf Metal Stud Partitions

Connection to solid walls, wall breaks, detached wall ends, corners

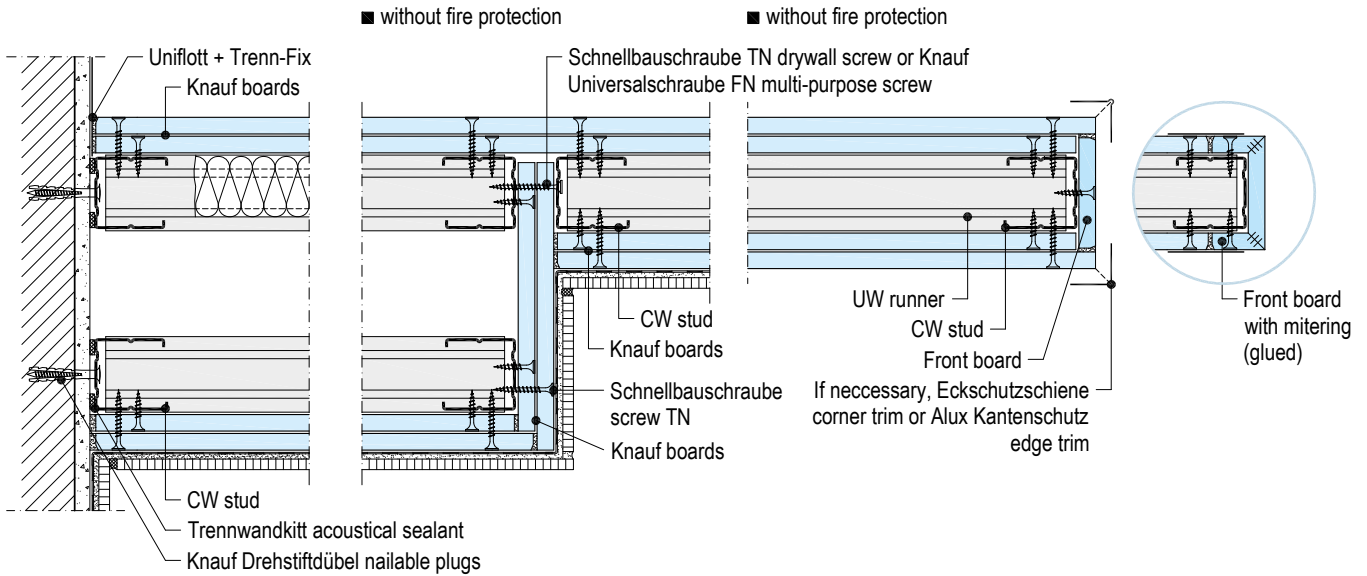


Details scale 1:5

Horizontal sections, examples

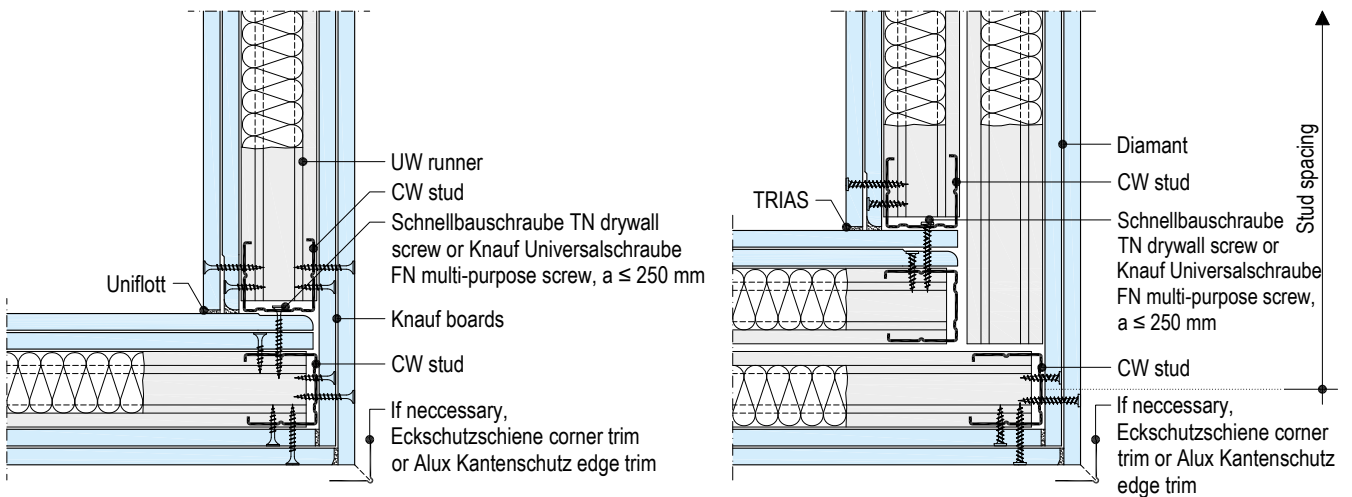
W116.de-A1 Connection to solid wall **W116.de-D1 Wall breaks**

W112.de-END1 Detached end wall



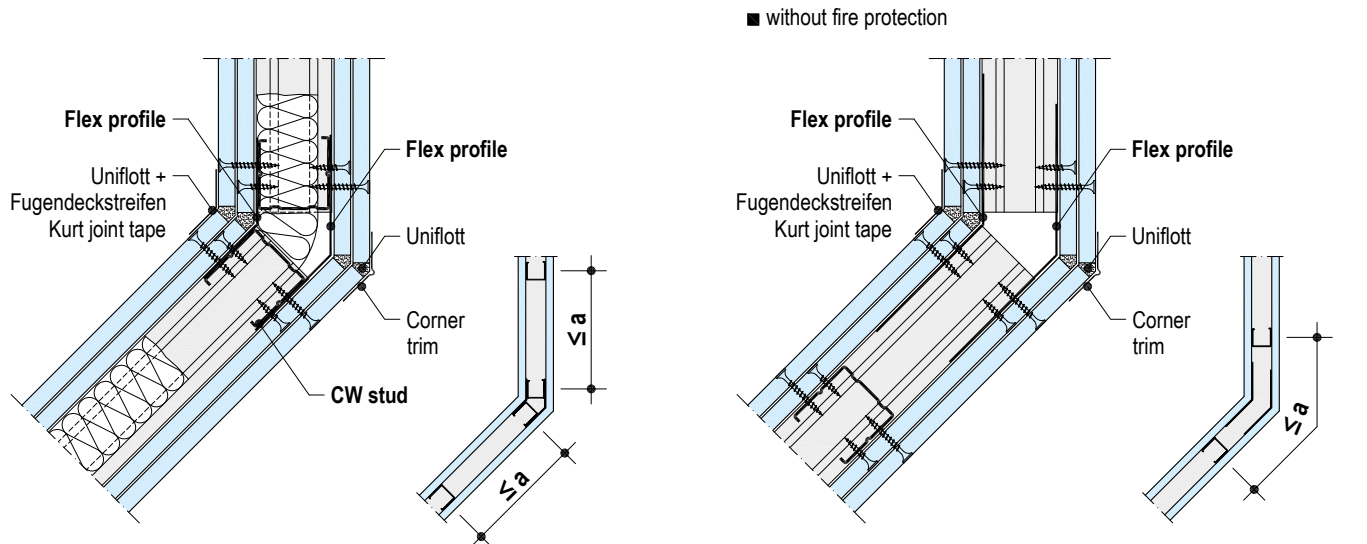
W112.de-D1 Corner

W115.de-D1 Corner



W112.de-D2 Corner – CW studs + flexible corner profiles

W112.de-D3 Corner – Flexible corner profiles



■ a = stud spacing

■ Installation aid: Connect flex profiles by crimping to the CW studs or UW runners

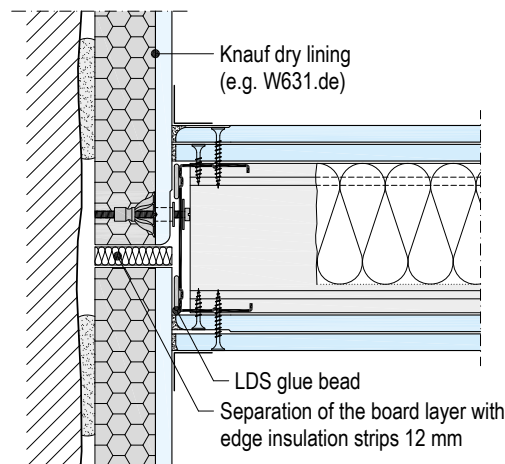
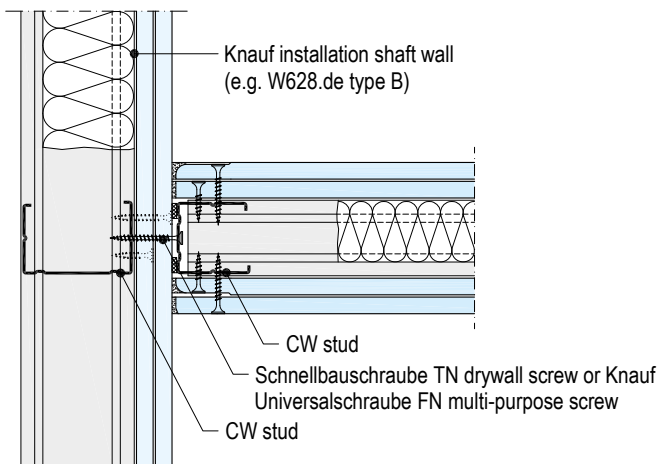
Details scale 1:5

Horizontal sections, examples, dimensions in mm

W112.de-A7 Connection to installation shaft wall

W112.de-A8 Connection to dry lining

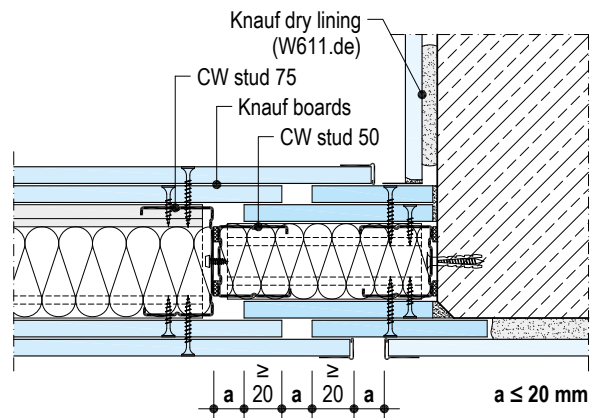
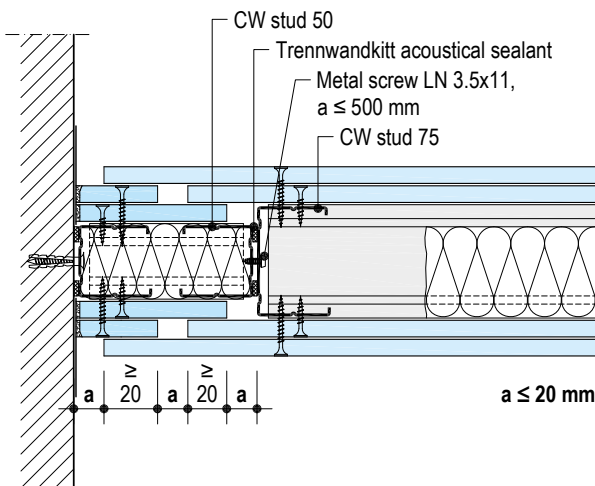
■ without fire protection



plus Extension to the fire protection certificate of usability
Prior consultation is recommended acc. to page 2.

W112.de-A9 Connection to solid wall, floating

W112.de-A3 Connection to solid components, floating

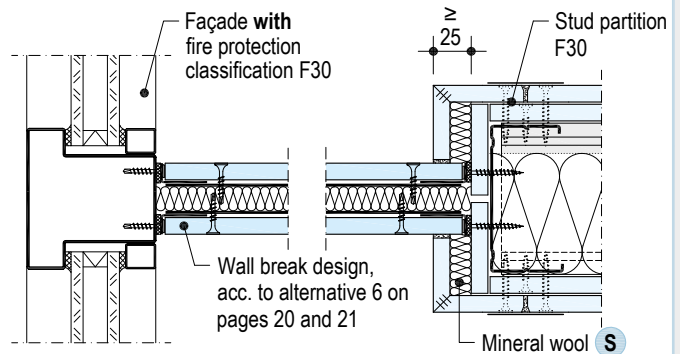
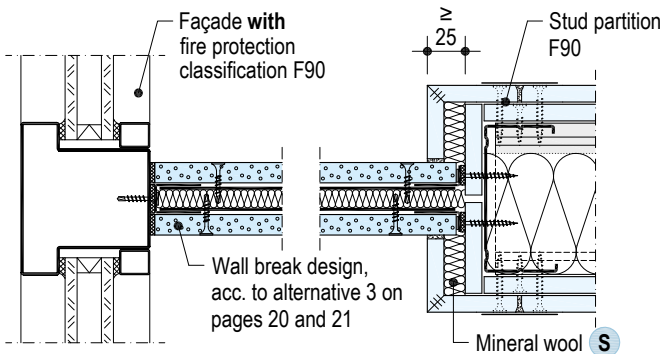


Wall breaks, fire protection F90

Sound reduction index acc. to alternative 3 on page 20

Wall breaks, fire protection F30

Sound reduction index acc. to alternative 6 on page 20



plus Extension to the fire protection certificate of usability
Prior consultation is recommended acc. to page 2.

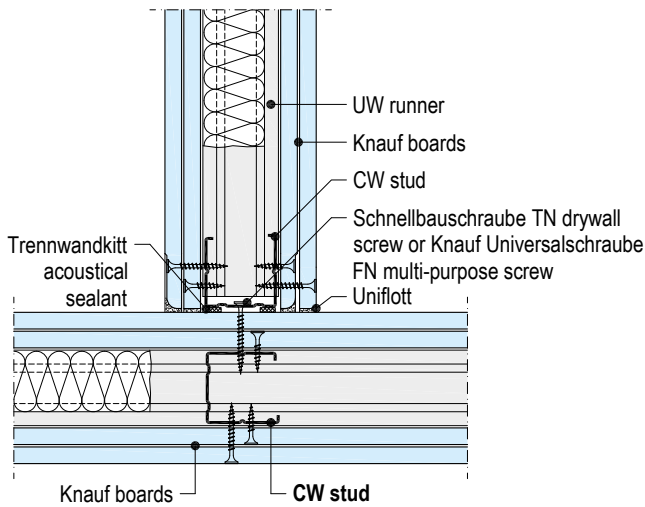
plus Extension to the fire protection certificate of usability
Prior consultation is recommended acc. to page 2.

- Connection to façade/stud partition in accordance with the details above.
Connection to floor/ceiling and design of the wall break in acc. to alternative 3 (F90) or alternative 6 (F30) on pages 20 and 21.
- Mineral wool insulation layer acc. to EN 13162: **S** non-combustible; melting point ≥ 1000 °C acc. to DIN 4102-17; (e.g. Knauf Insulation TPE 12-2)
- If necessary, additional measures to cover the connection joint may be required (border profile, corner trim or similar)
- Connection to façade **without** fire protection classification on request

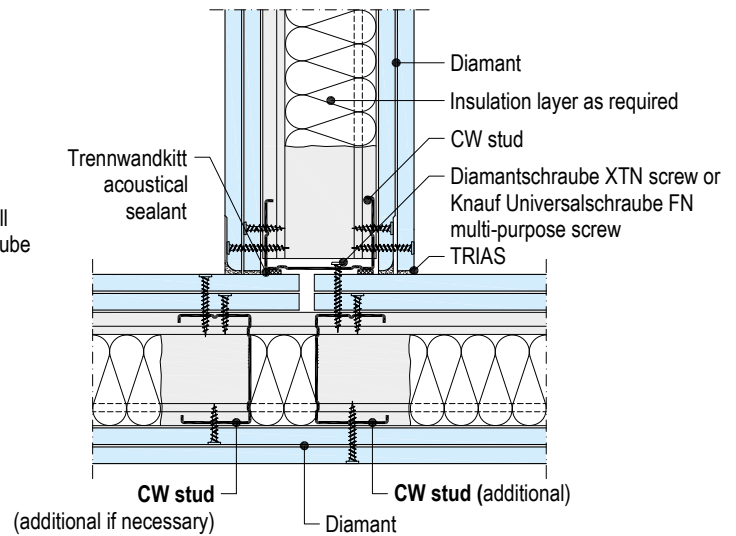
Details scale 1:5

Horizontal sections, examples

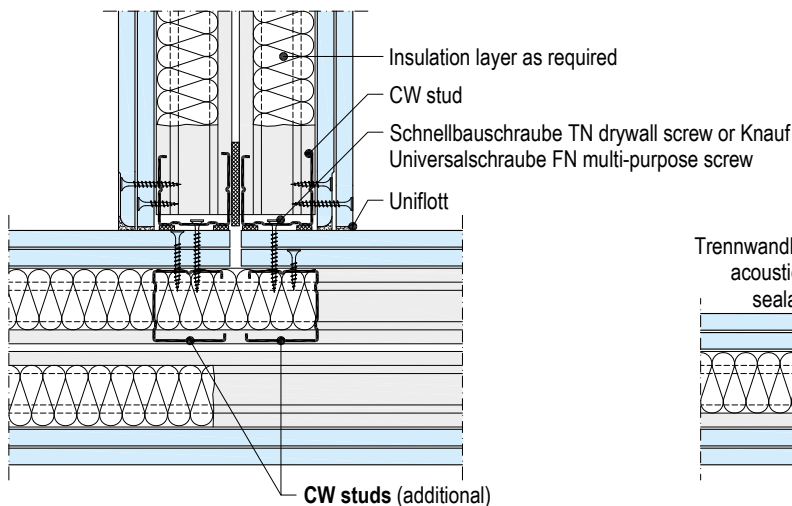
W112.de-C1 T-junction, connection to CW stud



W112.de-C6 T-junction, connection to CW stud

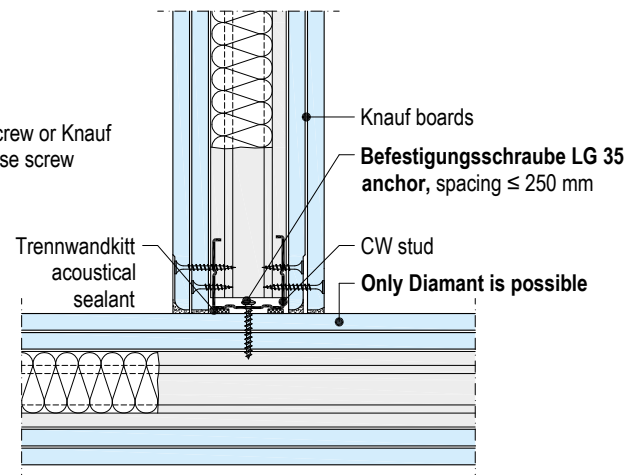


W115.de-C1 T-junction, connection to CW stud



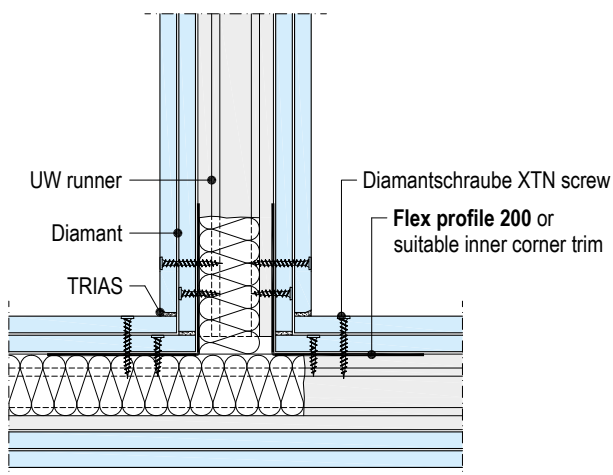
W112.de-C5 T-junction, connection to Diamant

■ Without fire protection

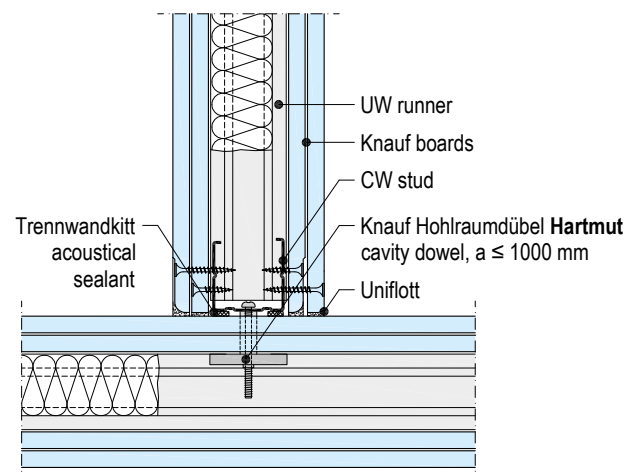


W112.de-C2 T-junction with flex profile / Inside corner trim

■ without fire protection



W112.de-C3 T-junction with cavity dowel



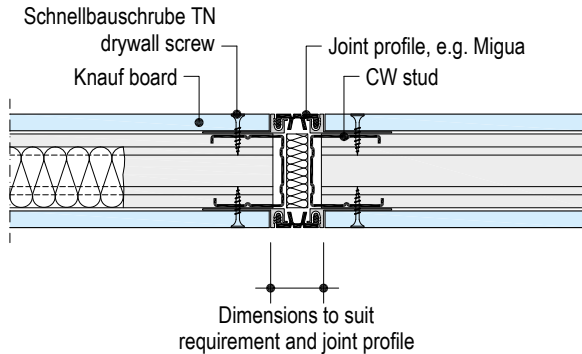
■ Installation aid:
Connect the Flex profile by crimping to the UW runners

Details scale 1:5

Horizontal sections, examples, dimensions in mm

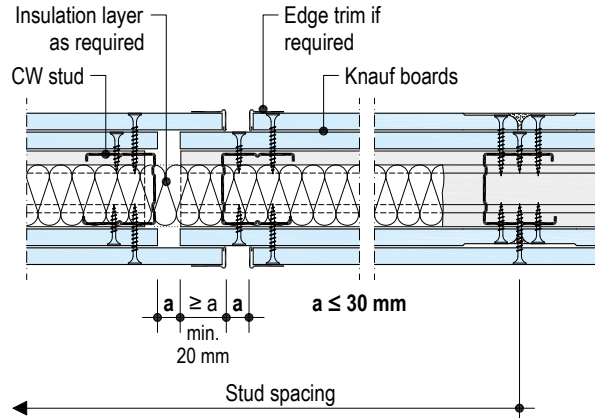
W111.de-BFU2 Movement joint with joint profile

■ without fire protection

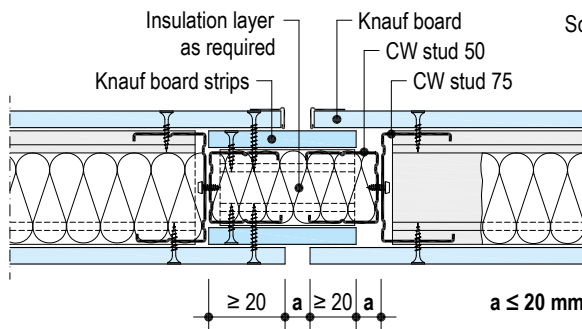


W112.de-BFU2 Movement joint

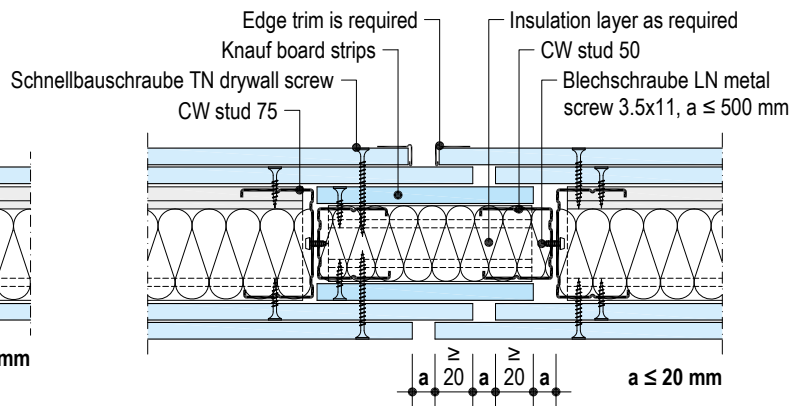
■ without fire protection



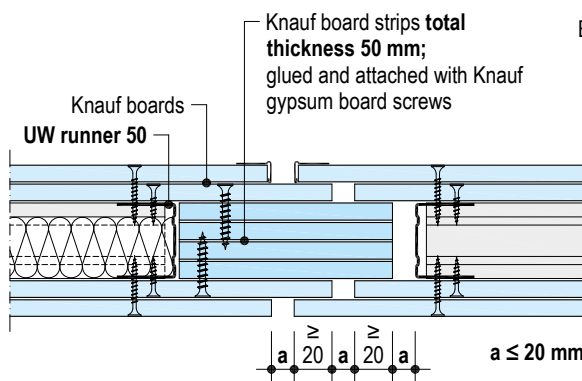
W111.de-BFU1 Movement joint



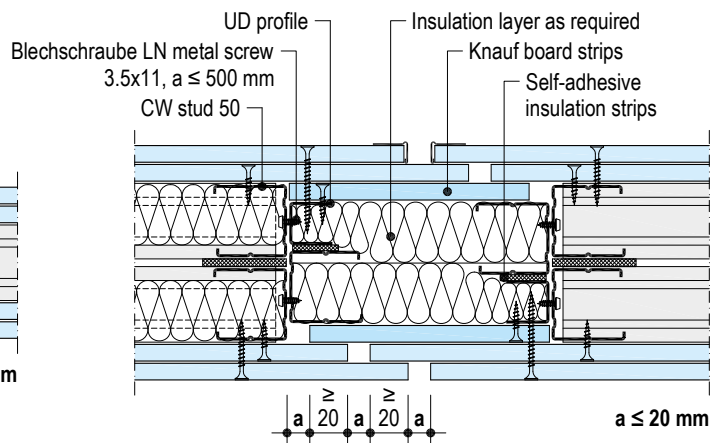
W112.de-BFU1 Movement joint



W112.de-BFU4 Movement joint



W115.de-BFU1 Movement joint



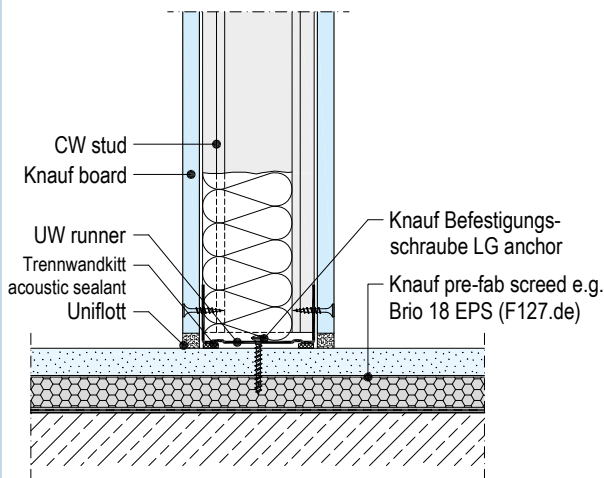
- The rigid connection of the cladding layers leads to a local reduction of the sound insulation
- Knauf recommendation with wall cavity 50 mm

Details scale 1:5

Vertical sections, examples, dimensions in mm

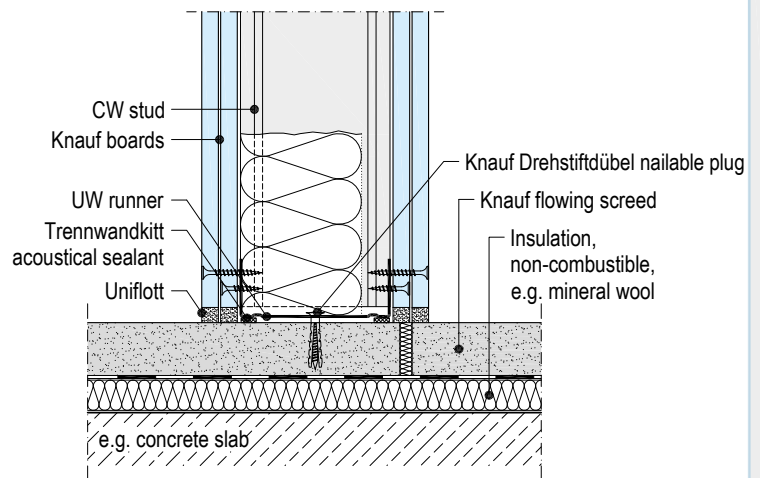
W111.de-VU2 Floor connection to pre-fab floor screed

■ without fire protection

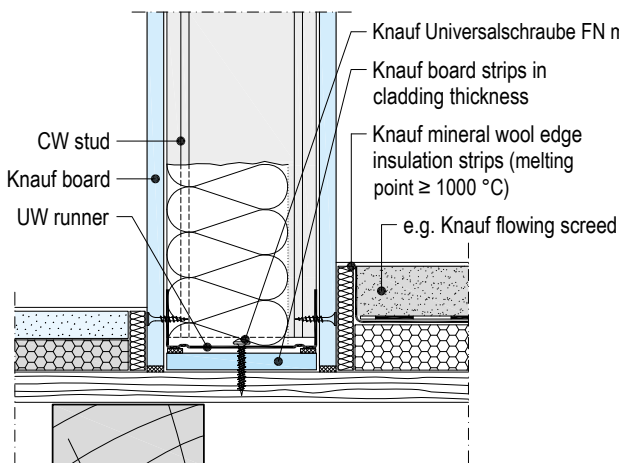


■ Continuous screed layer reduces the sound insulation effectiveness

W112.de-VU2 Floor connection to self-levelling floor screed

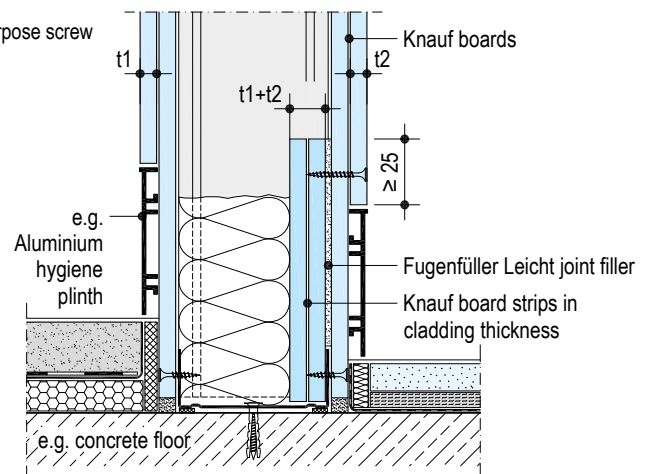


W111.de-VU4 Floor connection to wood joist ceiling



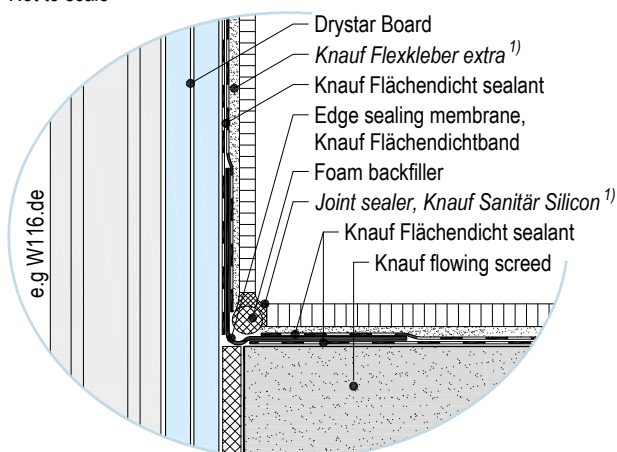
plus Extension to the fire protection certificate of usability
Prior consultation is recommended acc. to page 2.

W112.de-VU3 Floor connection, reduced connection to basic floor



Connection in high humidity area

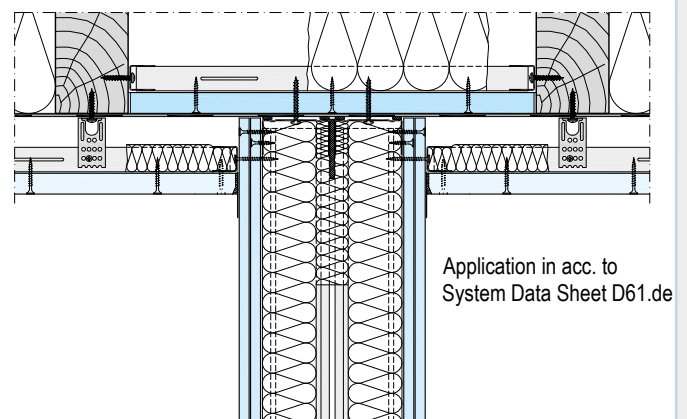
Not to scale



1) Knauf Bauprodukte GmbH

Connection to wood joist ceiling / attic storey system

Not to scale



plus Extension to the fire protection certificate of usability
Prior consultation is recommended acc. to page 2.

■ Observe the reduced maximum permissible spacings (according to the tables of the respective systems)

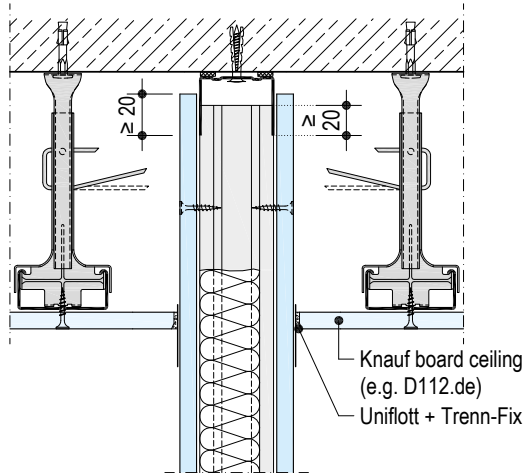
► See also System Data Sheet F12.de Knauf Pre-fab screed / Brochure F20.de Knauf Floor Systems - Construction and application technology / Product Data Sheet K435.de Knauf Flächendicht / System Data Sheet D61.de Knauf Dachgeschoss-Systeme (German only)

Details scale 1:5

Vertical sections, examples, dimensions in mm

W111.de-VO2 Deflection head with board ceilings

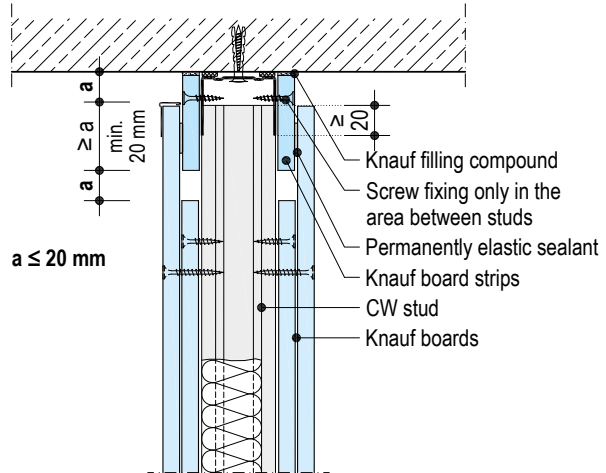
■ without fire protection



■ For partition sound insulation requirement $R_w > 45$ dB: Make deflection head connection similar to as shown in W112.de-VO2 or upgrade suspended ceiling with a mineral wool insulation layer

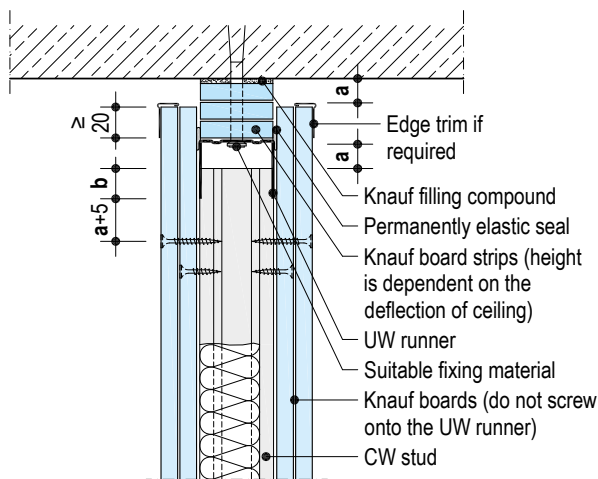
W112.de-VO3 Deflection head

■ without fire protection



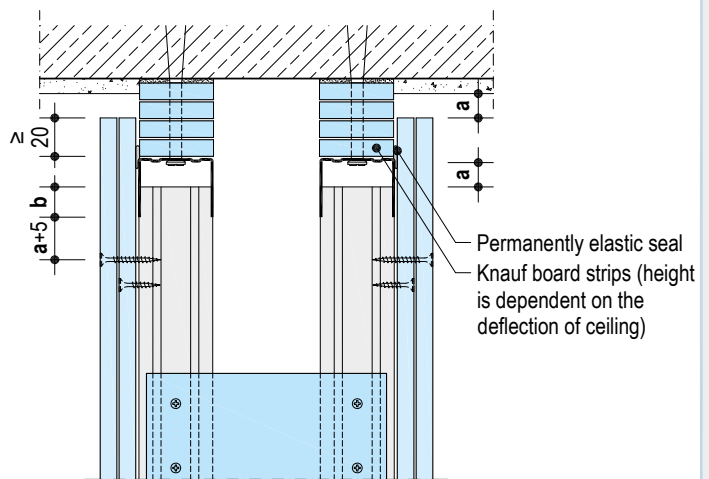
■ Reduction of the sound insulation by approx. 3 dB

W112.de-VO2 Deflection head ¹⁾



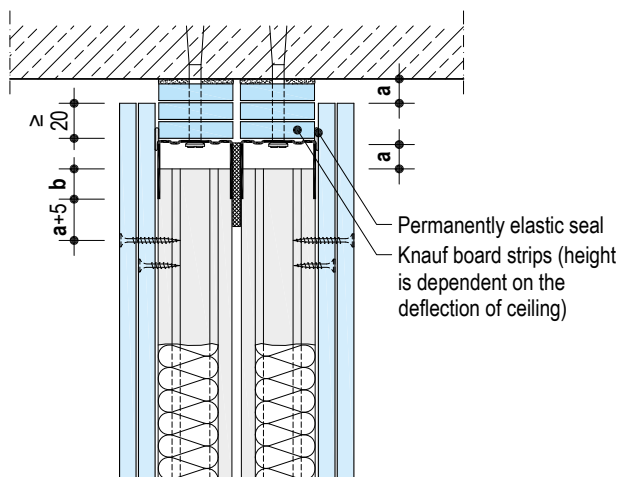
■ Observe the details in the table

W116.de-VO2 Deflection head ¹⁾



■ Observe the details in the table

W115.de-VO2 Deflection head ¹⁾



■ Observe the details in the table

1) Details for deflection heads

Knauf system	Without fire protection		With fire protection		Max. permissible wall height m
	a mm	b mm	a mm	b mm	
W111.de single-layer	≤ 20	≥ 20	≤ 20	≥ 20	6.50
W115.de double-layer	≤ 20	≥ 20	≤ 20	≥ 20	
W116.de single-layer	≤ 20	≥ 20	-	-	
W112.de double-layer	≤ 30	≥ 10	≤ 20	≥ 20	
W113.de triple-layer	≤ 30	≥ 10	≤ 20	≥ 20	
W116.de double-layer	≤ 30	≥ 10	≤ 20	≥ 20	

■ Observe permissible wall heights of the corresponding wall system (see pages 9, 11, 13, 15, 17)

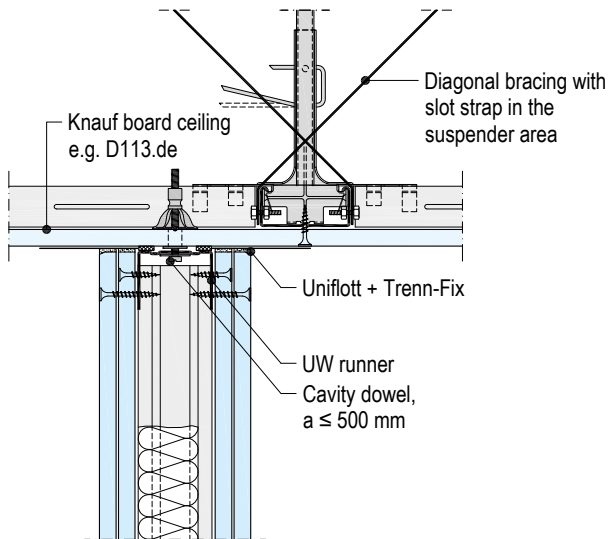
■ Larger ceiling deflections / larger wall heights on request

Details scale 1:5

Vertical sections, examples

W112.de-VO4 Ceiling connection to board ceiling

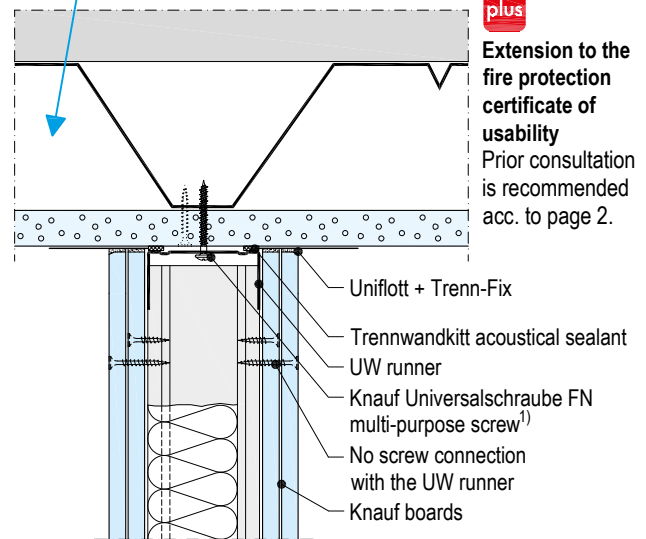
- without fire protection
- Permissible partition height: ≤ 4 m (higher on request)



- Horizontal bracing through diagonal bracing (e.g. slot strap, CD channel)

W112.de-VO5 Ceiling connection to trapezoid sheet metal ceiling

Fire protection classified trapezoid sheet metal constructions with continuous cladding e.g. Knauf System K217.de



plus

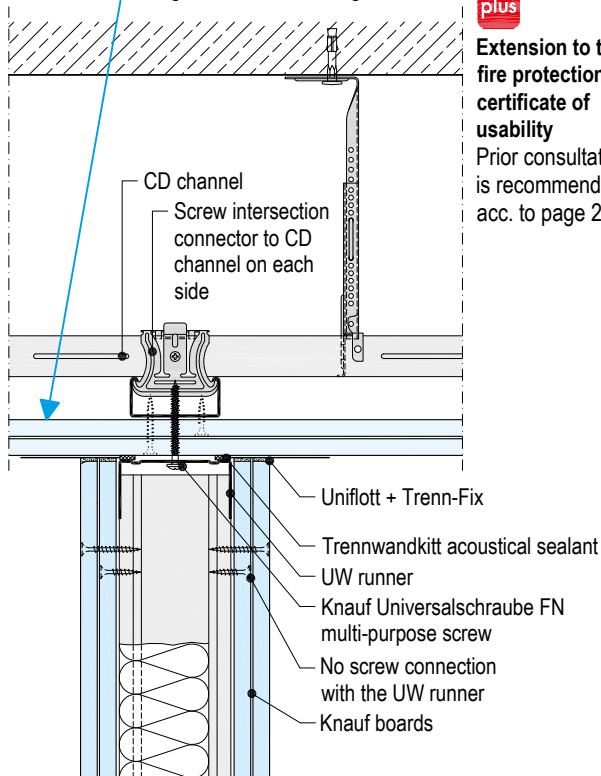
Extension to the fire protection certificate of usability
Prior consultation is recommended acc. to page 2.

- 1) Trapezoid metal gauge Drill $t \geq 1.0$ mm with $\varnothing 2.0$ mm
Drill $t \geq 1.5$ mm with $\varnothing 3.0$ mm
 $t \geq 2.0$ mm use approved anchors

W112.de-VO6 Ceiling connection to board ceiling

- Permissible partition height: ≤ 4 m (higher on request)

Suspended ceilings with a sole fire rating, fire exposure from below e.g. Knauf Board Ceiling D112



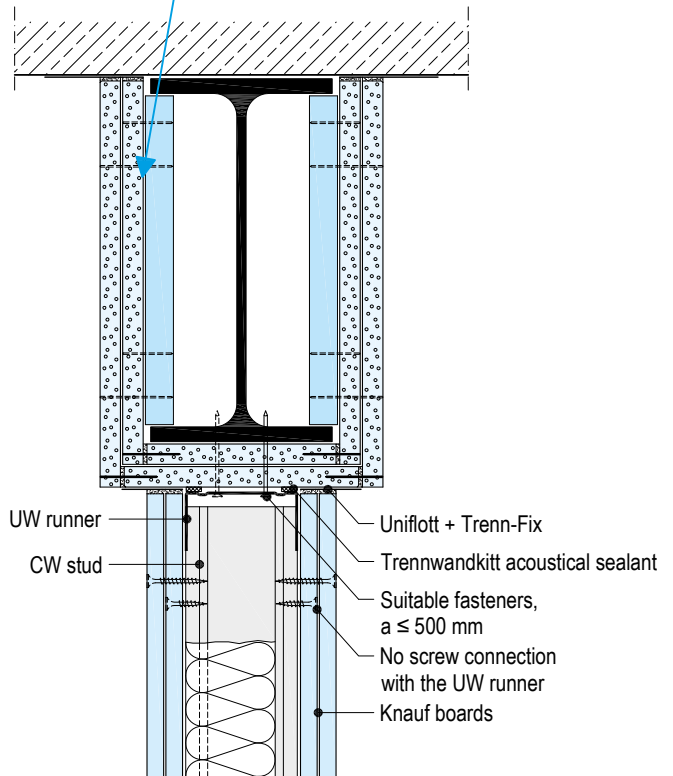
plus

Extension to the fire protection certificate of usability
Prior consultation is recommended acc. to page 2.

- Horizontal bracing by load distribution via ceiling slab on the flanking walls (load-bearing connection to ceiling required)

W112.de-VO8 Connection to steel beam cladding

Fire protection classified beam encasement must be at least one fire resistance classification higher than the partition (e.g. F120 with partition F90), e.g. Apply in accordance with Knauf System Data Sheet K25.de

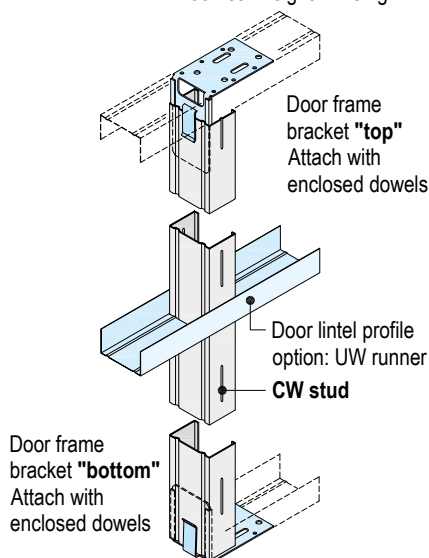


Door opening profiles, metal stud constructions

Scheme drawings

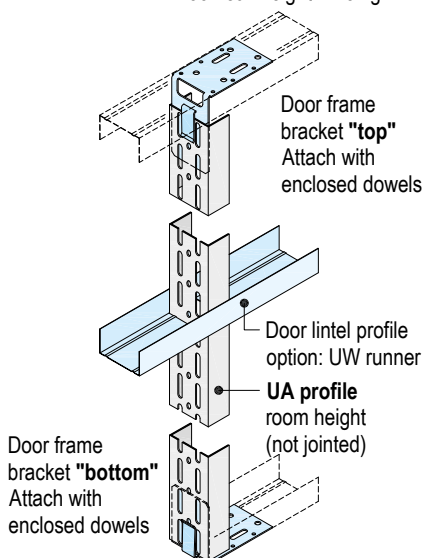
Option CW

Acc. to DIN 18340: Partition height ≤ 2.60 m
 Door width ≤ 0.885 m
 Door leaf weight ≤ 25 kg



Option UA

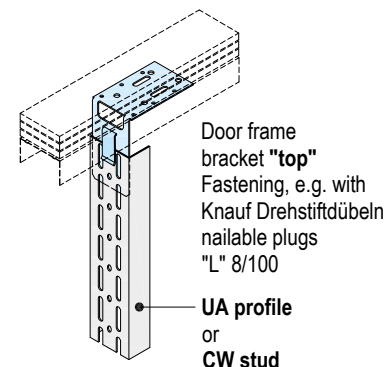
Acc. to DIN 18340: Partition height > 2.60 m
 Door width > 0.885 m
 Door leaf weight > 25 kg



- Remove plastic strips on Türpfostensteckwinkel door frame brackets
- Option: Knauf UA profile connection angles

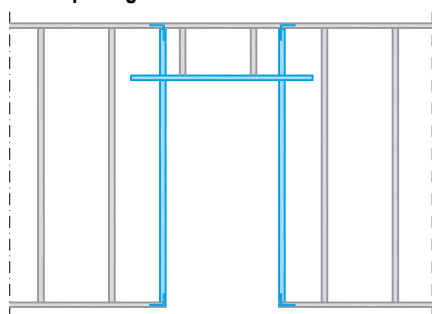
Deflection head

Option CW or UA possible

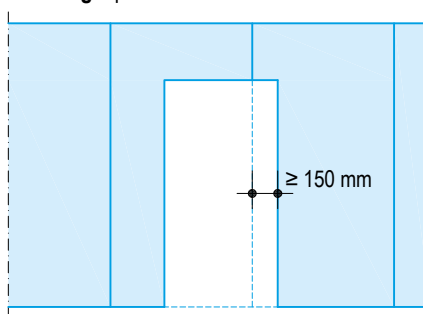


- For ceiling deflection up to max. 20 mm

Door opening frame

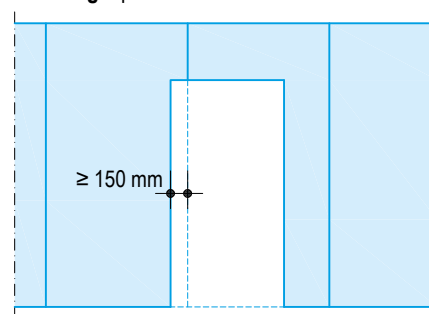


Cladding – partition side 1



- Do not apply board joints on door frame profiles

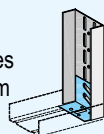
Cladding – partition side 2



Maximum door weights

Door leaf width	Option CW CW studs	Option UA				
		UA 50	UA 75	UA 100	UA 125	UA 150
≤ 885 mm	≤ 25 kg	≤ 50 kg	≤ 75 kg	≤ 100 kg	≤ 125 kg	≤ 150 kg
≤ 1010 mm	–	≤ 50 kg	≤ 75 kg	≤ 100 kg	≤ 125 kg	≤ 150 kg
≤ 1260 mm	–	≤ 40 kg	≤ 60 kg	≤ 80 kg	≤ 100 kg	≤ 120 kg
≤ 1510 mm	–	≤ 35 kg	≤ 50 kg	≤ 65 kg	≤ 80 kg	≤ 95 kg

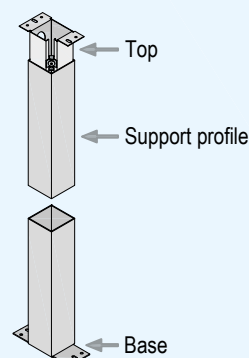
- Knauf recommendation: For double stud partitions apply door openings with UA profiles
- Door stud profiles (CW / UA) approx. 40 mm shorter than partition profiles (note the construction conditions, e.g. additional deflection head)
- When partitions applied with profiles 125 or 150:
 - For construction reasons, door profile only possible with UA profiles and Knauf connection angle for UA 100 required at top and bottom
 - Manufacture the lintel profile using UW runners



- Knauf Türpfostensteckwinkel door frame brackets for CW studs and UA profiles 50 / 75 / 100
 Consisting of: 4 brackets + 10 dowels
- Knauf Anschlusswinkel connection angle for UA profiles 50 / 75 or 100 / 125 / 150
 Consisting of: 4 brackets + 8 dowels + 8 carriage bolts with nuts and washers
- Knauf Türsturprofil door lintel profile for CW studs UA profiles 50 / 75 / 100
 Prepunched for door opening sizes: 610 - 650 mm; 735 - 775 mm; 860 - 900 mm; 985 - 1025 mm

Knauf static support

- Support to accept higher door leaf weights (up to 170 kg) and cantilever loads
- Apply for partition openings with high door leaf weights, e.g. in schools, hospitals and administration buildings
- For UW 75 or UW 100 profiles
- Room heights: < 2900 mm / < 3800 mm (greater heights / special heights on request)
- Screw fix the Knauf boards using standard screws TB/XTB



- ▶ Also refer to Product Data Sheet: K691a.de Knauf Statikstütze (German only)

Details scale 1:5

Horizontal sections, examples

<p>W112.de-E2 Door opening with CW stud</p> <p>■ without fire protection</p>	<p>W113.de-E1 Door opening with UA profile</p> <p>■ without fire protection</p>
<p>W115.de-E1 Door opening with UA profiles</p> <p>■ without fire protection</p>	<p>W116.de-E1 Door opening with UA profiles</p> <p>■ without fire protection</p> <p>■ For centre door frame connection, integrate sheet metal, if required</p>

- Additionally, the specifications of the door manufacturer must be observed (e.g. fire protection certification, additional constructional measures, etc.)
- Fire protection only in conjunction with a corresponding fire protection closure
- ▶ Also refer to brochure W496.de Knauf Schiebetür-System Pocket Kit (German only)

Maximum openings in metal stud partitions

Scheme drawings

<p>CW studs as reveal studs</p>	<p>UA profiles as reveal studs</p>
--	---

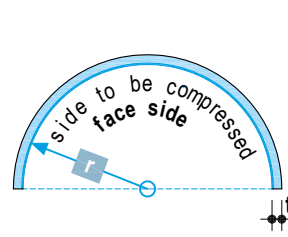
- Stud spacings ≤ 625 mm
- Observe permissible wall heights of respective partition system
- Larger opening widths / partition heights on request
- The respective installation conditions must be observed with door installation

Bending radii of Knauf boards

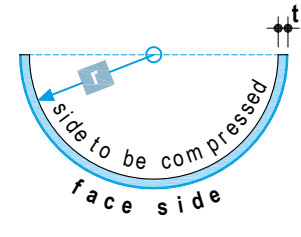
Board thickness t mm	Bend radius r in longitudinal direction	
	Dry bending mm	Wet bending mm
6.5 (Formplatte)	≥ 1000	≥ 300
9.5 GKB	≥ 2000	≥ 500
12.5 GKB / GKF	≥ 2750	≥ 1000
12.5 Diamant	≥ 2750	≥ 1000

- Other Knauf boards / bending radii on request
- Fire protection designs on request

Concave – inner arch



Convex – outer arch

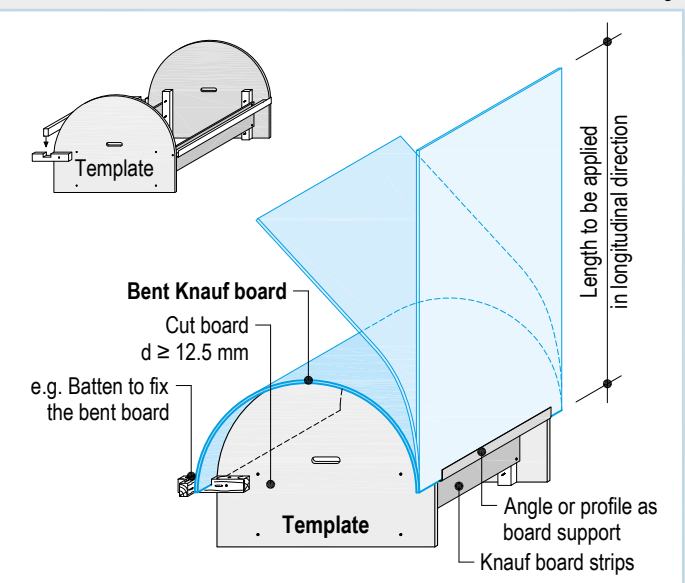


Bending instructions for Knauf boards

- Bend only in the longitudinal direction
- Dry bending
 1. Slowly bend the Knauf board laterally over the stud partitions. Pre-bending on a template is recommended.
 2. Fix with drywall screws continuously following the bending direction.
- Wet bending
 1. Put the cut-to-length Knauf boards on a grid made of channels or similar with the **side to be compressed** on top (to ensure that excess water can drip off).
 2. Perforate the board laterally and longitudinally with a spiked roller.
 3. Wet the board by spraying or use a lambskin roller and allow it to settle for a few minutes. Repeat the process until saturation is achieved and allow the excessive water to drain.
 4. Place the board on the prepared template, bend and fix the board with adhesive tape and allow to dry.

With impregnated boards:
Observe the extended time required to take effect due to hydrophobic properties.

Scheme drawings



Installation instructions

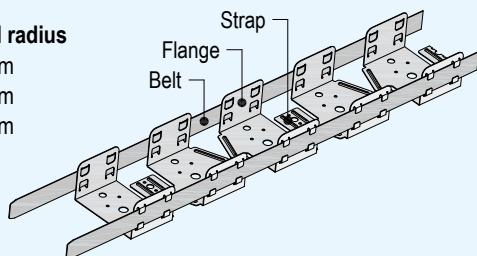
- Connect the CW studs to the Knauf Sinus with a crimp connection
- CW stud spacing: ≤ 312.5 mm (external radius)
- Knauf fastener spacings: ≤ 300 mm
- Horizontal cladding

Knauf Sinus:

- Available in widths 50, 75 and 100 mm; length 1900 mm.
- The desired curvature can be implemented at any location. The straps are simply bent by simple application of finger pressure and the profile is made flexible at this location.

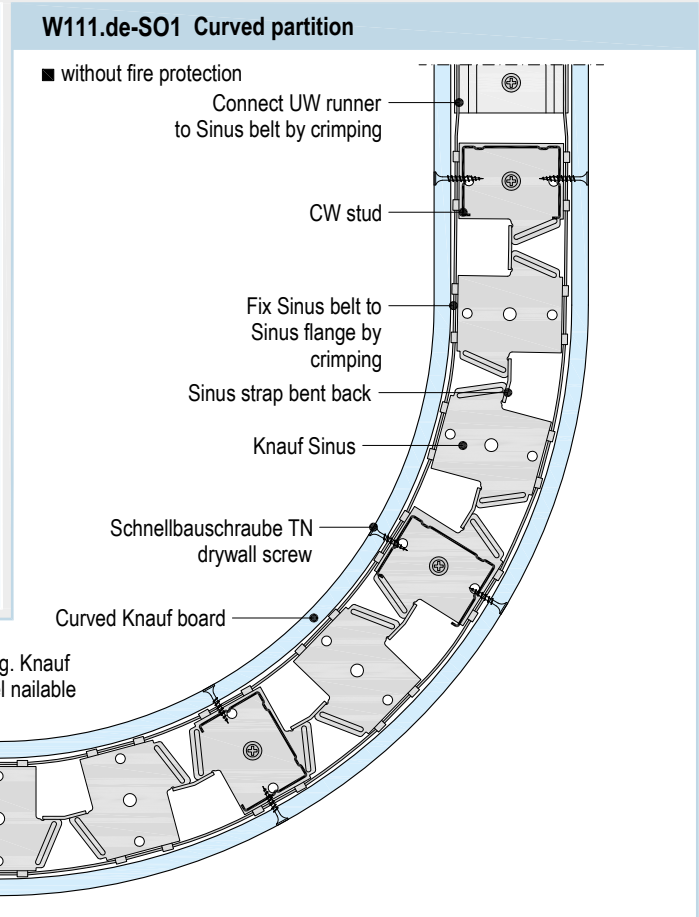
Possible radii:

Sinus	External radius
50	≥ 125 mm
75	≥ 175 mm
100	≥ 250 mm



Detail scale 1:5

Horizontal section, example



W11.de Knauf Metal Stud Partitions

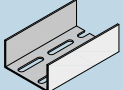
W111.de/W112.de without connection to ceiling



Wall width = Span width with UA profile

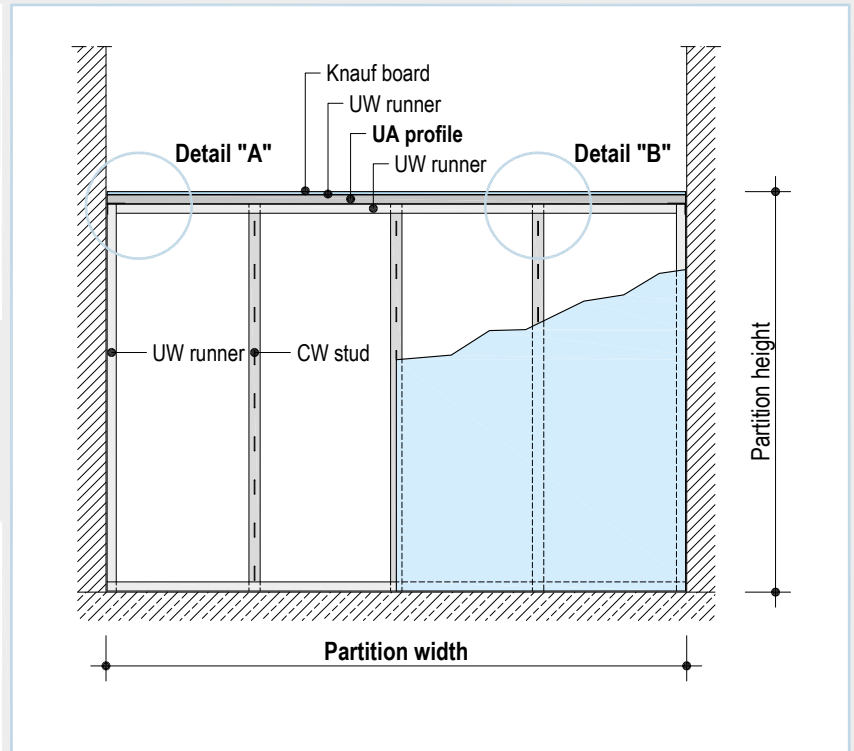
View

Scheme drawing

UA profile  Metal gauge 2 mm	Max. permissible partition widths Installation zone 1	
	Cladding ≥ 12.5 mm m	Cladding ≥ 2x 12.5 mm m
UA 50	3.00	4.00
UA 75	4.50	5.50
UA 100	5.00	6.50

■ Larger partition widths / Installation zone 2 on request

- Permissible partition height: ≤ 4 m (larger heights on request)
- UA profiles must not be jointed
- Fire protection and sound insulation requirements **cannot** be met with this partition construction
- Door / wall openings on request



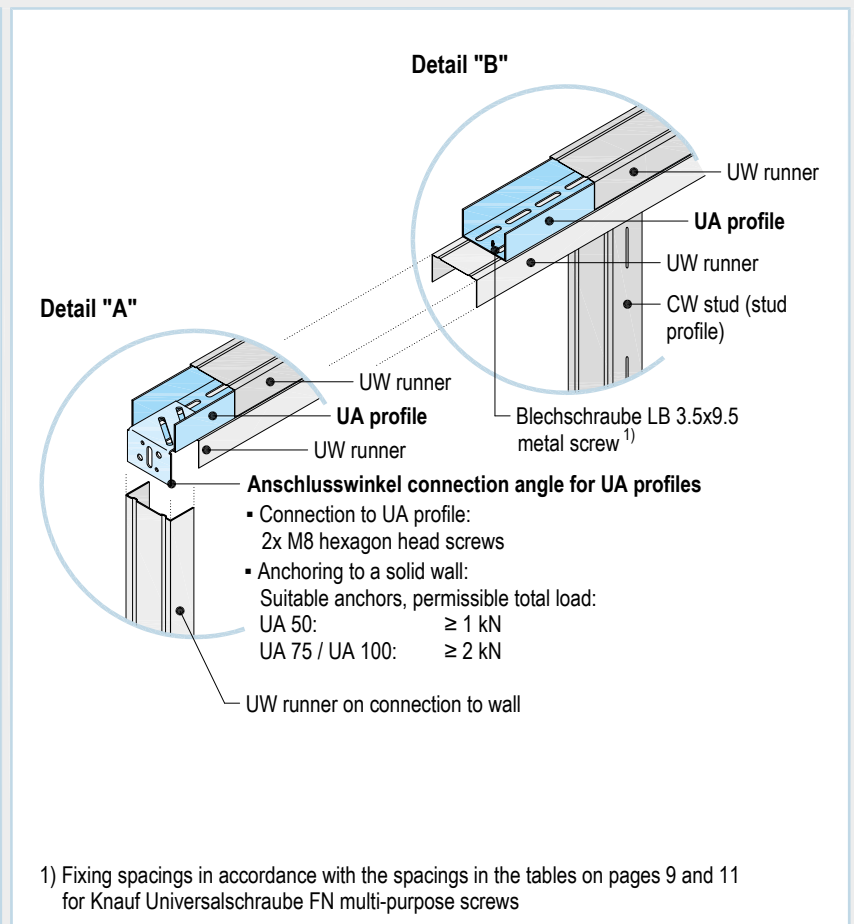
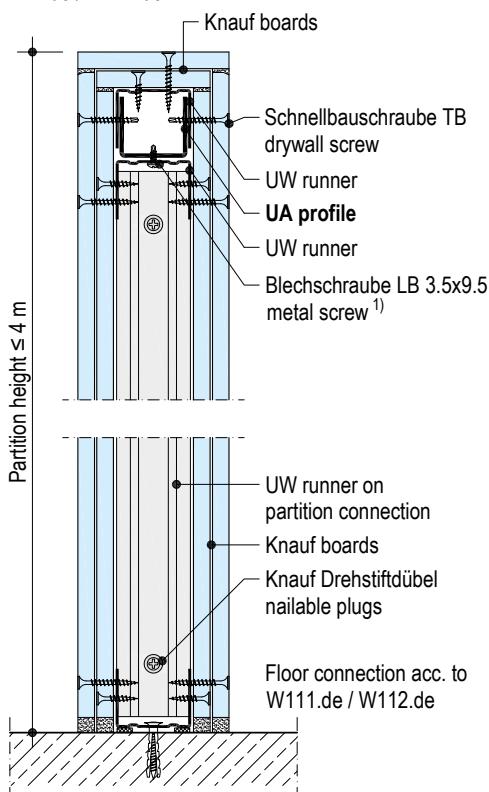
Detail scale 1:5

Vertical section, example

Scheme drawings

Metal stud partition without ceiling connection

W111.de / W112.de



1) Fixing spacings in accordance with the spacings in the tables on pages 9 and 11 for Knauf Universalschraube FN multi-purpose screws

Fixing loads

Up to 15 kg, X-Hooks

Max. hook load capacity		
Up to 5 kg	Up to 10 kg	Up to 15 kg

Up to 65 kg – cavity dowel

For anchoring cantilever loads up to 0.4 kN/m or 0.7 kN/m

Cladding thickness mm	Maximum dowel loading capacity					
	Plastic cavity dowel Ø 8 mm or 10 mm		Metal cavity dowel Screw M5 or M6		Knauf Hohlraumdübel Hartmut cavity dowel Screw M5	
	Knauf boards	Diamant	Knauf boards	Diamant	Knauf boards	Diamant
	kg	kg	kg	kg	kg	kg
12.5	25	30	30	35	35	40
15 / 18	30	35	35	40	40	45
2x 12.5	40	45	50	55	55	60
≥ 2x 15	45	50	55	60	60	65

1) e.g. Tox Universal, Fischer Universal, Molly Screw anchor or equivalent

Type and usage of the fasteners

■ X-Hooks:

- Light items: e.g. picture frames
- Only shear loading up to 15 kg

■ Knauf Befestigungsschraube LG anchor:

- Light items: e.g. Tilt protection for standing shelves
- Tension or shear loading up to 24 kg

■ Cavity dowels:

- Higher fixing loads: e.g. handles
- Cantilever loads: e.g. kitchen cupboards
- Combined tension or shear loading up to 65 kg

With stapled upper board layer:

Only the screw fixed board layer may be used to transfer the load.

Up to 24 kg, Knauf Befestigungsschrauben LG anchors

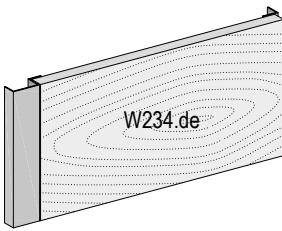
Cladding thickness mm	Fixing screws 	Max. screw loads		
		Knauf GKB mm	Knauf GKF mm	Diamant mm
12.5	LG 25	8	10	12
15	LG 25	10	12	15
18	LG 35	–	14	18
2x 12.5	LG 35	16	20	24

Min. screw length:

Cladding thickness + thickness of object to be fixed

Up to 1.5 kN/m for traverses, sanistands, Knauf Statikstütze

Cantilever loads > 0.4 kN/m or 0.7 kN/m up to 1.5 kN/m partition length (e.g. boilers, wall-hung WCs, washbasins) using traverses²⁾ or sanistands³⁾ or special profiles (e.g. Knauf Statikstütze) to transfer the load into the substructure



Examples:

Knauf Statikstütze
▶ See Product Data Sheet K691a.de Knauf Statikstütze (German only)

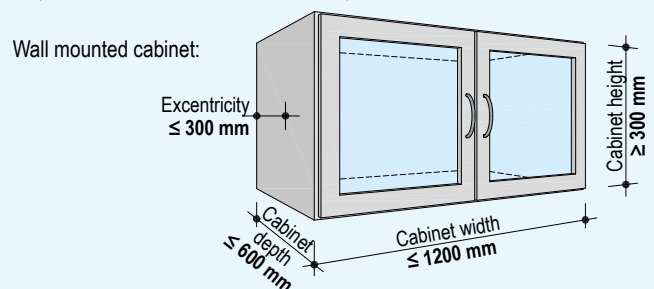
W234.de Knauf Multi-purpose Traverse
▶ See System Data Sheet W21.de Knauf Sanitär-Einbauteile (Knauf Sanitary Built-ins)

2) Preferably in conjunction with systems W112.de, W113.de, W116.de

3) e.g. Sanistands from Glock GmbH (available at www.glockgmbh.de)

Cantilever loads (observe page 41)

- According to DIN 18183, partitions can be loaded at any position by cantilever loads (e.g. TVs, wall cupboards) in accordance with the specifications on page 41.
- Consideration of the cantilever arm (cabinet height ≥ 300 mm) and eccentricity (≤ 300 mm at cabinet depth ≤ 600 mm) is required.
- Attach the cantilever loads with at least **2 cavity dowels** made of plastic or metal, e.g. Knauf Hartmut Hohlraumdübel cavity dowels.
- Determine the minimum number of dowels using the cabinet weight and loading of the selected dowel type in dependence on the cladding thickness (see calculation examples on page 41).
- Fixing spacing of the dowels according to DIN 18183: ≥ 75 mm; (Knauf recommendation: ≥ 200 mm).



W11.de Knauf Metal Stud Partitions

Cantilever loads acc. to DIN 4103-1 and DIN 18183-1



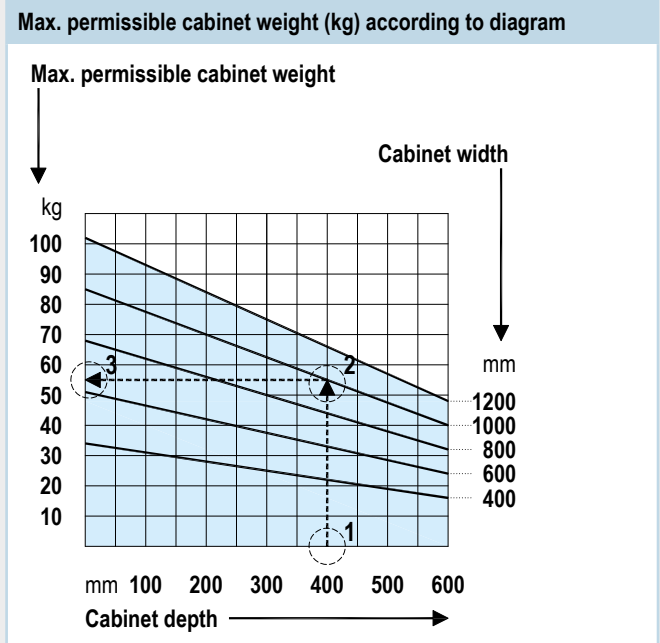
Cantilever loads (observe page 40)

Up to 0.4 kN/m (40 kg/m) wall length: Cladding thickness < 15 mm Diamant / < 18 mm Knauf boards

Max. permissible cabinet weight (kg) according to table						
Cabinet width mm	Cabinet depth mm					
	100	200	300	400	500	600
400	31	28	25	22	19	16
600	46.5	42	37.5	33	28.5	24
800	62	56	50	44	38	32
1000	77.5	70	62.5	55	47.5	40
1200	93	84	75	66	57	48

With intermediate values assume the worst-case value or use diagram procedure

or

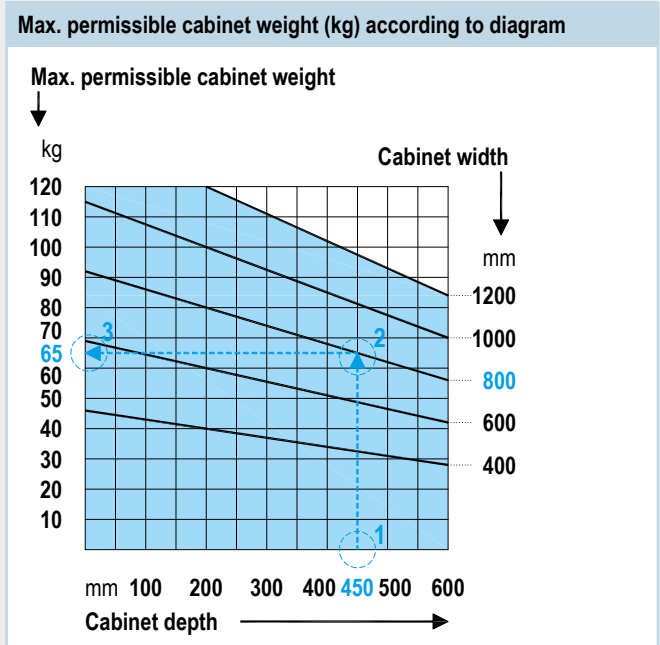


Up to 0.7 kN/m (70 kg/m) wall length: Cladding thickness ≥ 15 mm Diamant(in acc. to ABP P-1405/928/10) / ≥ 18 mm Knauf boards

Max. permissible cabinet weight (kg) according to table						
Cabinet width mm	Cabinet depth mm					
	100	200	300	400	500	600
400	43	40	37	34	31	28
600	64.5	60	55.5	51	46.5	42
800	86	80	74	68	62	56
1000	107.5	100	92.5	85	77.5	70
1200	129	120	111	102	93	84

With intermediate values assume the worst-case value or use diagram procedure

or



System W115.de:

When using partition heights acc. to DIN 18183-1, cantilever loads only up to 0.4 kN/m are permissible.

Calculation examples – Determination of the permissible cabinet weight as well as the necessary minimum number of dowels (always ≥ 2)

According to table

- 0.4 kN/m
 - Cabinet depth 400 mm, cabinet width 1000 mm → Maximum cabinet weight: **55 kg** (see table above)
 - Cladding thickness 12.5 mm, plastic cavity dowels → Maximum dowel load: **25 kg** (see table on page 40)
- Required number of dowels: $55 \text{ kg} : 25 \text{ kg} = 2.2$ → **3 dowels** are the minimum requirement

According to the diagram

- 0.7 kN/m
 - Cabinet depth 450 mm, cabinet width 800 mm
 - With cabinet depth 450 mm ① vertically upwards, up to line cabinet width 800 mm ②, at this intersection point horizontally to the left - read off ③: → Maximum cabinet weight: **65 kg** (see diagram above)
 - Cladding thickness 2x 12.5 mm, Knauf Hartmut → Maximum dowel load: **55 kg** (see table on page 40)
- Required number of dowels: $65 \text{ kg} : 55 \text{ kg} = 1.18$ → **2 dowels** are the minimum requirement

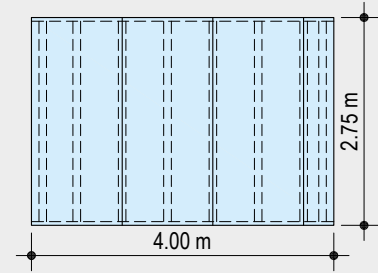
W11.de Knauf Metal Stud Partitions

Material requirement for selected examples



Material requirement per m² partition (without allowance for loss and waste)

- The quantity relates to a partition area of: H = 2.75 m; L = 4.00 m; A = 11.00 m²
- as req. = as required
- Details without specific requirements on the building physics



Description	Unit	Quantity as average value					
		W111.de Diamant 15 mm	W112.de Diamant 2x 12.5 mm	Massivbau- platte solid board 25 mm + Diamant 12.5 mm	W113.de Feuer- schutzplatte Knauf Piano 3x 12.5 mm	W115.de Diamant 2x 12.5 mm	W116.de Diamant 18 mm
Stud frame¹⁾							
Knauf UW runner; e.g. UW 50	m	0.7	0.7	0.7	0.7	1.4	1.4
Knauf CW stud; e.g. CW 50	m	2.0	2.0	2.0	2.0	4.0	4.0
Knauf sealing tape pieces 70/3.2 mm; (100 mm long)	m	–	–	–	–	0.5	–
Knauf board strips; e.g. Diamant 18 mm	m ²	–	–	–	–	–	0.1
Board strip fixing; e.g. Knauf Diamantschraube XTN screws	pcs	–	–	–	–	–	7
or Knauf Trennwandkitt acoustical sealant	pcs	0.3	0.3	0.3	0.3	0.6	0.6
or Knauf Dichtungsband sealing tape; e.g. 50/3.2 mm	m	1.2	1.2	1.2	1.2	2.4	2.4
Knauf fastener, e.g. Drehstiftdübel nailable plug "K" 6/35	pcs	1.6	1.6	1.6	1.6	3.2	3.2
Insulation layer, e.g. Knauf Insulation ²⁾	m ²	as req.	as req.	as req.	as req.	as req.	as req.
Knauf boards²⁾							
Feuerschutzplatte Knauf Piano fire-resistant board; 12.5 mm	m ²	–	–	–	6	–	–
Massivbauplatte solid board; 25 mm	m ²	–	–	2	–	–	–
Diamant; 12.5 mm or 15 mm or 18 mm	m ²	2	4	2	–	4	2
Fastening (Fastening of the boards, Knauf fasteners see page 5)							
1st layer	pcs	30	14	20	14	14	36
2nd layer	pcs	–	30	30	18	30	–
3rd layer	pcs	–	–	–	30	–	–
Jointing (e.g. quality level Q2) , see also page 43							
Knauf filling compound; e.g. Uniflott or TRIAS	kg	0.5	0.8	1.1	1.0	0.8	1.0
Fugendeckstreifen Kurt joint tape (for front edges)	m	as req.	as req.	as req.	as req.	as req.	as req.
Trenn-Fix, 65 mm wide, self-adhesive	m	1.8	1.8	1.8	1.8	1.8	1.8
Knauf edge/corner trims; e.g. Kantenschutzprofil edge trim 23/13	m	as req.	as req.	as req.	as req.	as req.	as req.

1) Alternatively, different profile sizes can be used (observe the specifications of the respective partition system)

2) Observe the fire protection / sound insulation requirements

- With Fireboard cladding: Always use Knauf Fireboard-Spachtel filler + Knauf Glasfaser-Fugendeckstreifen fibre glass joint tape (long and front edges)

Jointing

Surface quality

- Jointing of the boards in the required quality level Q1 to Q4 in accordance with Code of Practice no. 2 "Verspachtelung von Gipsplatten, Oberflächengüten" ¹⁾.
- With Fireboard, a skim coating of the entire surface with Knauf Fireboard-Spachtel filler is additionally required before application of direct coatings or linings.

Filling compounds

Suitable filling/jointing compounds:

- TRIAS: Hand filling without board tape in the long joint edges; easy blending, very smooth application and easy to sand, with high strength and suitable for areas of high humidity, reduced absorption for surfaces with uniform appearance, the ideal filler particularly for systems with Diamant boards.
- Uniflott: Hand filling without joint tape strips in the long joint edges
- Uniflott imprägniert impregnated: Hand filling of impregnated (green) boards without joint tape in the long joint edges; water-repellent, green colour for easy identification.
- Fugenfüller Leicht: Hand filling with Knauf Fugendeckstreifen Kurt joint tape.
- Fireboard Spachtel filler: Hand filling of Fireboard with fibre glass joint tape.

Finishing filler to achieve the desired surface quality:

- Q2, application by hand: Readygips
- Q3/Q4, application by hand: Readygips, Knauf SuperFinish
- Q3/Q4, machine application: Readygips, Knauf ProSpray Light
- Fireboard-Spachtel filler for full surface skimming of Fireboard.

Gypsum board joints

- For multi-layer cladding, fill the lower layers with filler; fill the joints of the visible layer. Filling the joints of covered cladding layers with multi-layer cladding is necessary to ensure technical fire protection and sound insulation properties as well as the structural properties!
- Recommendation: Front edge and cut edge joints as well as mixed joints (e.g. half-rounded tapered edge + cut edge) of the visible cladding layers filled using Uniflott or TRIAS, will require the application of Fugendeckstreifen Knauf joint tape as well.
- Fill in visible screw heads.
- Lightly sand visible surfaces after drying of the filler material, if required.

Connection joints

- Apply connections to the flanking drywall construction (ceiling/wall), dependent on the conditions and the demands on crack resistance with Trenn-Fix or Knauf Fugendeckstreifen Kurt joint tape.
- Observe code of practice no. 3 "Gipsplattenkonstruktionen - Fugen und Anschlüsse" ¹⁾.
- Apply Trenn-Fix when filling joints to adjacent solid construction components.
- With fire protection demands, seal the connection to the floor with joint filler, for sound insulation demands only acrylate or Trennwandkitt acoustical sealant may be used.

Application temperature / climate

- Filling and covering of joints should only take place when no more longitudinal changes can be expected, i.e. expansion or contraction due to humidity or temperature changes.
- Do not apply jointing at room or substrate temperatures below approx. +10 °C.
- In case of mastic asphalt screed, cementitious screed and self-levelling screed, fill in board joints only after screed has been applied.
- Observe code of practice no. 1 "Baustellenbedingungen" ¹⁾.

Coatings and linings

For direct application of a coating or wallpaper, the surface must at least have quality level Q2, or for Fireboard, it must be dust free and a full surface skim with Knauf Fireboard-Spachtel filler has to be applied.

Pretreatment

Before further coatings or linings (wallpaper) are applied, the filled surface must be free of dust and the surface of the gypsum boards should always be primed, acc. to code of practice no. 6 of the BVG "Vorbehandlung von Trockenbauflächen aus Gipsplatten zur weitergehenden Oberflächenbeschichtung bzw. -bekleidung" ¹⁾.

The primer must suit the subsequent coating compound/coatings/linings.

In order to compensate for the differences in absorption of surfaces, coatings of primer such as Knauf Tiefengrund or Spezialgrund are suitable.

Where a wallpaper lining is used, a primer that facilitates easier removal of wallpaper for redecoration is recommended.

A sealing primer of Knauf Flächendicht is required for covering splash water areas with tiles.

Suitable coatings and linings

The following coatings/linings can be applied to Knauf boards:

- Wallpapers
 - Paper, fleece, textile and synthetic wallpapers: Use only adhesives made of methyl cellulose according to Code of Practice no. 16 "Technische Richtlinien für Tapezier- und Klebearbeiten" released by the Bundesausschuss Farbe und Sachwertschutz (Germany).
- Ceramic tiles
 - Minimum cladding thickness 18 mm (Diamant: 15 mm) with stud spacing 625 mm.
 - With narrower cladding thickness, reduce the stud spacing to max. 417 mm.
- Plasters
 - Finishing plasters (e.g. Knauf Noblo, Diamant Spritzputz, Rotkalk Filz)
 - Full surface plaster (e.g. Knauf Readygips, Multi-Finish).

Application of plaster layers only in conjunction with Knauf Fugendeckstreifen Kurt joint tape.
- Coatings
 - Dispersion paints (e.g. Knauf Intol E.L.F., Malerweiss E.L.F.)
 - Multicoloured rainbow emulsion

- Silicate-based emulsion paints with suitable primer.

Unsuitable are:

- Alkaline coats such as lime-based paints, water glass paints and silicate-based paints.

Notes

After wallpapering or after application of plasters, quick drying must be ensured through adequate airing.

Gypsum board surfaces that have constantly been exposed to light without any protection can result in yellowing. Therefore, a trial coat is recommended that will extend across several boards including all joints. Yellowing can, however, be successfully avoided only by using a special primer, e.g. Knauf Aton Sperrgrund for finishing plasters, Knauf Atonol for coatings.

- Other coatings or layers and vapour barriers up to about 0.5 mm thickness as well as claddings (with the exception of sheet steel), do not have any influence on the technical fire resistance classification of Knauf Metal Stud Partition systems.

Information on sustainability of Knauf Products and Metal Stud Partition Systems

Building assessment systems ensure the sustainable quality of buildings and constructional structures by a detailed assessment of ecological, economic, social, functional and technical aspects. The certification systems of the DGNB (Deutsches Gütesiegel Nachhaltiges Bauen), BNB (Bewertungssystem Nachhaltiges Bauen) and LEED (Leadership in Energy and Environmental Design) are of particular relevance in Germany.

Knauf products and Metal Stud Partition systems can positively influence many of these criteria.

DGNB/BNB

Ecological quality

- Criterion: Risks for the local environment
→ The relevant environmental data are contained in the EPD for gypsum products

Economic quality

- Criterion: Building related life-cycle costs
→ Cost-effective Knauf Drywalling

Sociocultural and functional quality

- Criterion: Space efficiency
→ Slim, floor-space enhancing Knauf metal stud partition systems
- Criterion: Suitability for conversion
→ Flexible Knauf Drywalling

Technical quality

- Criterion: Fire protection
→ Comprehensive fire protection know-how
- Criterion: Sound insulation
→ Exceeding the demands of the standard with Knauf sound installation
- Criteria: Ease of dismantling and recycling,
→ Knauf Drywalling is fully compliant

LEED

Materials and resources

- Credit: Recycled Content
→ Recycled content in Knauf boards (e.g. FGD gypsum)
- Credit: Regional Materials
→ Short transport routes provided by the extensive network of Knauf manufacturing facilities

Detailed information on request and on the internet under:

www.knauf-blue.de

Special note

All construction variants, details and stated products in the **W11.de Knauf Metal Stud Partitions - edition 08/2015** system data sheet fully comply with the proofs acc. to German building legislation, valid at the time of issue. In addition, design and structural requirements and those regarding building physics (fire protection and sound insulation) are considered.

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 provide the documentation on which this assessment is based, such as surveyors' reports or technical assessments 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 protection 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.

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