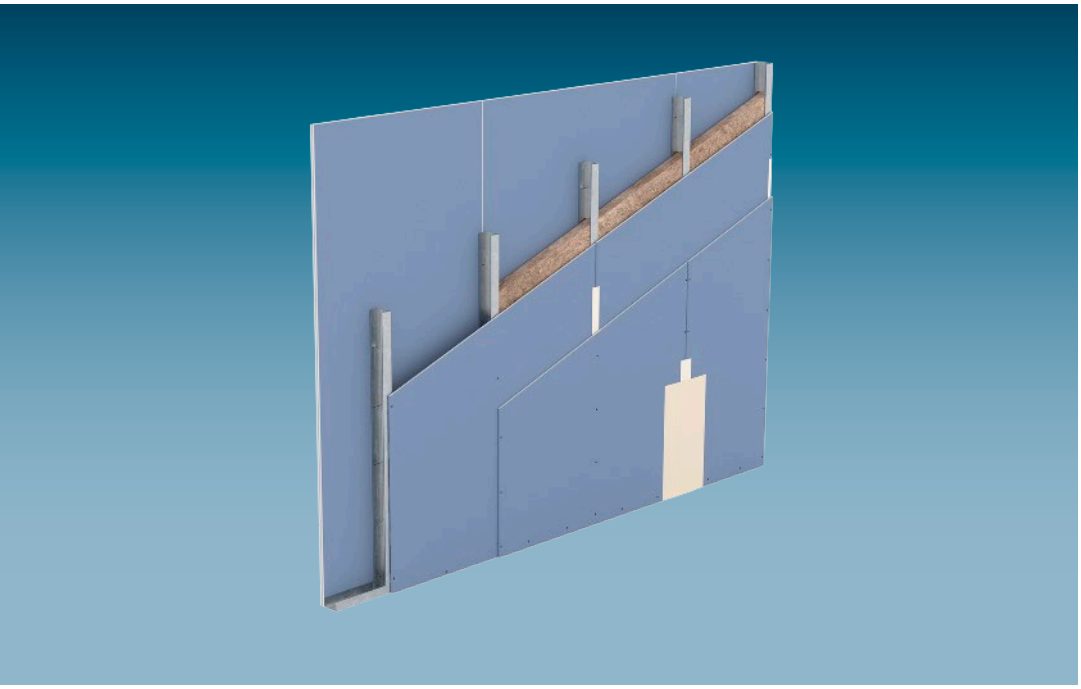


Drywall Systems

W11.de

System Data Sheet 2020-04

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 – Decoupled double stud partition
W116.de – Knauf Metal Stud Partition – Linked double stud partition

Note on English translation / Hinweise zur englischen Fassung

This is a translation of the System Data Sheet 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.

Contents

Notes on the document

Knauf system data sheets are the planning and application basis for planners and professional installers with the application of Knauf systems. The contained information and specifications, constructions, details and stated products are based, unless otherwise stated, on the certificates of usability (e.g. National Technical Test Certificate (abP) valid at the date they are published as well as on the applicable standards. Additionally, design and structural requirements and those relating to building physics (fire resistance and sound insulation) are considered.

The contained construction details are examples and can be used in a similar way for various cladding variants of the respective system. At the same time, the demands made on fire resistance and/or sound insulation as well as any necessary additional measures and/or limitations must be observed.

References to other documents

System data sheets

- Fire walls see system data sheet W13.de Knauf Fire Walls
- Furring and linings see system data sheet W61.de Knauf Furring and Linings
- Installation shaft walls see system data sheet W62.de Knauf Installation Shaft Walls
- Metal Stud Partitions AQUAPANEL® see system data sheet W38.de Knauf Metal Stud Partitions AQUAPANEL®
- Furring and Lining AQUAPANEL® see system data sheet W68.de Knauf Furring and Lining AQUAPANEL®

Product data sheets

- Observe the product data sheets of the Knauf system components

Technical Information

- Parapets, see technical information SL02.de Knauf Parapets (German only)
- Fastening of loads, see technical information VT03.de Fastening of loads to Knauf Wall and Ceiling Systems

Folders

- Fire resistance with Knauf BS1.de (German only)
- Sound insulation and room acoustics with Knauf (only sections in English)

Technical Brochures

- Safety and security engineering see technical brochure (German) ST01.de Knauf Safety Engineering

Symbols in the system data sheet

The following symbols are used in this document:

Insulation layers

G Mineral wool insulation layer acc. to EN 13162
non-combustible
(insulating material, e.g. from Knauf Insulation)

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

Legend symbols

1 Legend number that will be explained when used

Intended use of Knauf Systems

Please observe the following:

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

General notes on Knauf systems

Field of application

The specifications in this system data sheet only applies for metal stud partitions in interiors.

Notes on fire resistance

Reinforcing and supporting components must at least feature the same fire resistance class.

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 a similar use.

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

Construction notes

Movement joints

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

Notes on sound insulation

A deviation of the stud spacing of 625 mm can have an influence on the sound reduction index.

R_w = Weighted sound reduction index in dB without sound transmission via flanking building components

$R_{w,R}$ = Calculation value of the weighted apparent sound reduction index without sound transmission via flanking building components

Index R = Used to differentiate between the calculation values and the test values.

Note	The verification acc. to DIN 4109-2:2018-01 is no longer according to calculation values $R_{w,R}$, but rather with the values obtained on the test rig R_w rounded off to a single position following the decimal point. Only at the end of the forecast after consideration of all the perimeter surfaces (flanking surfaces) involved in the transmission of sound is an element of forecast uncertainty included in dependence on the type of separating constructional component. For a transition period, the Knauf system data sheets will specify both the test stand values as well as the calculated values used up to now.

Proof of Usability

Knauf system	Fire resistance	Ball impact safety	Sound Insulation	Structural engineering Knauf boards	Diamant / Silentboard
W111.de	AbP P-3310/563/07-MPA BS AbP P-3202-2028-MPA BS	903 1260 000 /man/Sgm	Knauf sound resistance proofs L 037-01.15 L 038-07.14 L 043-01.15 L 051-06.17	AbP P-1402/354/12-MPA BS	AbP P-1405/928/10-MPA BS
W112.de	AbP P-3310/563/07-MPA BS				
W113.de	AbP P-3310/563/07-MPA BS				
W115.de	AbP P-3310/563/07-MPA BS			AbP P-1403/355/12-MPA BS	AbP P-1100/490/15-MPA BS
W116.de	AbP P-3310/563/07-MPA BS			AbP P-1402/354/12-MPA BS	AbP P-1405/928/10-MPA BS

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.

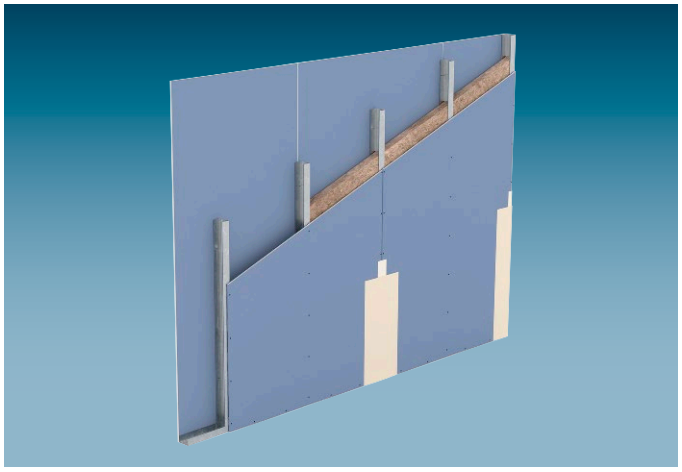
Notes on fire resistance

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

Metal stud partitions

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 materials can be installed in the wall cavity.

W111.de Single metal stud frame, single-layer cladding



The metal stud partition system **W111.de** consists of a single metal stud frame and is clad with a single layer of gypsum board on each side.

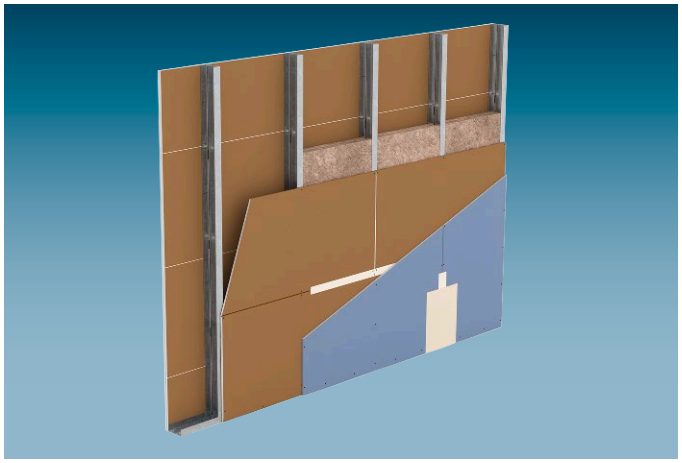
- Partition heights up to: 10.65 m
- Weighted airborne sound insulation index R_w up to: 60.9 dB
- Fire resistance class up to: F90

New

System variant with CW 70 and 15 mm Diamant cladding
Single-layer cladding with:

- Cantilever loads up to 0.7 kN/m
- Ceramic tiles without reduction of the stud partition spacing
- Mechanically equivalent in comparison to 2-layer systems with standard boards.
- Conventional prefabricated wall thickness of 100 mm

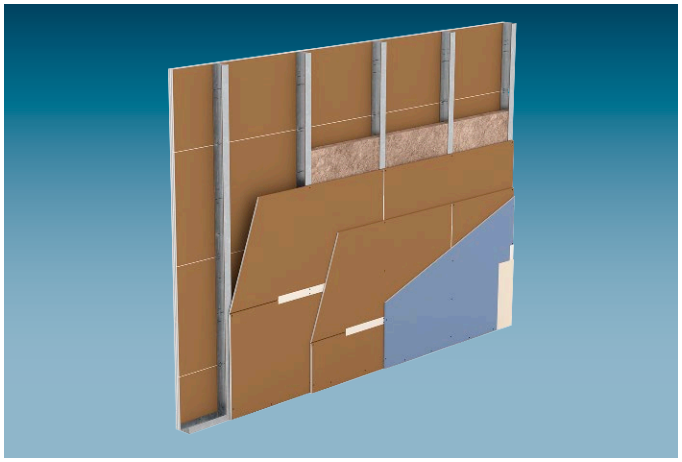
W112.de Single metal stud frame, double-layer cladding



The metal stud partition system **W112.de** consists of a single metal stud frame and is clad with two layers of gypsum board on each side.

- Partition heights up to: 12.00 m
- Weighted airborne sound insulation index R_w up to: 70.4 dB
- Fire resistance class up to: F90

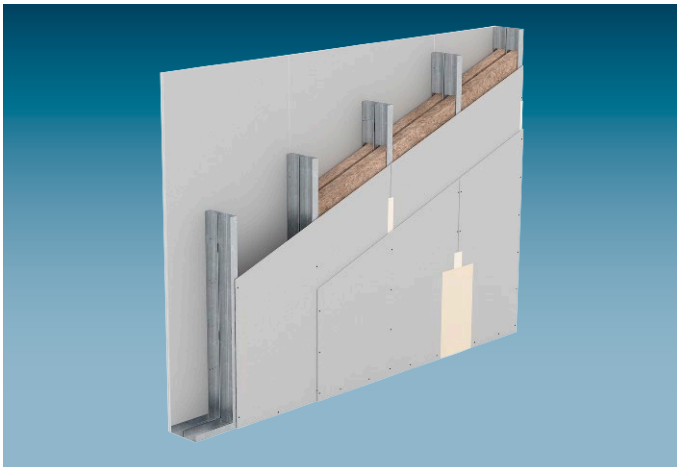
W113.de Single metal stud frame, triple-layer cladding



The metal stud partition system **W113.de** consists of a single metal stud frame and is clad with three layers of gypsum board on each side.

- Partition heights up to: 12.00 m
- Weighted airborne sound insulation index R_w up to: 71.6 dB
- Fire resistance class up to: F90

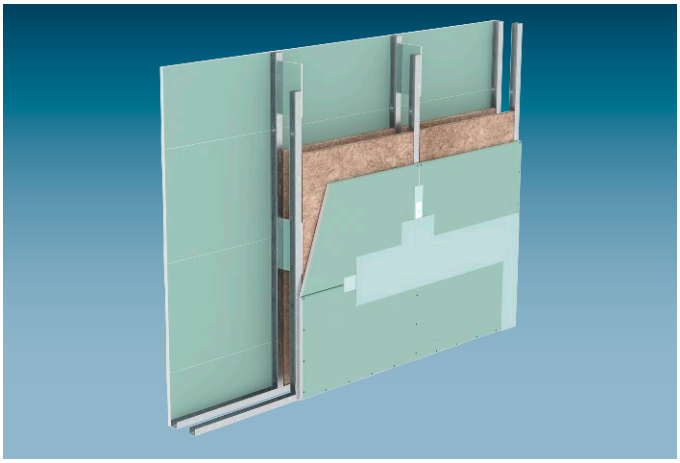
W115.de Decoupled double stud partition



The metal stud partition system **W115.de** consists of a decoupled double stud partition and is clad with two layers of gypsum board on each side.
The W115.de system is preferred for the application of party walls.

- Partition heights up to: 9.70 m
- Weighted airborne sound insulation index R_w up to: 74.4 dB
- Fire resistance class up to: F90

W116.de Linked double stud partition

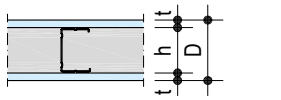
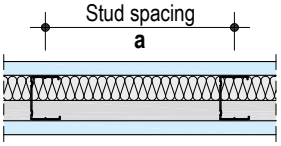


The metal stud partition system **W116.de** consists of a spaced and linked double stud partition and is clad with one or two layers of gypsum board on each side.
System W116.de is the preferred solution for the installation wall application.

- Partition heights up to: 8.00 m
- Weighted airborne sound insulation index R_w up to: 63.5 dB
- Fire resistance class up to: F90

System variants

W111.de Single metal stud partition, single-layer cladding

Knauf system Scheme drawings	Fire resistance class	Cladding per wall side: Knauf Bauplatte wallboard	Knauf Piano fire-resistant board	Massivbauplatte Solid Board	Diamant	Silentboard	Min. thickness t mm	Weight: Without insulation layer approx. kg/m²	Wall thickness D mm	Profiles Knauf CW: Cavity h mm	Insulation layer: Required fire resistance: Min. thickness mm	Min. density kg/m³	Sound insulation: Insulation layer Min. thickness mm	Sound reduction index R_w dB	$R_{w,R}$ dB
W111.de Metal stud partition														Single metal stud frame, single-layer cladding	
 Stud spacing a	–	•					**12.5**	22	75	50	–		40	44.2	42
									100	75			60	47.6	45
									125	100			80	50.0	48
						•	**12.5**	41	75	50	–		40	56.8	54
									100	75			60	59.7	57
									125	100			80	60.9	58
				•			**25**	48	100	50	–		40	50.2	48
									125	75			60	51.4	49
									150	100			80	52.8	50
	F30		•				**12.5**	25	75	50	Without		40	45.9	43
									100	75			60	48.3	46
									125	100			80	51.2	49
					•		**12.5**	29	75	50	Without		40	48.7	46
									100	75			60	51.5	49
									125	100			80	53.2	51
NEW					•		**15**	35	100	70	Without		60	52.8	50
 Stud spacing a	F90			•			**25**	48	100	50	Mineral wool S 40	50	40	50.2	48
									125	75			60	51.4	49
									150	100			80	52.8	50

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

Demands on the insulation layer (Insulation materials, e.g. from Knauf Insulation):

■ Required for fire resistance: See table

■ Fire resistance permissible: Mineral wool G plus

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

With ceramic tiles:

Minimum cladding	Stud spacing
12.5 mm Knauf gypsum boards	≤ 417 mm
15 mm Diamant	≤ 625 mm
18 mm Knauf gypsum boards	≤ 625 mm

plus **Extension of the fire resistance Proof of Usability**
■ When applied with insulation layer G
Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

Partition heights

Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile Metal gauge 0.6 mm	Stud spacing a mm	Knauf Bauplate wallboard / Feuerschutzplatte Knauf Piano fire-resistant board Without Fire resistance m	 With Fire resistance m	Massivbauplatte Solid Board Without Fire resistance m	 With Fire resistance m	Diamant / Silentboard Without Fire resistance m	 With Fire resistance m
CW 50	1000	–	–	2.80[1)]	2.80[1)]	–	–
	625	3.20[1)]	3.20[1)]	3.85	3.85	4.00	4.00
	417	3.85	3.85	–	–	4.00	4.00
	312.5	4.00	4.00	–	–	4.00	4.00
CW 70	625	–	–	–	–	4.65[2)]	4.65[2)]
	417	–	–	–	–	5.30[2)]	5.00[2)]
	312.5	–	–	–	–	5.70[2)]	5.00[2)]
CW 75	1000	–	–	4.00	4.00	–	–
	625	4.00	4.00	4.10	4.10	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	1000	–	–	4.30	4.30	–	–
	625	5.10	5.00	6.05	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	1000	–	–	6.05	5.00	–	–
	625	6.65	5.00	8.20	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	1000	–	–	8.10	5.00	–	–
	625	8.20	5.00	9.75	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

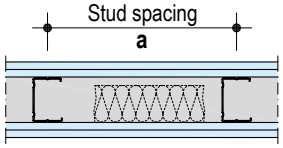
2) only with Diamant GKFI 15 mm

plus **Extension of the fire resistance Proof of Usability**
■ When applied with insulation layer (G)
Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

System variants

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

Knauf system Scheme drawings	Fire resistance class	Cladding per wall side: Knauf Bauplatte wallboard	Knauf Piano fire-resistant board	Massivbauplatte Solid Board	Diamant	Silentboard	Min. thickness t mm	Weight: Without insulation layer approx. kg/m²	Wall thickness D mm	Profiles Knauf CW: Cavity h mm	Insulation layer: Required fire resistance: Min. thickness mm	Min. density kg/m³	Sound insulation: Insulation layer: Min. thickness mm	Sound reduction index: R_w dB	$R_{w,R}$ dB
W112.de Metal stud partition														Single metal stud frame, double-layer cladding	
	F30	•					2x 12.5	41	100	50	Without		40	54.1	52
									125	75			60	55.9	53
									150	100			80	58.4	56
	F90		•				2x 12.5	48	100	50	Without		40	56.4	54
									125	75			60	57.2	55
									150	100			80	59.8	57
					•		2x 12.5	56	100	50	Without		40	59.4 60.1[1)]	57 58[1)]
									125	75			60	61.5 63.0[1)]	59 61[1)]
									150	100			80	63.2 64.5[1)]	61 62[1)]
						•	2x 12.5 plus	78	100	50	Without		40	67.5	65
									125	75			60	69.6	66
									150	100			80	70.4	67
			•				12.5 + 12.5	52	100	50	Without		40	59.0	56
					•				125	75			60	59.7	57
									150	100			80	63.0	60
				•			25 + plus	74	125	50	Without		40	64.4	62
					•		12.5		150	75			60	66.2	64
									175	100			80	68.0	66
						•	12.5 + plus	67	100	50	Without		40	66.0	63
					•		12.5		125	75			60	67.4	64
									150	100			80	67.6	65

1) Upper board layer stapled

- Always use Diamant as a covering layer with combined cladding

Demands on the insulation layer (Insulation materials, e.g. from Knauf Insulation):

- Required for fire resistance: None
- Fire resistance permissible: Mineral wool (G) plus
- Required for sound insulation reasons: Mineral wool (G) length-related flow resistance acc. to EN 29053: r ≥ 5 kPa • s/m²

plus Extension of the fire resistance Proof of Usability

- When applying the insulation layer (G) in conjunction with
  - Wall height > 5.00 m
  - Cladding with 2x 12.5 mm Knauf Bauplatten wallboards
- With horizontal board application

Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

Partition heights

Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Stud spacing	Knauf Wallboard 2x 12.5 mm / Feuerschutzplatte Knauf Piano fire-resistant board 2x 12.5 mm/ Feuerschutzplatte Knauf Piano 12.5 mm + Diamant 12.5 mm			Diamant 2 x 2.5 mm + Silentboard 2 x 12.5 mm Solid Board 25 mm + Diamant 12.5 mm/ Silentboard 12.5 mm + Diamant 12.5 mm	
		Without Fire resistance	With Fire resistance		Without Fire resistance	With Fire resistance
Metal gauge 0.6 mm	a		F30	F90		F90
	mm	m	m	m	m	m
CW 50	625	4.00	4.00	4.00	4.75	4.75
	417	4.00	4.00	4.00	5.40	5.00
	312.5	4.35	4.35	4.35	5.80	5.00
CW 75	625	5.05	5.00	5.05	7.20	7.00
	417	5.95	5.00	5.60	7.85	7.00 plus
	312.5	6.50	5.00	5.60	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

All board layers fastened to frame with screws.
With stapled upper board layer: Wall heights acc. to system W111.de.

Ball impact safety

Ball impact safety acc. to DIN 18032-3

plus **Extension of the fire resistance Proof of Usability**

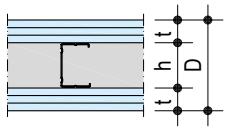
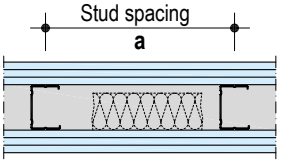
- When applying the insulation layer (G) in conjunction with
  - Wall height > 5.00 m
  - Cladding with 2x 12.5 mm Knauf Bauplatten wallboards
- With application of wall heights with CW 75 and cladding of Diamant/Silentboard/Solidboard
- With horizontal board application

Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

System variants

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

Knauf system	Fire resistance class	Cladding per wall side						Weight	Wall thickness	Profiles Knauf CW	Insulation layer		Sound insulation		
Scheme drawings		Knauf Bauplatte wallboard	Knauf Piano fire-resistant board	Massivbauplatte Solid Board	Diamant	Silentboard	Min. thickness t mm	Without insulation layer approx. kg/m²	D mm	Cavity h mm	Required fire resistance Min. thickness mm	Min. density kg/m³	Insulation layer Min. thickness mm	Sound reduction index R_w dB	$R_{w,R}$ dB
W113.de Metal stud partition															Single metal stud frame, triple-layer cladding
	F30	•					3x 12.5	61	125	50	Without		40	58.7	56
									150	75			60	58.7	56
									175	100			80	63.9	91
	F90		•				3x 12.5	70	125	50	Without		40	61.0	59
									150	75			60	61.1	59
									175	100			80	64.5	62
					•		3x 12.5	82	125	50	Without		40	64.8 66.6[1)]	62 64[1)]
									150	75			60	66.3 67.1[1)]	64 65[1)]
									175	100			80	67.7 68.0[1)]	65 66[1)]
						•	2x 12.5 + 12.5 plus	104	125	50	Without		40	71.3	69
					•				150	75			60	71.6	69
									175	100			80	71.3	69

Stud spacing a

1) Upper board layer stapled

- Always use Diamant as a covering layer with combined cladding

Demands on the insulation layer (Insulation materials, e.g. from Knauf Insulation):

- Required for fire resistance: None
- Fire resistance permissible: Mineral wool G plus
- Required for sound insulation reasons: Mineral wool G length-related flow resistance acc. to EN 29053: r ≥ 5 kPa • s/m²

plus Extension of the fire resistance Proof of Usability
- When applied with insulation layer G
- With horizontal board application

Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

Partition heights

Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Stud spacing	Knauf Wallboard 3x 12.5 mm / Feuerschutzplatte Knauf Piano fire-resistant board 3x 12.5 mm			Diamant 3 x 2.5 mm / Silentboard 2 x 12.5 mm + Diamant 12.5 mm		
		Without Fire resistance	With Fire resistance		Without Fire resistance	With Fire resistance	
Metal gauge 0.6 mm	a mm		F30	F90		F90	
		m	m	m	m	m	
CW 50	625	5.20	5.00	5.00	7.65	7.65	
	417	6.05	5.00	5.00	8.15	8.15	plus
	312.5	6.50	5.00	5.00	8.45	8.45	
CW 75	625	7.65	5.00	5.60	9.85	9.00	
	417	8.35	5.00	5.60	10.20	9.00	plus
	312.5	8.75	5.00	5.60	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	

All board layers fastened to frame with screws.
With stapled upper board layer: Wall heights acc. to system W112.de.

Ball impact safety

Ball impact safe acc. to DIN 18032-3

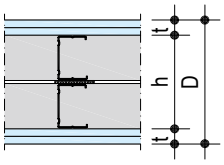
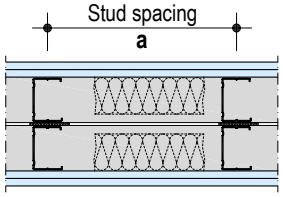
plus **Extension of the fire resistance Proof of Usability**
- When applied with insulation layer G
- With application of wall heights with CW 50/CW 75 and cladding of Diamant/Silentboard
- With horizontal board application

Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

System variants

W115.de Decoupled double stud partition

Knauf system Scheme drawings	Fire resistance class	Cladding per wall side: Knauf Bauplatte wallboard	Knauf Piano fire-resistant board	Massivbauplatte Solid Board	Diamant	Silentboard	Min. thickness t mm	Weight: Without insulation layer approx. kg/m²	Wall thickness D mm	Profiles Knauf CW: Cavity h mm	Insulation layer: Required fire resistance: Min. thickness mm	Min. density kg/m³	Sound insulation: Insulation layer: Min. thickness mm	Sound reduction index: R_w dB	$R_{w,R}$ dB
W115.de Metal stud partition															Decoupled double stud partition
	**F30**	•					**2x 12.5**	44	155	2x 50 105	Without		2x 40	64.7	62
									205	2x 75 155			2x 60	66.6	64
									255	2x 100 205			2x 80	67.6	65
	**F90**		•				**2x 12.5**	50	155	2x 50 105	Without		2x 40	67.3	64
									205	2x 75 155			2x 60	69.7	67
									255	2x 100 205			2x 80	71.9	69
					•		**2x 12.5**	59	155	2x 50 105	Without		2x 40	69.7	66
									205	2x 75 155			2x 60	72.2	69
									255	2x 100 205			2x 80	74.4	71
			•				**12.5 + 12.5**	55	155	2x 50 105	Without		2x 40	68.0	65
					•				205	2x 75 155			2x 60	70.6	68
									255	2x 100 205			2x 80	73.2	70
					•	•	**12.5 + 12.5** plus	70	155	2x 50 105	Without		2x 40	74.0	71

- Always use Diamant as a covering layer with combined cladding

Demands on the insulation layer (Insulation materials, e.g. from Knauf Insulation):

- Required for fire resistance: None
- Fire resistance permissible: Mineral wool (G) plus
- Required for sound insulation reasons: Mineral wool (G) length-related flow resistance acc. to EN 29053: r ≥ 5 kPa • s/m²

plus **Extension of the fire resistance Proof of Usability**
- When applying the insulation layer (G) in conjunction with
  - Wall height > 5.00 m
  - Cladding with 2x 12.5 mm Knauf Bauplatten wallboards
- With horizontal board application

Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

Partition heights

Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Stud spacing	Knauf Wallboard 2x 12.5 mm / Feuerschutzplatte Knauf Piano fire-resistant board 2x 12.5 mm			Feuerschutzplatte Knauf Piano fire-resistant board 12.5 mm + Diamant 12.5 mm		Diamant 2x 12.5 mm / Silentboard 12.5 mm + Diamant 12.5 mm plus	
		Without Fire resistance	With Fire resistance		Without Fire resistance	With Fire resistance	Without Fire resistance	With Fire resistance
Metal gauge 0.6 mm	a mm		F30	F90		F90		F90
		m	m	m	m	m	m	m
CW 50	625	2.95[1)]	2.95[1)]	2.95[1)]	3.30[1)]	3.30[1)]	3.35[1)]	3.35[1)]
	417	3.60[1)]	3.60[1)]	3.60[1)]	3.95	3.95	4.00	4.00
	312.5	4.00	4.00	4.00	4.00	4.00	4.00	4.00
CW 75	625	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	417	4.00	4.00	4.00	4.30	4.30	4.40	4.40
	312.5	4.55	4.55	4.55	4.85	4.85	4.95	4.95
CW 100	625	4.50	4.50	4.50	4.85	4.85	4.95	4.95
	417	5.40	5.00	5.40	5.80	5.80	5.90	5.90
	312.5	6.15	5.00	6.15	6.50	6.50	6.65	6.65
CW 125	625	5.80	5.00	5.80	6.20	6.20	6.30	6.30
	417	6.95	5.00	6.95	7.35	7.00	7.50	7.00
	312.5	7.75	5.00	7.00	8.15	7.00	8.35	7.00
CW 150	625	7.15	5.00	7.00	7.55	7.00	7.70	7.00
	417	8.40	5.00	7.00	8.85	7.00	9.00	7.00
	312.5	9.25	5.00	7.00	9.60	7.00	9.70	7.00

1) only for installation zone 1

Ball impact safety

Ball impact safe acc. to DIN 18032-3

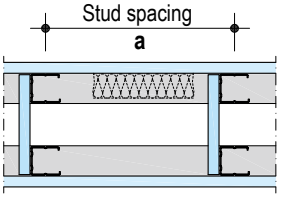
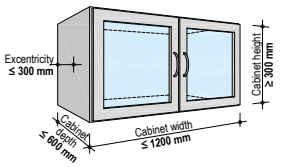
plus **Extension of the fire resistance Proof of Usability**
- With horizontal board application

Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

System variants

W116.de Linked double stud partition

Knauf system Scheme drawings	Fire resistance class	Cladding per wall side: Knauf Bauplatte wallboard	Knauf Piano fire-resistant board	Massivbauplatte Solid Board	Diamant	Silentboard	Min. thickness t mm	Weight: Without insulation layer approx. kg/m²	Wall thickness D mm	Profiles Knauf CW: Cavity h mm	Insulation layer: Required fire resistance: Min. thickness mm	Min. density kg/m³	Sound insulation: Insulation layer: Min. thickness mm	Sound reduction index: R_w dB	$R_{w,R}$ dB
W116.de Metal stud partition															Linked double stud partition
	–				•		**18**	46	≥ 141	2x 50 ≥ 105	–		40	52.5	50
													2x 40	56.0	54
				•			**25**	52	≥ 155	2x 50 ≥ 105	–		40	–	–
													2x 40	–	–
	F30	•					**2x 12.5**	45	≥ 155	2x 50 ≥ 105	Without		40	54.0	52[1)]
	F90		•				**2x 12.5**	52	≥ 155	2x 50 ≥ 105	Without		40	*54*	*52*
					•		**2x 12.5**	60	≥ 155	2x 50 ≥ 105	Without		40	62.5	60
													2x 40	63.5	61

1) Measured with a board weight of approx. 9 kg/m².

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

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

Demands on the insulation layer (Insulation materials, e.g. from Knauf Insulation):

- Required for fire resistance: None
- Fire resistance permissible: Mineral wool G plus
- Required for sound insulation reasons: Mineral wool G length-related flow resistance acc. to EN 29053: r ≥ 5 kPa • s/m²

plus Extension of the fire resistance Proof of Usability
- When applied with insulation layer G

Prior consultation is recommended acc. to page 5.

Note Observe the notes on page 4.

Partition heights

Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile	Stud spacing	Knauf Wallboard 2x 12.5 mm / Feuerschutzplatte Knauf Piano fire-resistant board 2x 12.5 mm			Massivbauplatte Solid Board 25 mm	Diamant 18 mm	Diamant 2x 12.5 mm	
		Without Fire resistance	With Fire resistance		Without Fire resistance	Without Fire resistance	Without Fire resistance	With Fire resistance
Metal gauge 0.6 mm	a mm		F30	F90				F90
		m	m	m	m	m	m	m
CW 50	1000	–	–	–	4.00	–	–	–
	625	5.05	5.00	5.00	–	5.60	7.20	5.00
CW 75	1000	–	–	–	4.30	–	–	–
	625	7.15	5.00	5.60	–	7.70	8.00	5.60
CW 100	1000	–	–	–	6.05	–	–	–
	625	8.00	5.00	7.00	–	8.00	8.00	7.00

Ball impact safety

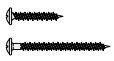
Ball impact safe acc. to DIN 18032-3 with cladding 2x 12.5 mm

Note Observe the notes on page 4.

Fixing loads

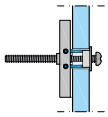
Up to 40 kg – Knauf multi-purpose screws FN

With direct screw fastening in the cladding

Cladding thickness	Knauf Multi-purpose screws	Maximum screw load capacity		
mm		Knauf GKB kg	Knauf GKF kg	Diamant kg
12.5	FN 4.3 x 35	**8**	**10**	**12**
15	FN 4.3 x 35	**10**	**12**	**15**
18	FN 4.3 x 35 / FN 4.3 x 65	**–**	**14**	**20**
2x 12.5	FN 4.3 x 35 / FN 4.3 x 65	**16**	**20**	**40**

Up to 65 kg cavity dowels

For fixing of cantilever loads up to 0.4 kN/m or 0.7 kN/m

Cladding thick-ness	Maximum dowel loading capacity Knauf Cavity Dowel Hartmut Screw M5 		
mm	Knauf GKB kg	Knauf GKF kg	Diamant / Silentboard kg
12.5	**20**	**30**	**40**
15	**–**	**35**	**50**
18	**–**	**40**	**60**
25	**–**	**60**	**–**
2x 12.5	**45**	**60**	**75**
2x 15	**–**	**70**	**75**

- Dowel load capacity of other fasteners acc. to manufacturer`s specifications.

Cantilever loads

- According to DIN 18183-1, partitions can be loaded at any position by cantilever loads (e.g. TVs, wall cupboards) in accordance with the specifications on page 19.
- 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 19).
- Fixing spacing of the dowels according to DIN 18183-1: ≥ 75 mm; (Knauf recommendation for approach to the full loadbearing capacity at ≥ 250 mm).
- Observe the permissible cantilever load of the wall system.

Up to 1.5 kN/m – Sanistands / Traverses / Diamant Steel GKFI

Cantilever loads above 0.4 or 0.7 kN/m up to 1.5 kN/m wall length must be transferred as surface traverses to the substructure using sanistands, traverses or Diamant Steel GKFI.

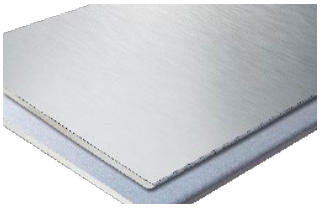
Steel anchoring traverse – Loads up to 1.0 kN/m wall length

Steel anchoring traverse with gypsum fibre insert – Loads up to 1.5 kN/m wall length

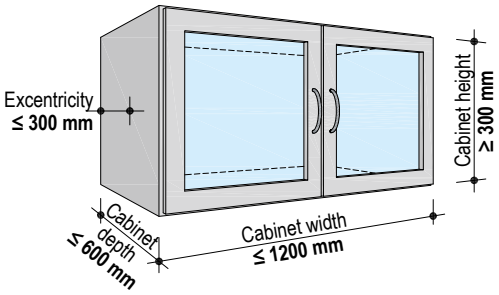
Multi-purpose traverse – Loads up to 1.5 kN/m wall length

Diamant Steel GKFI – Loads up to 1.5 kN/m wall length

See page 44



Wall mounted cabinet:



Type and usage of the fastners

Lightweight objects:

- e.g. Picture frames and mirrors up to 13 kg (12.5 mm Diamant) or up to 40 kg (2x 12.5 mm Diamant) per screw using Knauf multi-purpose screws FN.

Higher loads:

- e.g. Kitchen cupboards up to 75 kg per dowel (2x 12.5 mm Diamant) using Knauf cavity dowels Hartmut.

Note	Further details for planning and application see Technical information VT03.de Fastening of loads to Knauf Wall and Ceiling Systems

Up to 0.4 kN/m (40 kg/m) wall length: Cladding thickness ≥ 12.5 mm Knauf Boards and Diamant

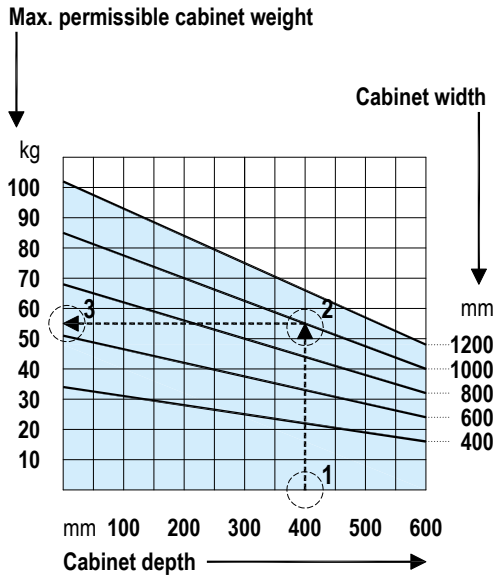
Maximum permissible cabinet weight (kg) acc. to table

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

Assume the worst-case value with intermediate values or use the diagram procedure

or

Max. permissible cabinet weight (kg) according to diagram



Up to 0.7 kN/m (70 kg/m) wall length: Cladding thickness ≥ 15 mm Diamant / ≥ 18 mm Knauf boards

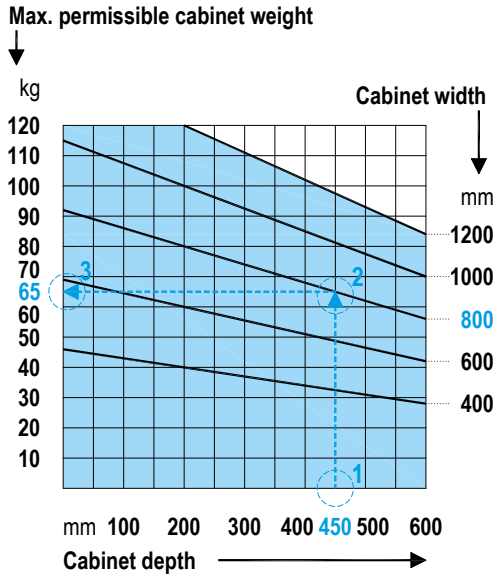
Maximum permissible cabinet weight (kg) acc. to table

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

Assume the worst-case value with intermediate values or use the diagram procedure

or

Max. permissible cabinet weight (kg) according to diagram



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 permissible cantilever load
- Cabinet depth 400 mm, cabinet width 1000 mm → Maximum cabinet weight: **55 kg** (see table above)
- Cladding thickness 12.5 mm, Knauf Cavity Dowel Hartmut → Maximum dowel load: **20 kg** (See table page 18)

Required number of dowels: 55 kg 20 kg = 2.75 → **3 dowels** are the minimum requirement

According to the diagram

- 0.7 kN/m permissible cantilever load
- Cabinet depth 450 mm, cabinet width 800 mm
- With cabinet depth 450 mm (1) vertically upwards, up to the cabinet width line 800 mm (2) at the intersection point horizontal to the left – read off value (3): → Maximum cabinet weight: **65 kg** (see diagram above)
- Cladding thickness 2x 12.5 mm, Knauf Cavity Dowel Hartmut → Maximum dowel load: **55 kg** (See table page 18)

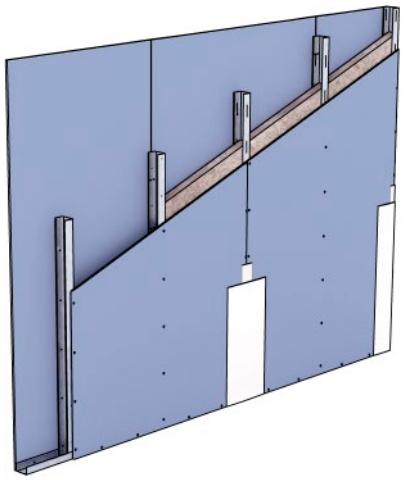
Required number of dowels: **65 kg 55 kg = 1.18** → **2 dowels** are the minimum requirement

Details

Scale 1:5

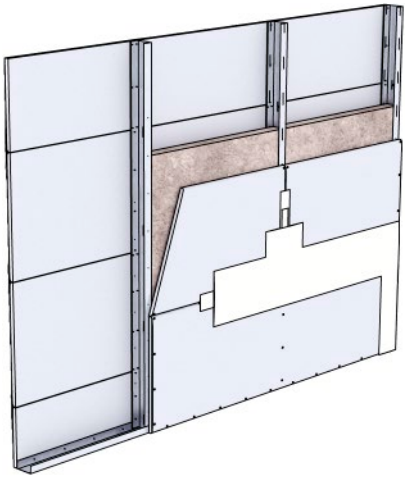
W111.de-P1 Vertical board layer

e.g. 12.5 mm Diamant



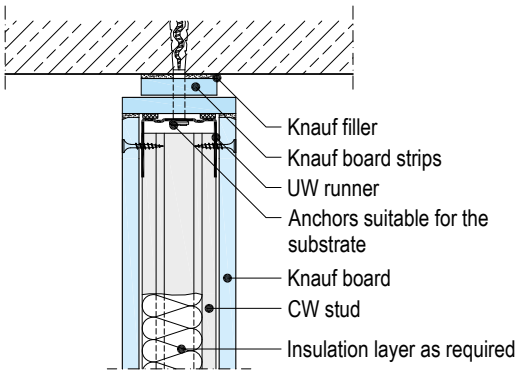
W111.de-P2 Horizontal board layer

25 mm Solid Board



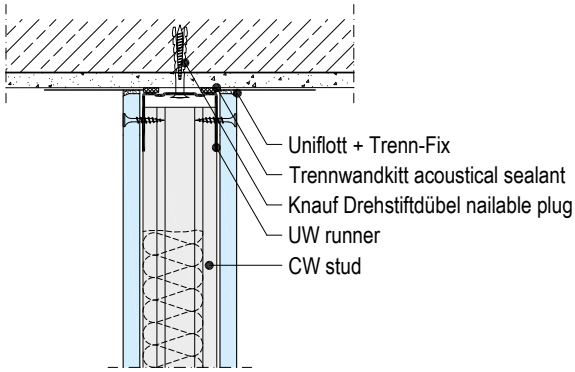
W111.de VO3 Ceiling connection with shadow gap

Vertical section I **Without** fire resistance



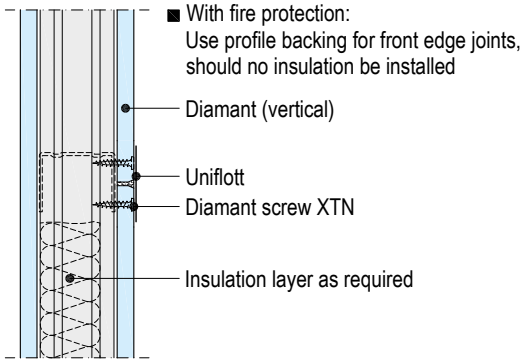
W111.de VO1 Ceiling connection to solid ceiling

Vertical section



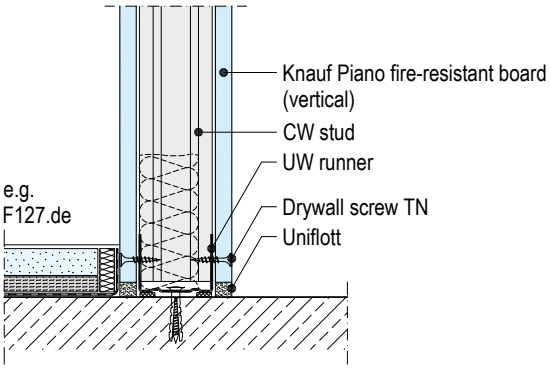
W111.de-VM1 Board joint

Vertical section



W111.de-VU1 Connection to basic floor

Vertical section

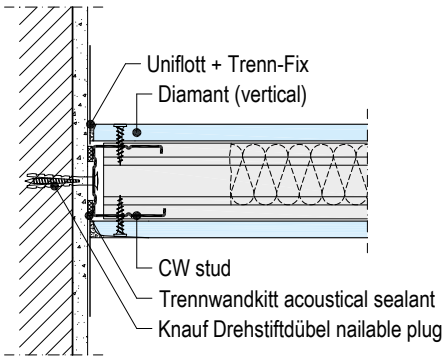


Details

Scale 1:5

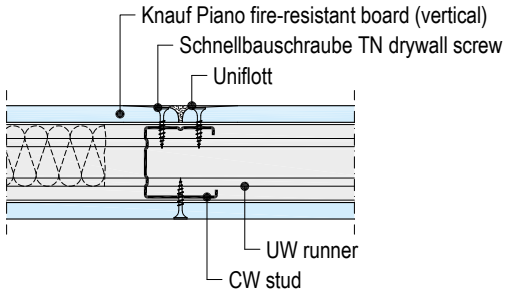
W111.de-A1 Connection to solid wall

Horizontal section



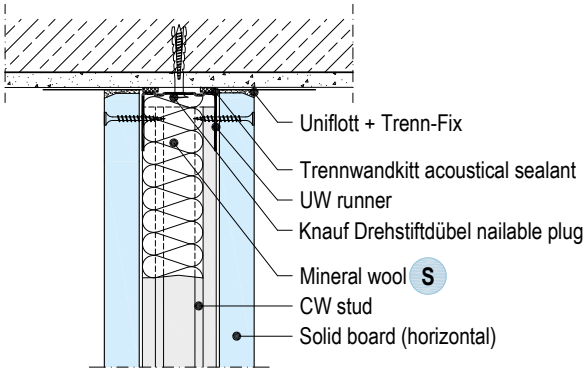
W111.de-B1 Board joint

Horizontal section



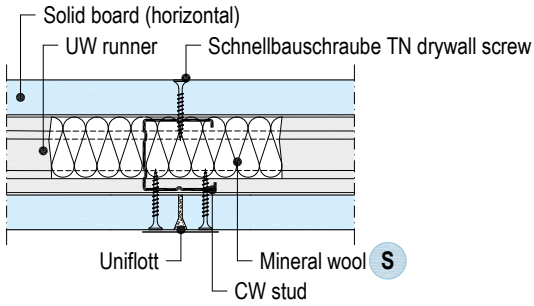
W111.de VO4 Ceiling connection to solid ceiling

Vertical section



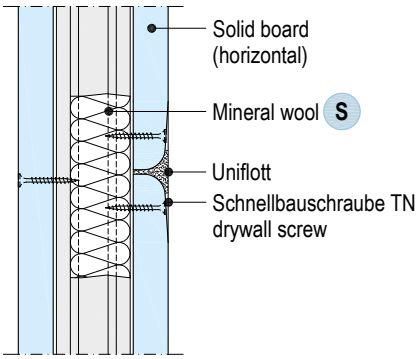
W111.de-B2 Board joint

Horizontal section



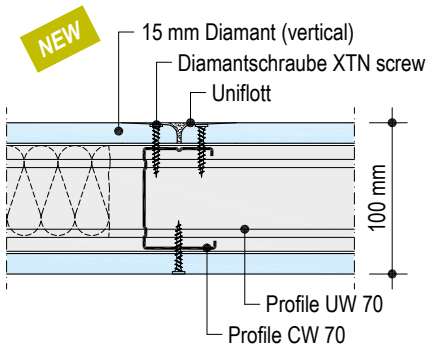
W111.de-VM2 Board joint

Vertical section



W111.de-B3 Board joint

Horizontal section

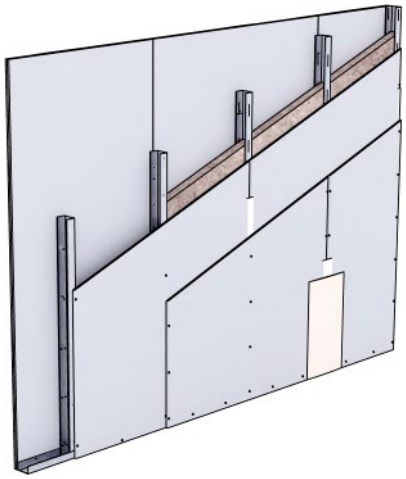


Details

Scale 1:5

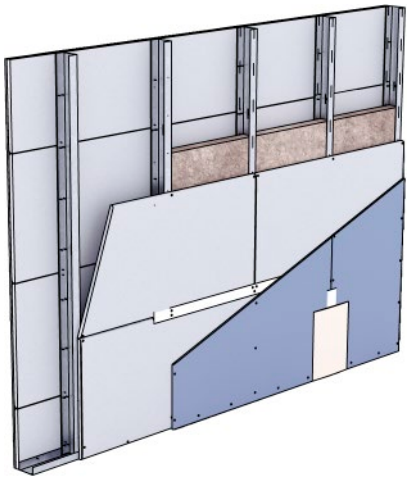
W112.de-P1 Vertical board layer

e.g. 2X 12.5 mm Feuerschutzplatte Knauf Piano fire-resistant board



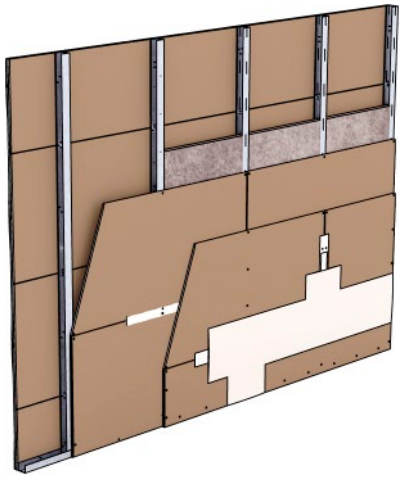
W112.de-P2 Board layer 1 horizontal, board layer 2 vertical

25 mm Solid Board + 12.5 mm Diamant



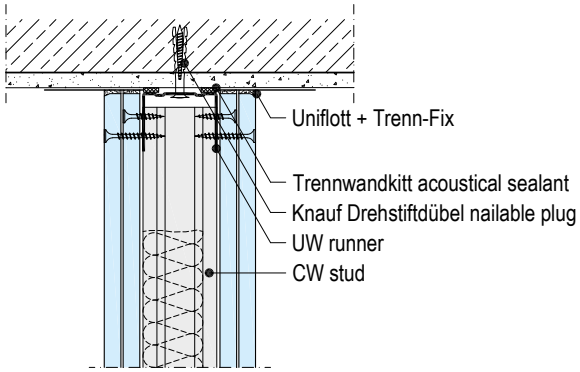
W112.de-P3 Horizontal board layers

2x 12.5 mm Silentboard



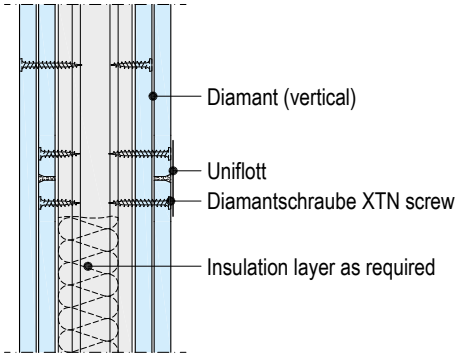
W112.de VO1 Ceiling connection to solid ceiling

Vertical section



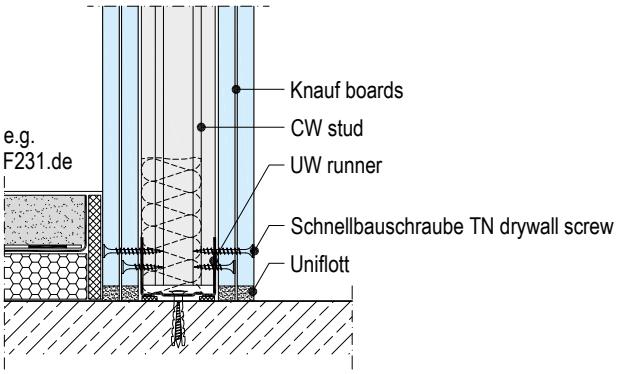
W112.de-VM1 Board joint

Vertical section



W112.de-VU1 Connection to basic floor

Vertical section

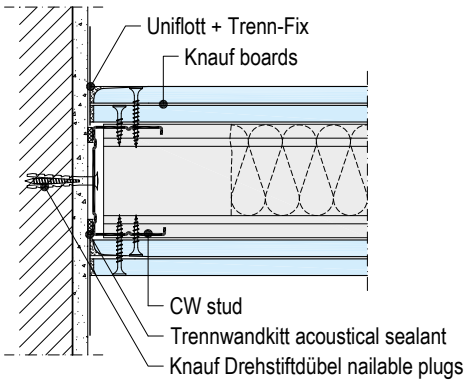


Details

Scale 1:5

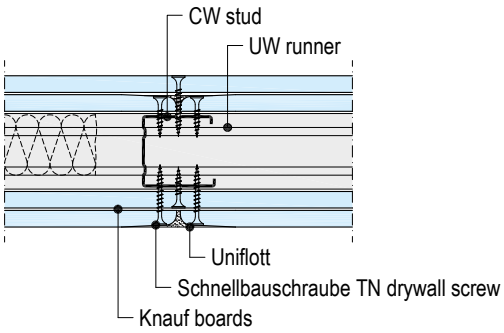
W112.de-A1 Connection to solid wall

Horizontal section



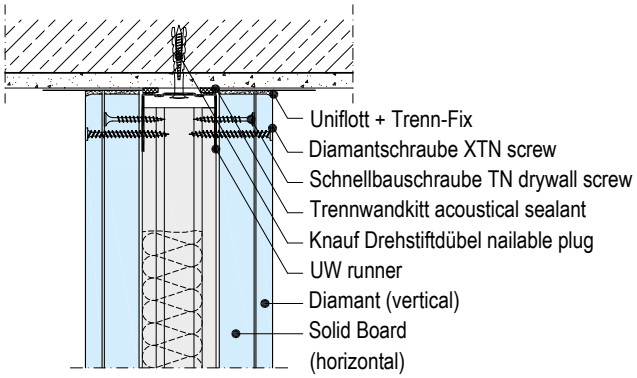
W112.de-B1 Board joint

Horizontal section



W112.de VO13 Ceiling connection to solid ceiling

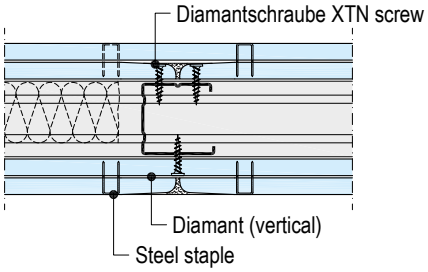
Vertical section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

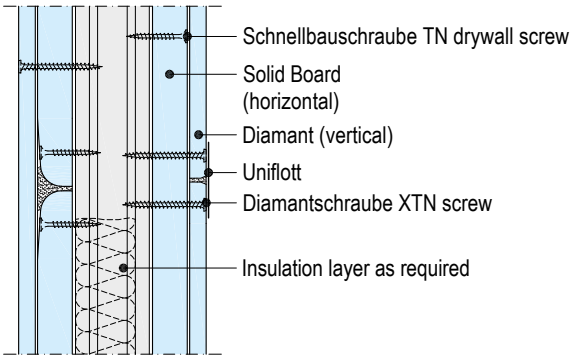
W112.de-B3 Board joint – top board layer stapled

Horizontal section



W112.de-VM2 Board joint

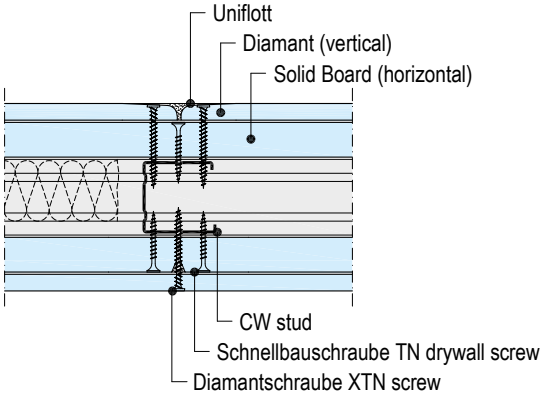
Vertical section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-B4 Board joint

Horizontal section



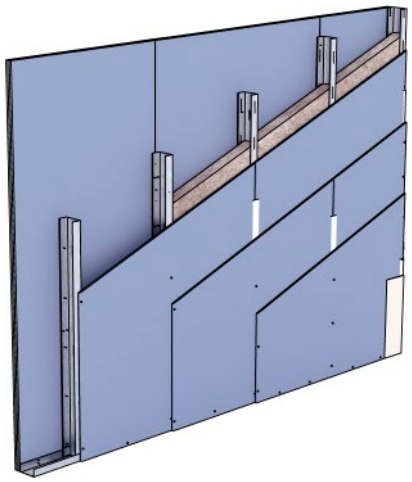
plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Details

Scale 1:5

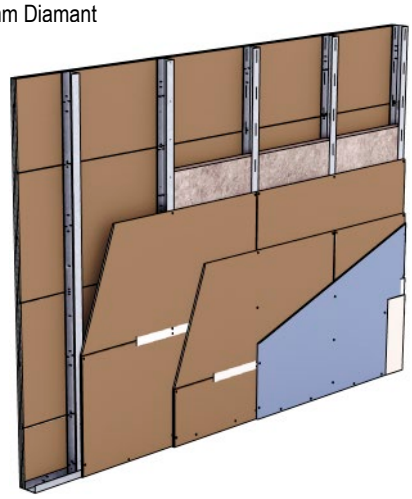
W113.de-P1 Vertical board layer

e.g. 3x 12.5 mm Diamant



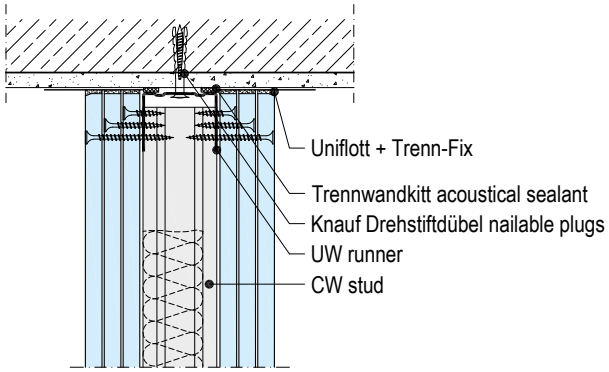
W113.de-P2 Board layers 1 and 2 horizontal, board layer 3 vertical

2x 12.5 mm Silentboard
+
12.5 mm Diamant



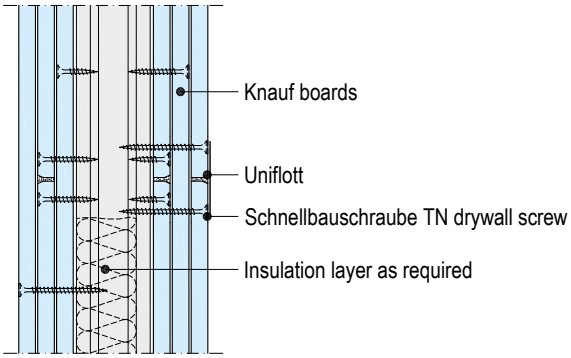
W113.de VO1 Ceiling connection to solid ceiling

Vertical section



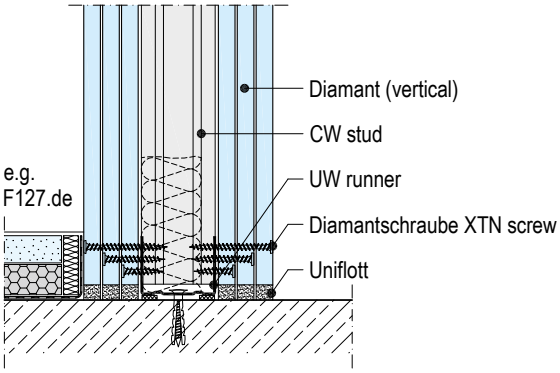
W113.de-VM1 Board joint

Vertical section



W113.de-VU1 Connection to basic floor

Vertical section

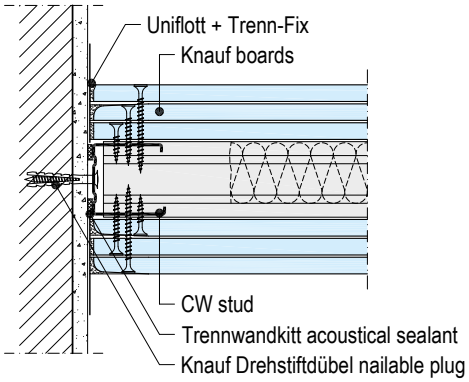


Details

Scale 1:5

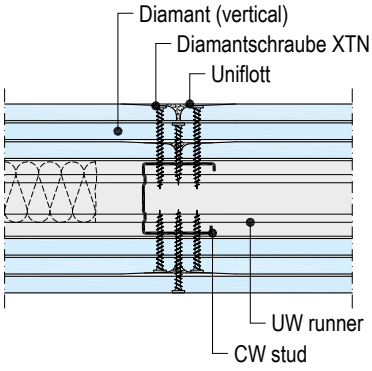
W113.de-A1 Connection to solid wall

Horizontal section



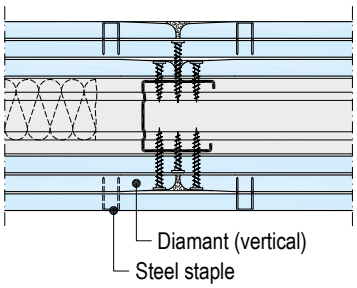
W113.de-B1 Board joint

Horizontal section



W113.de-B3 Board joint – top board layer stapled

Horizontal section



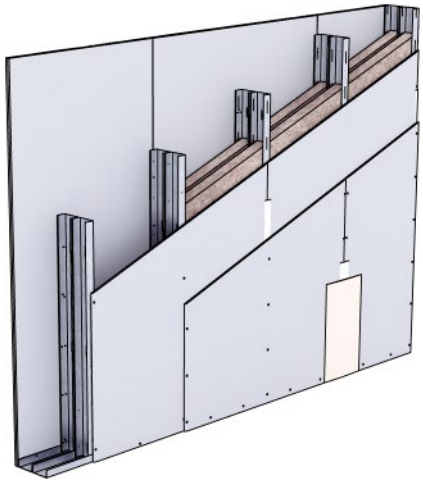
W115.de Decoupled double stud partition

Details

Scale 1:5

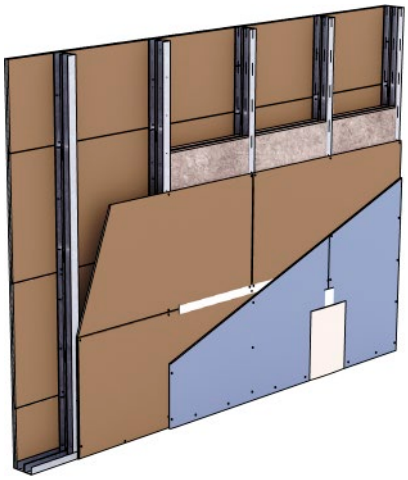
W115.de-P1 Vertical board layer

e.g. 2X 12.5 mm Feuerschutzplatte Knauf Piano fire-resistant board



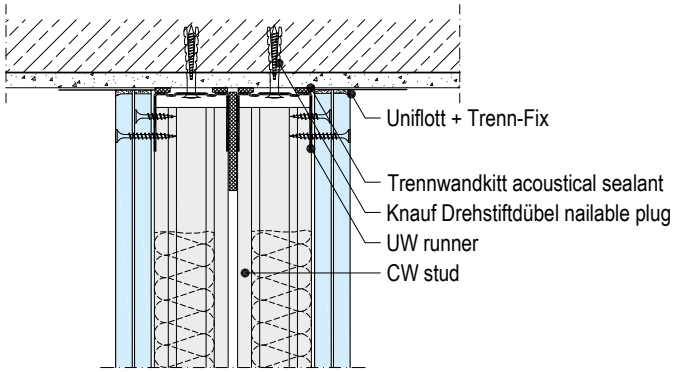
W115.de-P2 Board layer 1 horizontal, board layer 2 vertical

12.5 mm Silentboard + 12.5 mm Diamant



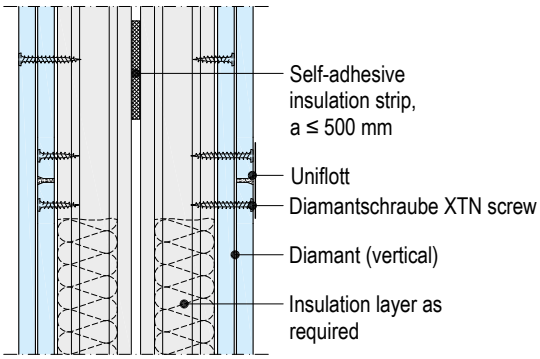
W115.de VO1 Ceiling connection to solid ceiling

Vertical section



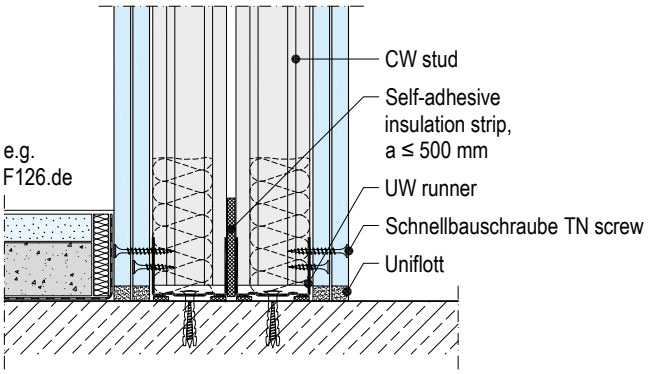
W115.de-VM1 Board joint

Vertical section



W115.de-VU1 Connection to basic floor

Vertical section

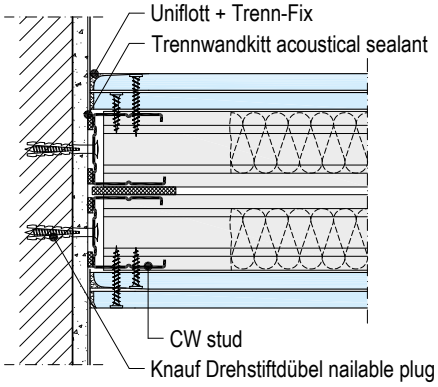


Details

Scale 1:5

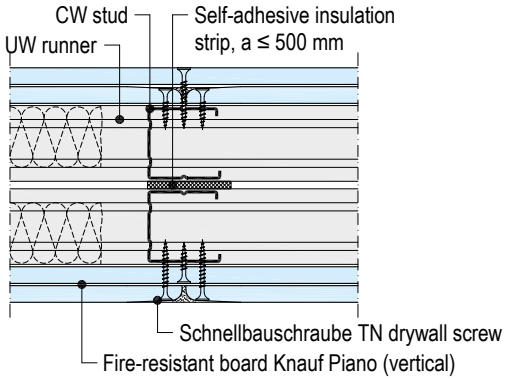
W115.de-A1 Connection to solid wall

Horizontal section



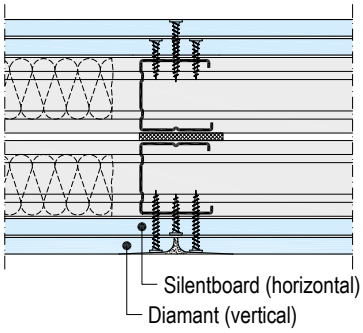
W115.de-B1 Board joint

Horizontal section



W115.de-B2 Board joint

Horizontal section



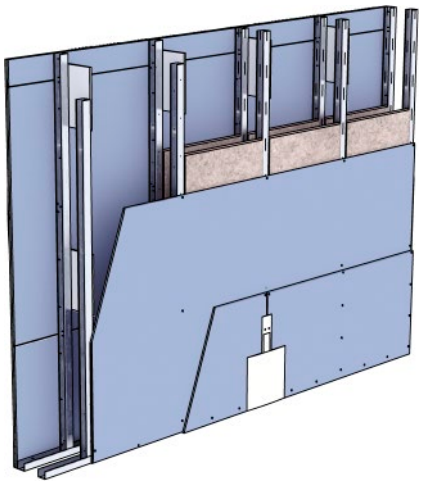
plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Details

Scale 1:5

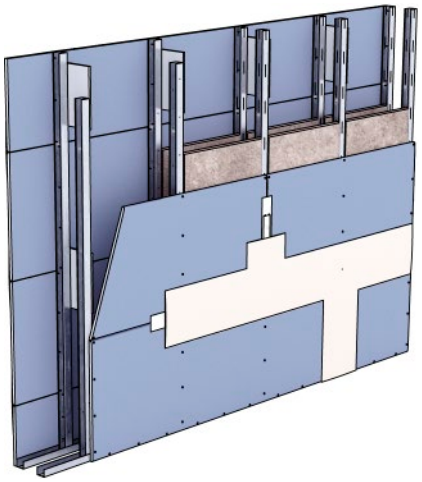
W116.de-P1 Horizontal board layers

e.g. 2x 12.5 mm Diamant



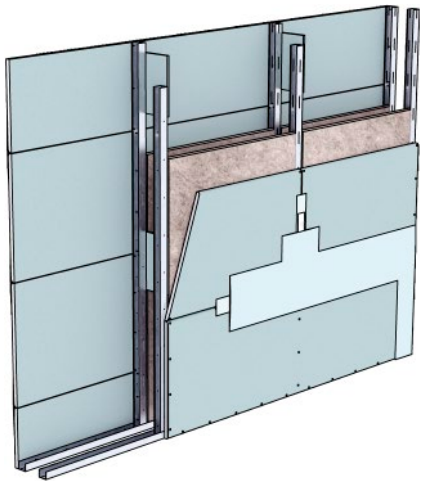
W116.de-P2 Horizontal board layer

18 mm Diamant



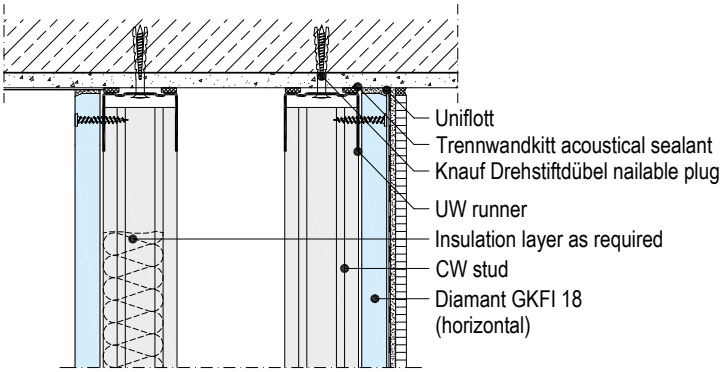
W116.de-P3 Horizontal board layer

25 mm Solid Board



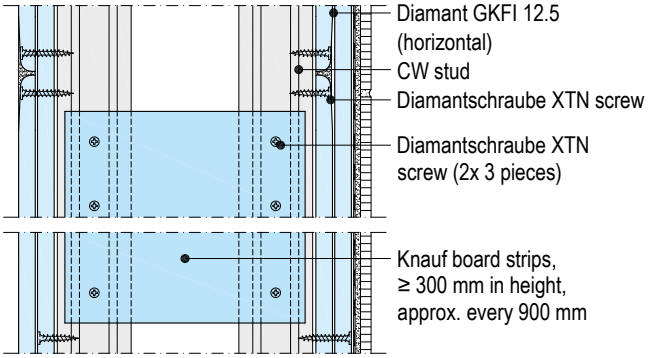
W116.de VO10 Ceiling connection to solid ceiling

Vertical section I **Without** fire resistance



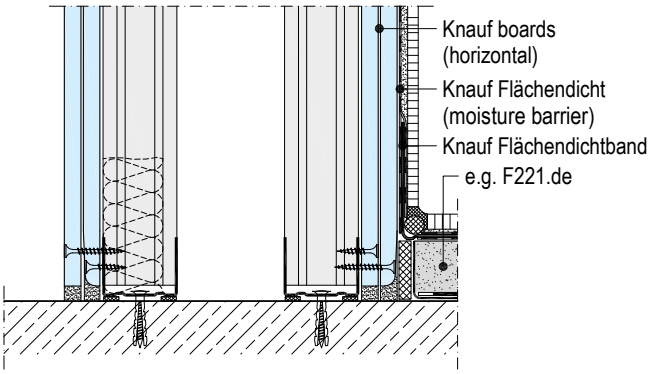
W116.de-VM1 Board joint

Vertical section



W116.de-VU1 Connection to basic floor

Vertical section



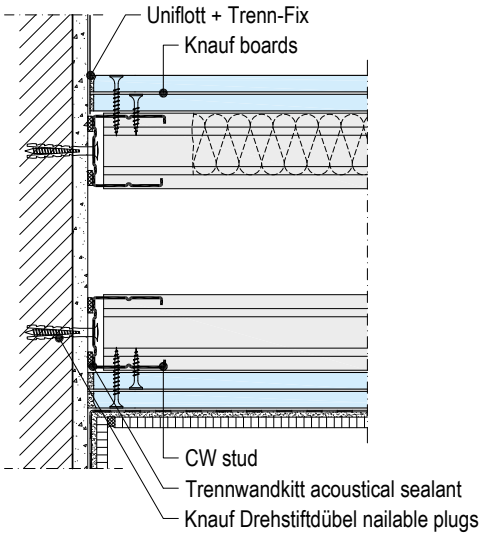
■ Connection to areas of high humidity see page 37

Details

Scale 1:5

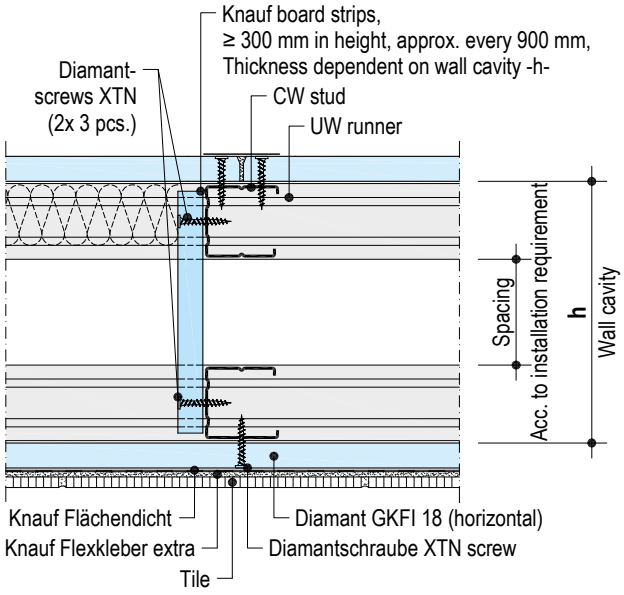
W116.de-A1 Connection to solid wall

Horizontal section



W116.de-B10 Board joint

Horizontal section I **Without** fire resistance

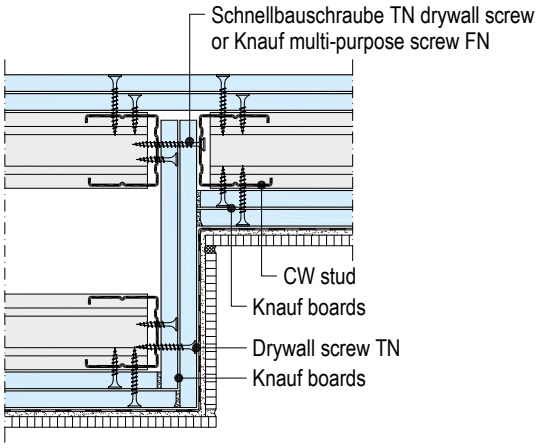


Wall breaks, detached wall end, corners

Scale 1:5

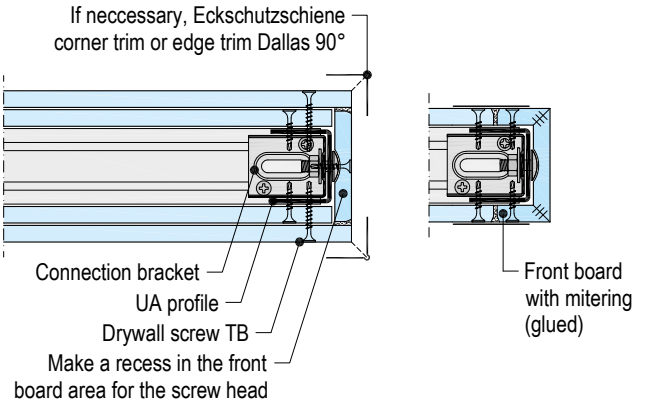
W116.de-D1 Wall break

Horizontal section I **Without** fire resistance



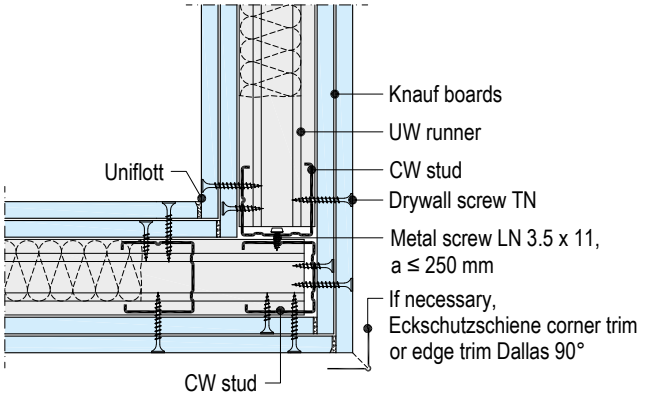
W112.de-END2 Detached wall end

Horizontal section I **Without** fire resistance



W112.de-D5 Corner

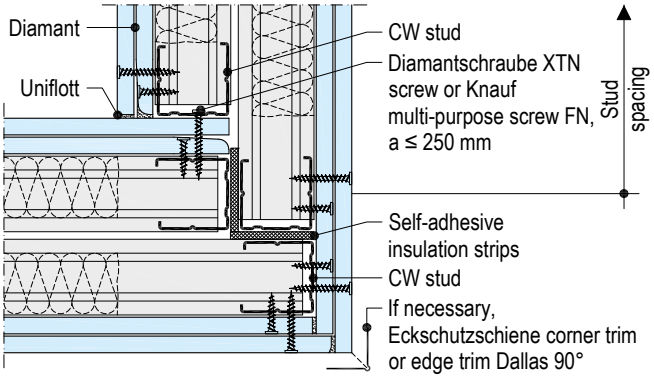
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W115.de-D1 Corner

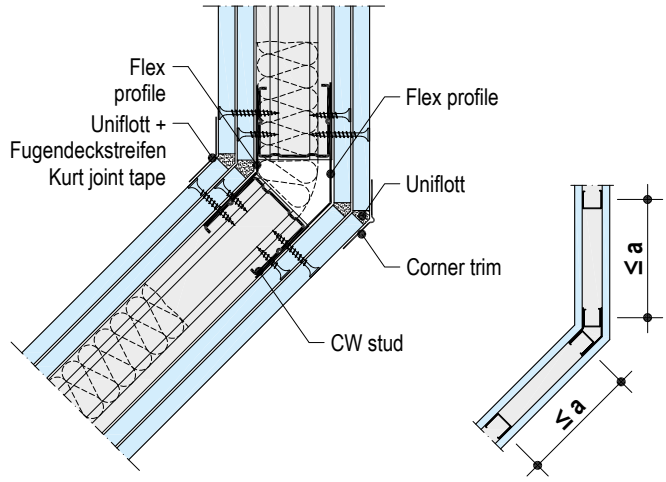
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-D2 Corner – CW studs + Flex profiles

Horizontal section

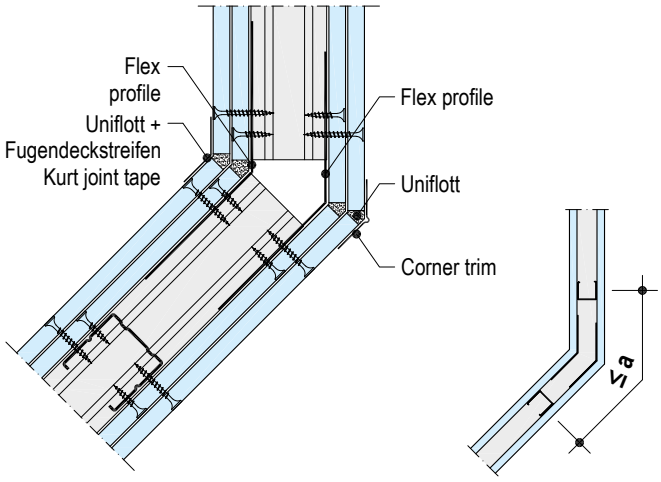


- a = stud spacing
- Installation aid: Connect flex profiles by crimping to the CW studs or UW runners

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-D3 Corner – Flex profiles

Horizontal section I **Without** fire resistance



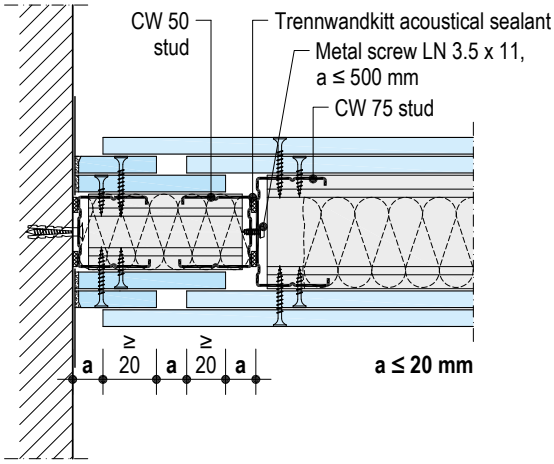
- a = stud spacing
- Installation aid: Connect flex profiles by crimping to the CW studs or UW runners

Connection to wall

Scale 1:5 I Dimensions in mm

W112.de-A9 Connection to solid wall, floating

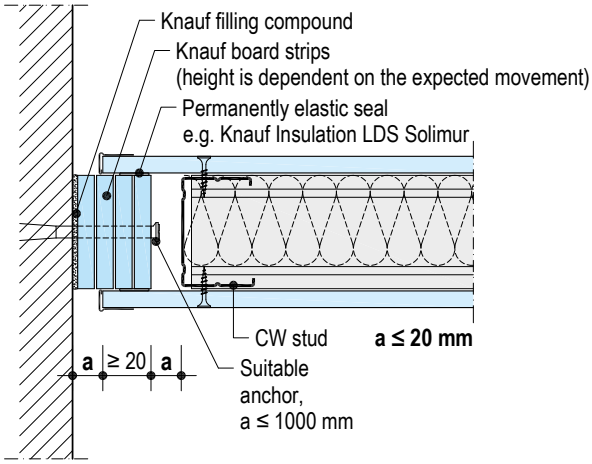
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W111.de-A2 Connection to solid wall, floating

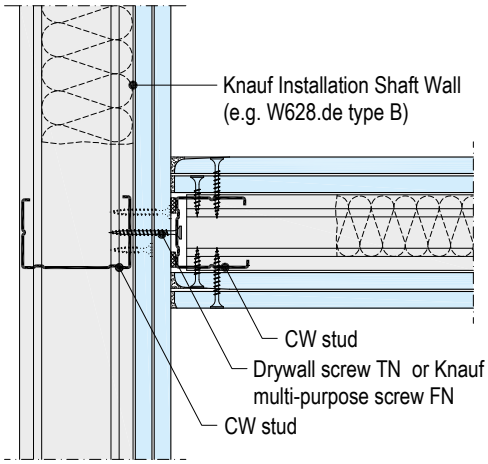
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-A7 Connection to installation shaft wall

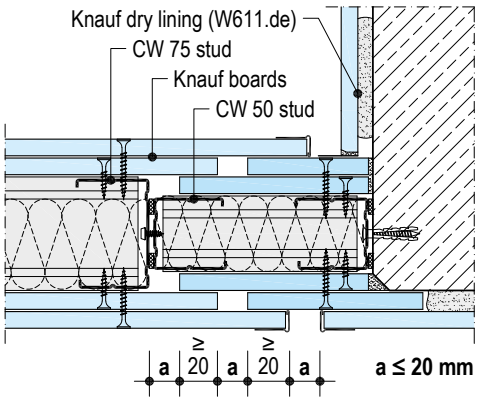
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-A3 Connection to solid component, floating

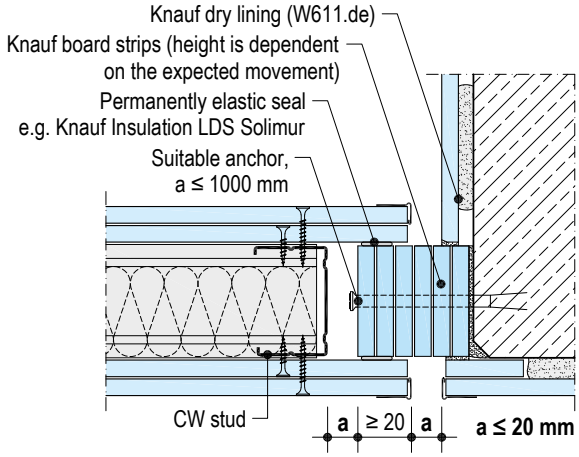
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-A10 Connection to solid component, floating

Horizontal section



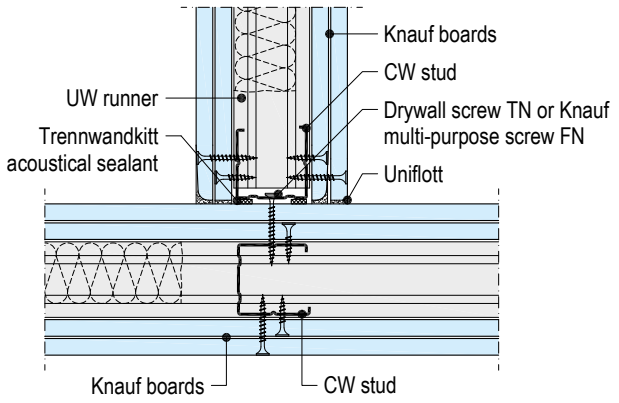
plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

T connections

Scale 1:5

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

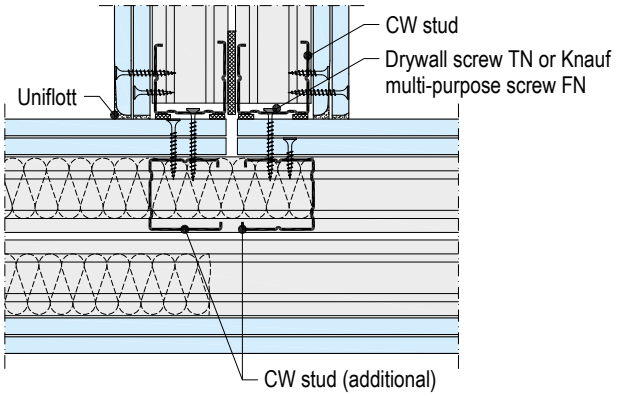
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

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

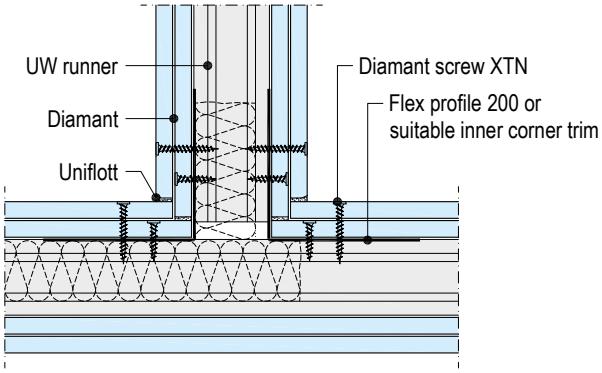
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

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

Horizontal section

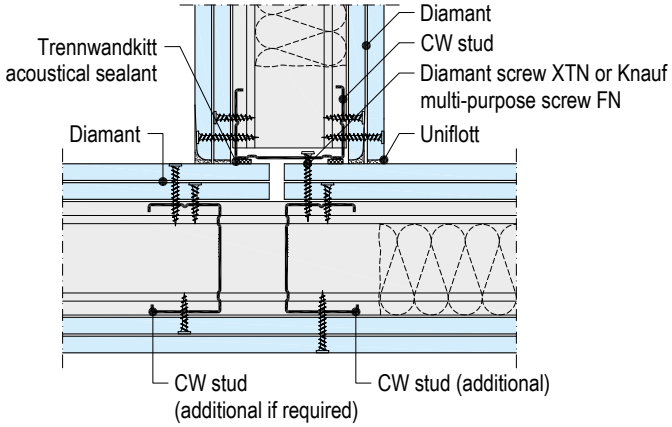


- Installation aid:
  Connect flex profiles by crimping to the UW runners

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

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

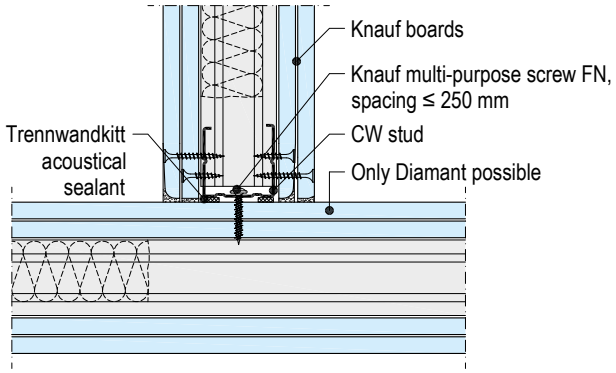
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

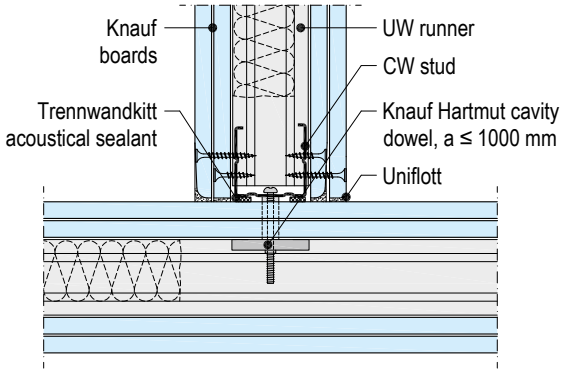
W112.de-C5 T-junction, connection to Diamant

Horizontal section I **Without** fire resistance



W112.de-C3 T-junction with cavity dowel Hartmut

Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

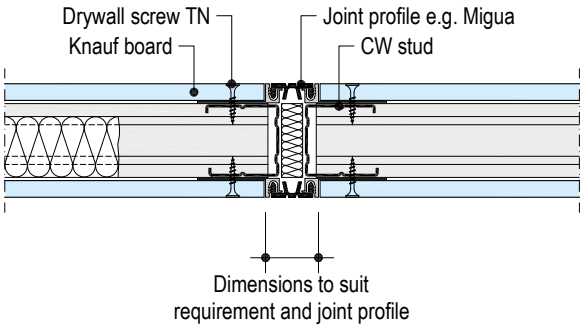
Note For demands on the sound insulation refer to the sound insulation brochure: Determination of the sound insulation in installed state SS03.de (German) (Chapter Flanking constructional components).

Movement joints

Scale 1:5 I Dimensions in mm

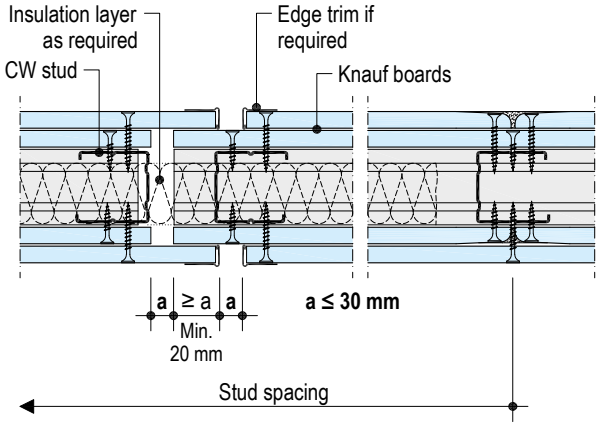
W111.de-BFU2 Movement joint with joint profile

Horizontal section I **Without** fire resistance



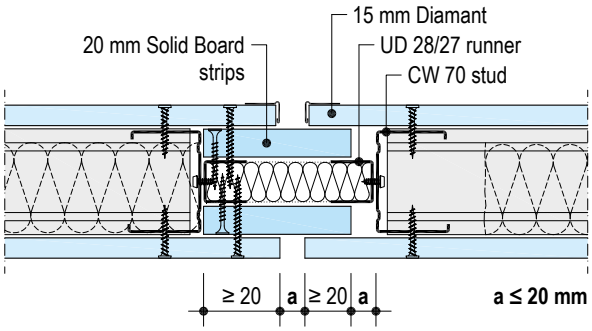
W112.de-BFU2 Movement joint

Horizontal section I **Without** fire resistance



W111.de-BFU3 Movement joint

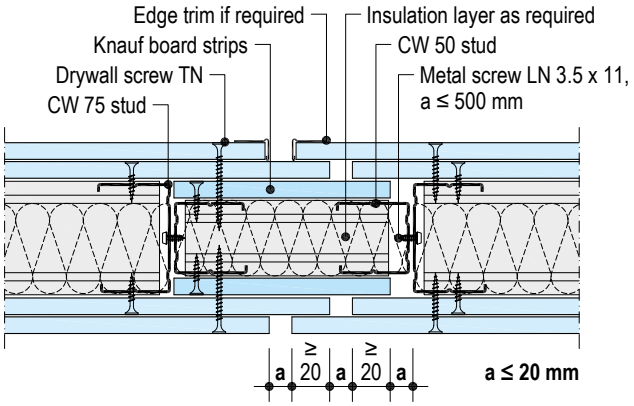
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-BFU1 Movement joint

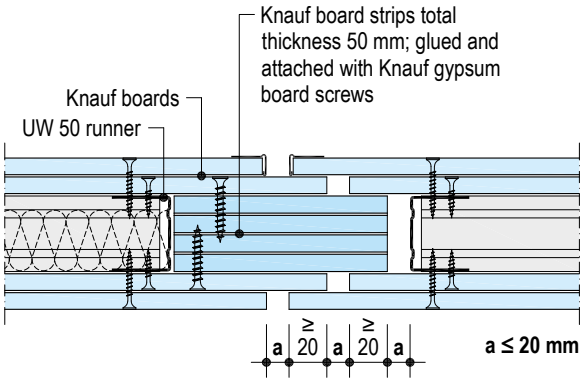
Horizontal section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-BFU4 Movement joint

Horizontal section

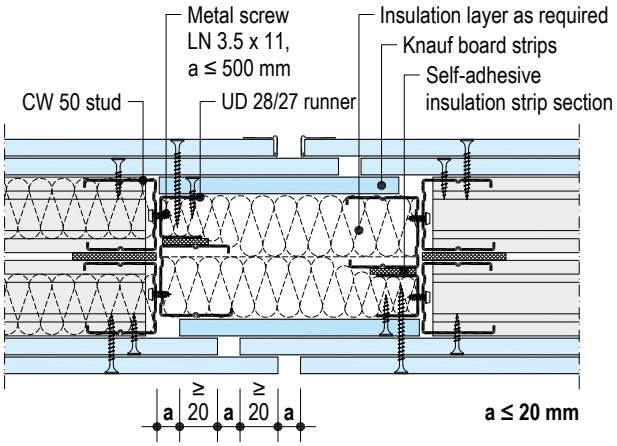


- The rigid connection of the wall shells causes a local reduction of the sound insulation.
- Knauf recommendation with partition cavity 50 mm

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W115.de-BFU1 Movement joint

Horizontal section



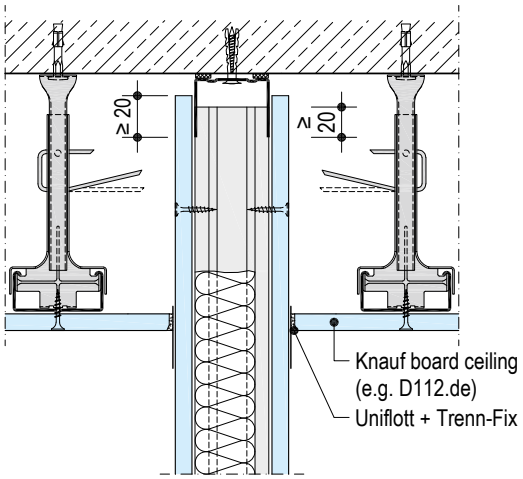
plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Connections to ceiling

Scale 1:5 I Dimensions in mm

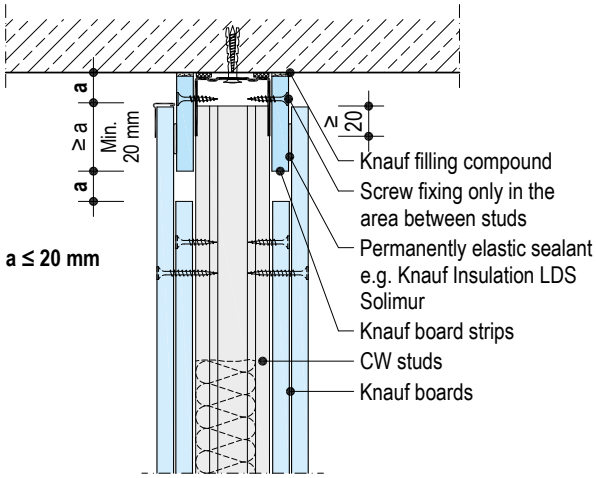
W111.de-VO2 Deflection head with board ceilings

Vertical section I **Without** fire resistance



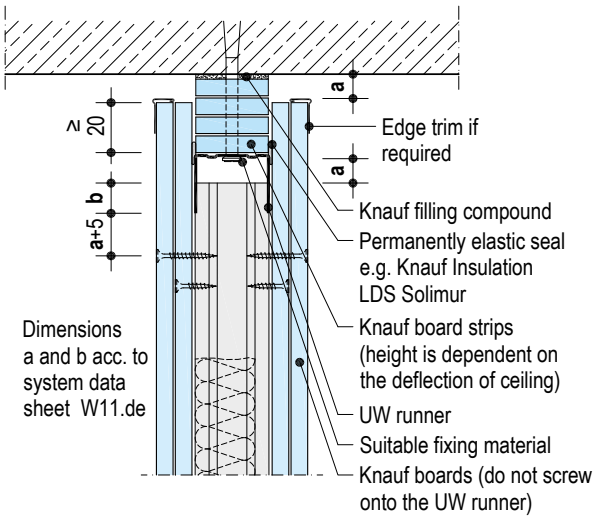
W112.de VO3 Deflection head

Vertical section I **Without** fire resistance



W112.de VO2 Deflection head[1)]

Vertical section



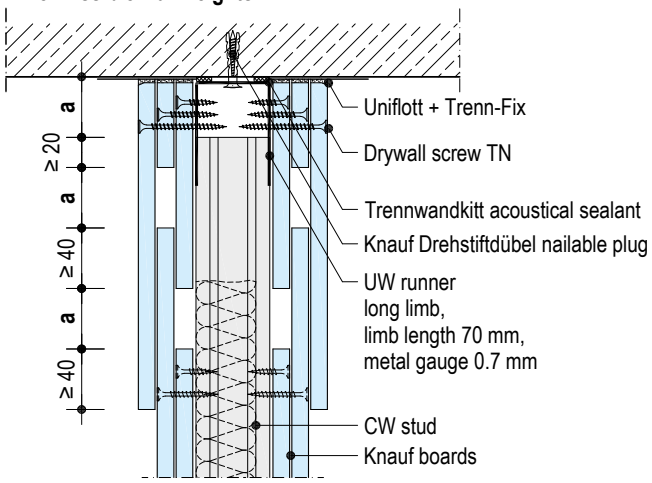
- Observe the details in the table

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-VO12 Deflection head up to 40 mm

Vertical section

- **Permissible wall heights: ≤ 7 m**



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

1) Details for deflection heads

Knauf system	Without Fire resistance		With Fire resistance		Max. permissible partition heights
	a mm	b mm	a mm	b mm	m
W111.de	≤ 20	≥ 20	≤ 20	≥ 20	
W112.de	≤ 30	≥ 10	≤ 20	≥ 20	6.50
W113.de	≤ 30	≥ 10	≤ 20	≥ 20	

- Observe the permissible partition heights of the respective system (see page 9, page 11 and page 13).

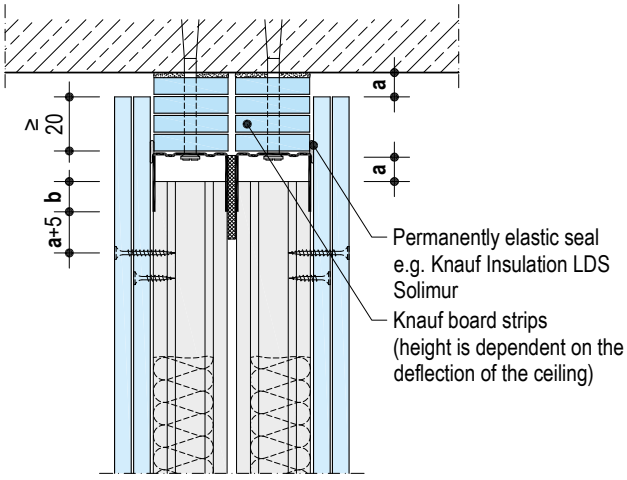
Note	Apply a deflection head in case of ceiling deflection ≥ 10 mm. See also Knauf YouTube Channel

Connections to ceiling

Scale 1:5 I Dimensions in mm

W115.de VO2 Deflection head[1)]

Vertical section

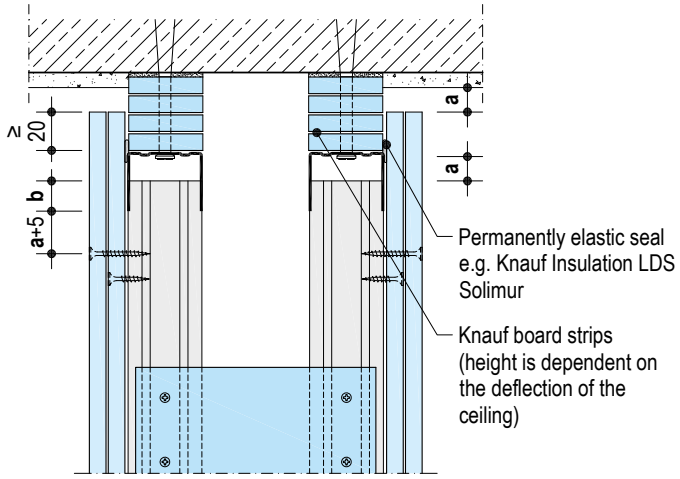


- Observe the details in the table

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W116.de VO2 Deflection head[1)]

Vertical section



- Observe the details in the table

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

1) Details for deflection heads

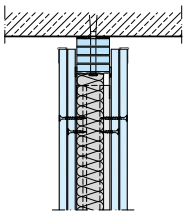
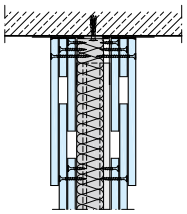
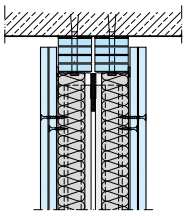
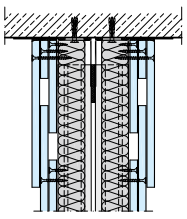
Knauf system	Without Fire resistance		With Fire resistance		Max. permissible partition heights
	a mm	b mm	a mm	b mm	m
W115.de double-layer	≤ 20	≥ 20	≤ 20	≥ 20	6.50
W116.de single-layer	≤ 20	≥ 20	–	–	
W116.de double-layer	≤ 30	≥ 10	≤ 20	≥ 20	

- Observe the permissible partition heights of the respective system (see page 15 and page 17).

Influence of a deflection head on the sound reduction index

Scheme drawings

The influence of the deflection heads on the resulting sound reduction index vary depending on the sound reduction index of the basis partition. Irrespective of the sound reduction index of the basis partition, the deflection heads must always be professionally designed and applied. Leaks and improper sealing between the board strips and basic ceiling, on the joints between the board strips as well as between the cladding layers considerably impair the achieveable sound reduction index.

Deflection head	Sound reduction index of the basis partition		
Single metal stud partition	$R_w \leq 56$ dB	$56 < R_w \leq 62$ dB	$62 < R_w \leq 68$ dB
	-1 dB	-2 dB	-3 dB
	No negative influence	No negative influence	No negative influence
Double metal stud partition	Assigned		
	-4 dB		
	No negative influence		

Note	Apply a deflection head in case of ceiling deflection ≥ 10 mm. See also Knauf YouTube Channel

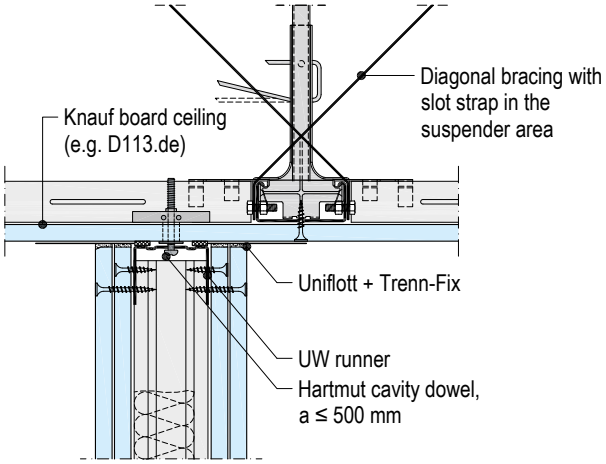
Connections to ceiling

Scale 1:5

W112.de VO4 Ceiling connection to solid ceiling

Vertical section I **Without** fire resistance

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

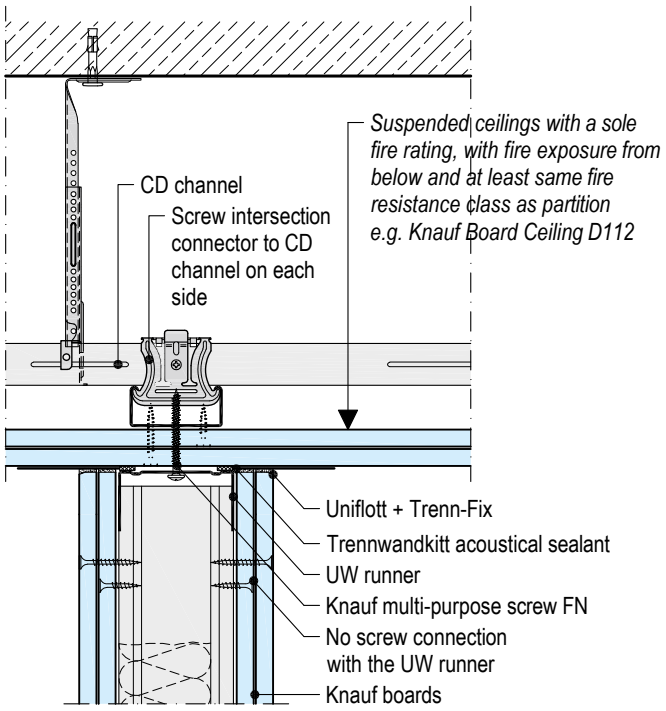


- Horizontal bracing by diagonal bracing (e.g. slot strap, CD channel)

W112.de VO6 Ceiling connection to board ceiling

Vertical section

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

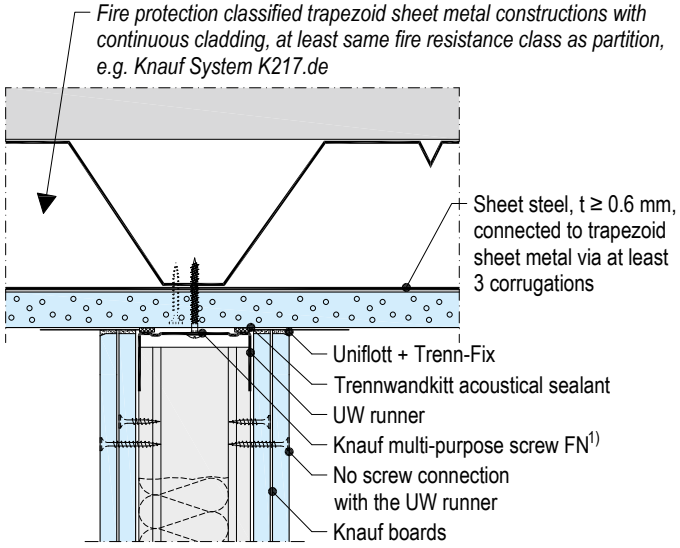


- Horizontal bracing via load transfer via the ceiling diaphragm to the flanking partitions (supporting connection of the ceiling necessary).
- For further information on planning and design see system data sheet D11.de Knauf Board Ceilings – Connections to lightweight partitions.

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-VO5 Deckenanschluss an Trapezblechdecke

Vertical section

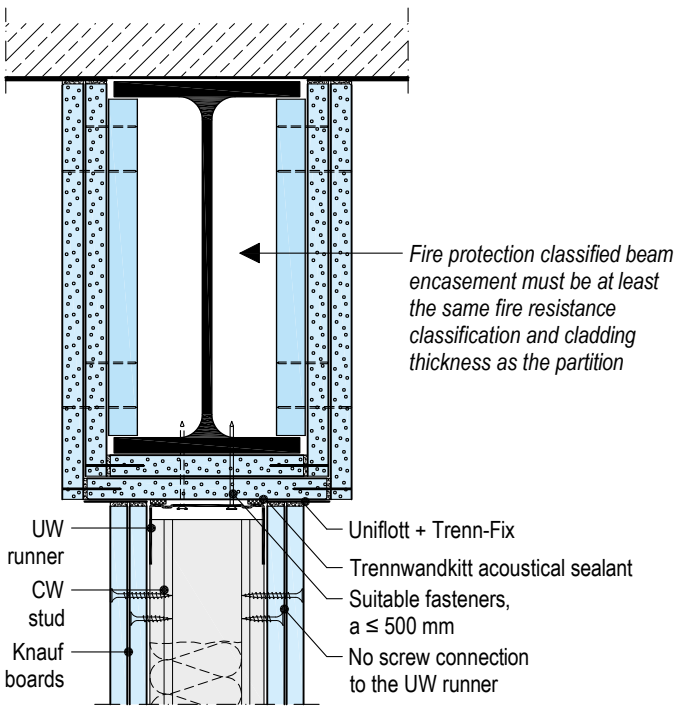


1) With trapezoid sheet metal thickness: *t ≥ 1.0 mm pre-bore with Ø 2.0 mm*
t ≥ 1.5 mm pre-bore with Ø 3.0 mm
t ≥ 2.0 mm approved fastener

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-VO8 Connection to installation shaft wall

Vertical section



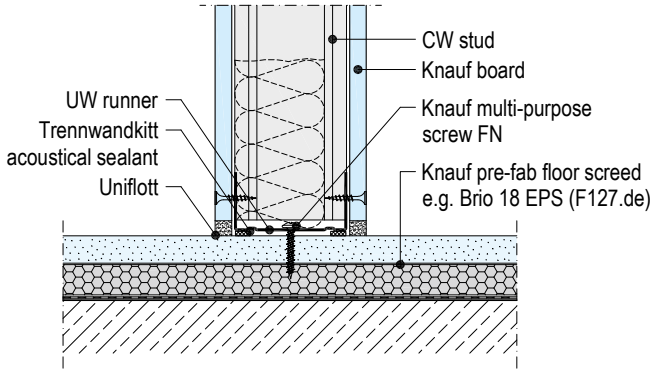
plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Connections to floor, connection to ceiling

Scale 1:5 I Dimensions in mm

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

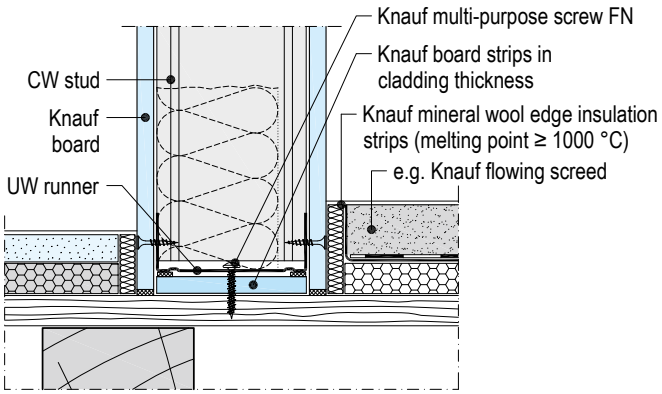
Vertical section I **Without** fire resistance



- Continuous screed layer reduces the sound insulation effectiveness

W111.de-VU4 Floor connection to wood joist ceiling

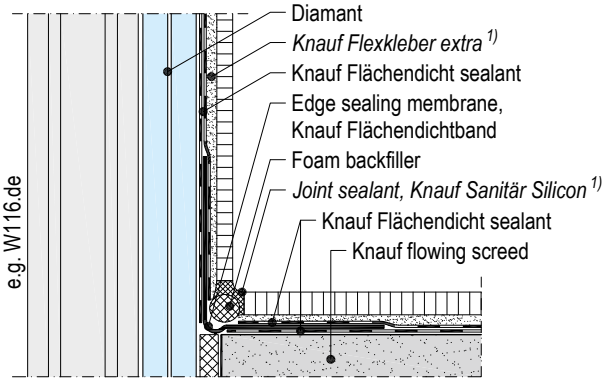
Vertical section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Connection in high humidity area

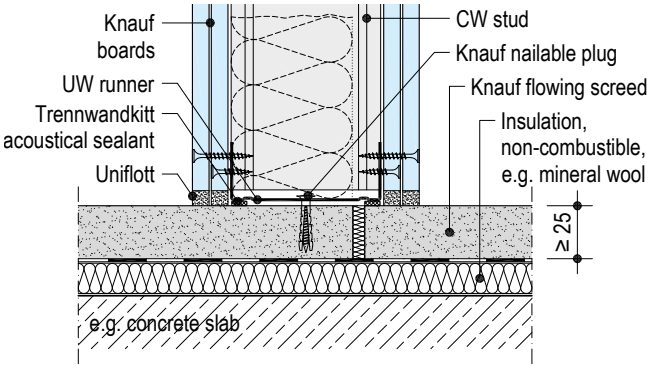
Not to scale



1) Knauf Bauprodukte GmbH

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

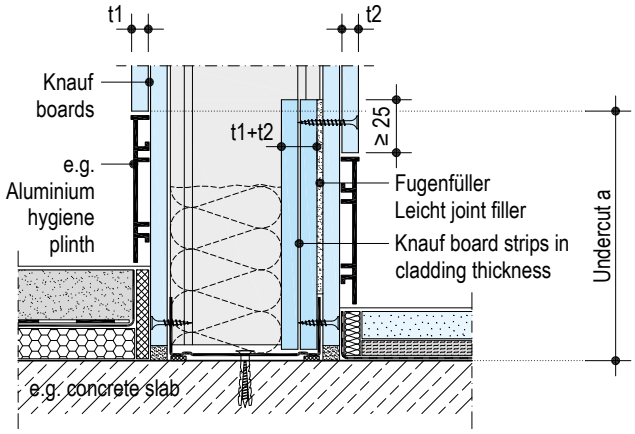
Vertical section



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

W112.de-VU3 Floor connection to undercut plinth

Vertical section

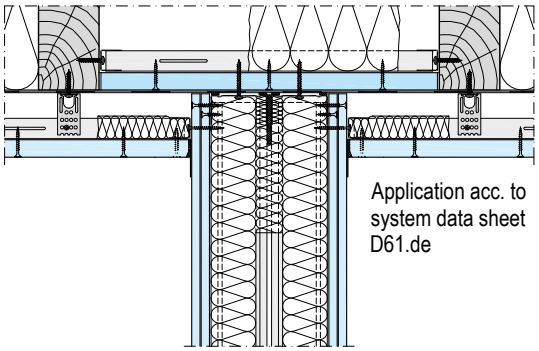


Max. undercut **a** without stuctural influence
CW 50 < 150 mm; CW 75 < 225 mm; CW 100 < 300 mm
In case of larger undercut maximum partition height **a** acc. to system W111.de.
a ≤ 500 mm

plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Connection to wood joist ceiling / attic storey system

Not to scale



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Note Observe the reduced maximum permissible spacings (according to the tables page 54).

Door openings

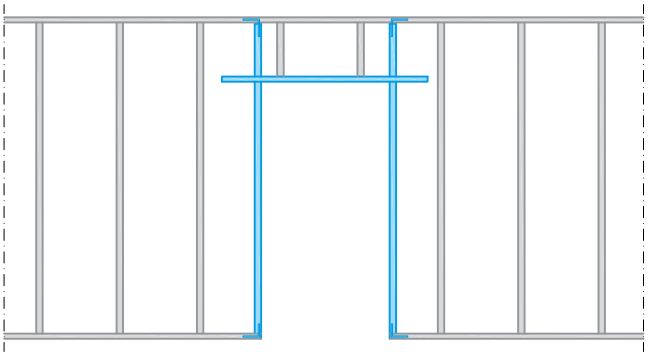
Scheme drawings

Maximum door leaf weights

Door leaf width	Variant CW stud	UA profile variant UA 50	UA 75[1)]	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

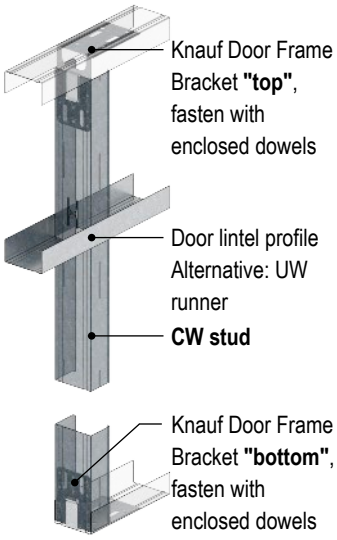
1) Values also apply for UA 70.

Frame

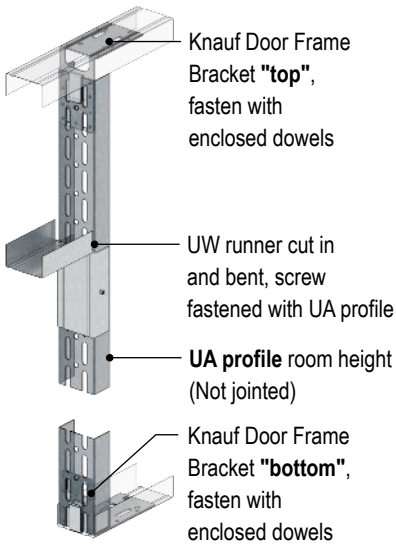


Door opening profiles

Variant CW 50/75/100
Acc. to DIN 18340 — Partition height ≤ 2.60 m; Door width ≤ 0.885 m; Door leaf weight ≤ 25 kg

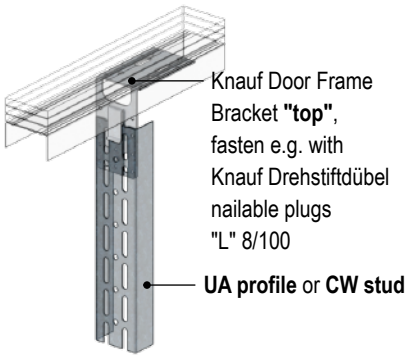


Knauf recommendation: Variant UA 50/75/100
Acc. to DIN 18340 — Partition height > 2.60 m; Door width > 0.885 m; Door leaf weight > 25 kg



- Remove the plastic strips on the Door Frame Bracket.
- Alternative: Knauf Connection Angle for UA profiles

Door openings with deflection head
For a ceiling deflection up to max. 20 mm
CW or UA variants possible



When 70 profiles are used

UA 70

- Screw fasten the Knauf connection angle UA 50 in the oblong slots top and bottom using one enclosed nut and washer each.
- In case of a deflection head, only hand tighten the carriage bolt on the upper connection angle.
- Manufacture the lintel runner from UW profiles.

When partitions applied with profiles 125 or 150

UA 125 or 150

- Screw fasten the Door Frame Bracket 100 in the oblong slots top and bottom each with two enclosed carriage bolts using nuts and washers.
- In case of a deflection head, only hand tighten the carriage bolt on the upper Door Frame Bracket.
- Manufacture the lintel runner from UW profiles.

Knauf recommendation:

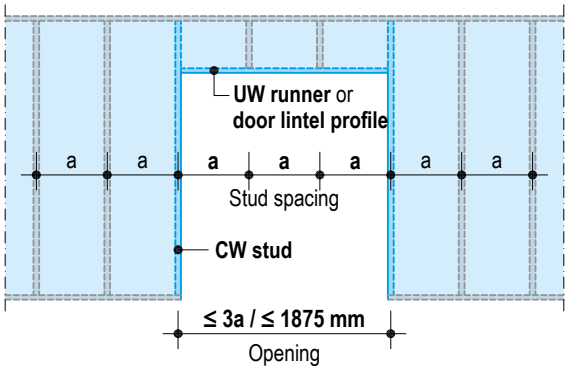
- In case of dual stud partitions, construct door opening with UA profiles.
- Door opening profiles approx. 40 mm shorter than the stud frame profiles; observe additional constructional situation / constraints, e.g. deflection head.

Maximum openings in metal stud partitions

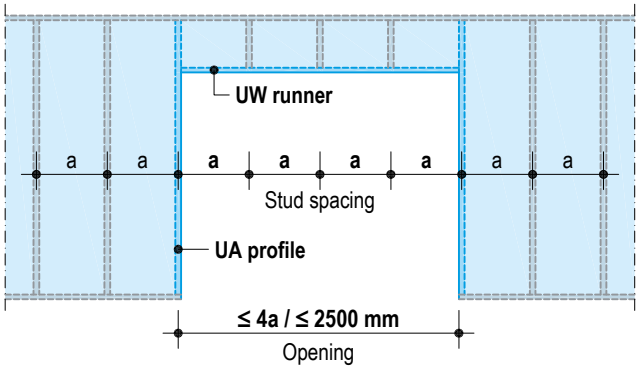
Without fire resistance Scheme drawings

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

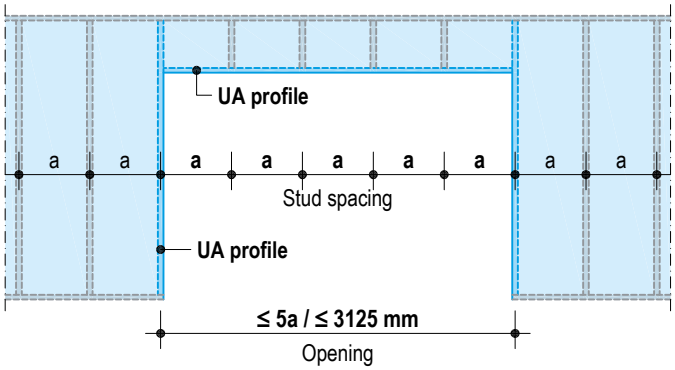
Up to 3a / ≤ 1875 mm: CW studs as reveal studs, UW runner or door lintel profile as a lintel runner



Up to 4a / ≤ 2500 mm: UA profiles as reveal studs, UW runner as a lintel runner



Up to 5a / ≤ 3125 mm: UA profiles as reveal studs, UA profile or lintel runner

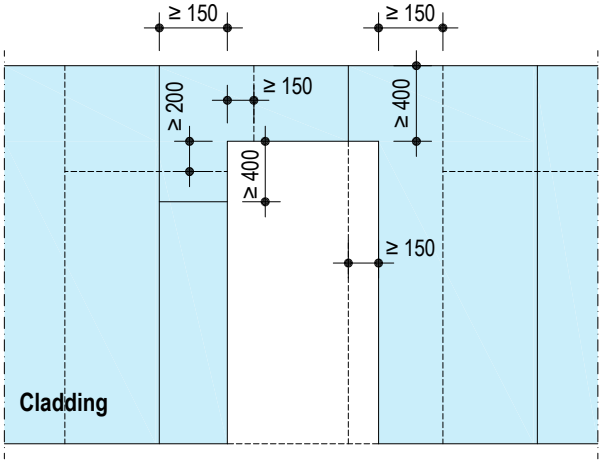


Cladding

Scheme drawing

- Arrange the long joints on the door lintel and not along the door opening, rather offset it to the door lintel center.
- Arrange the horizontal joints on the door lintel and not along the door opening, rather offset it to the door opening center.
- Cladding above the door lintel < 400 mm is only permissible in case of floor-to-ceiling boards.

e.g. Vertical board layer All dimensions in mm



Legend

- – – – – – Lower layer
- ——— Upper layer

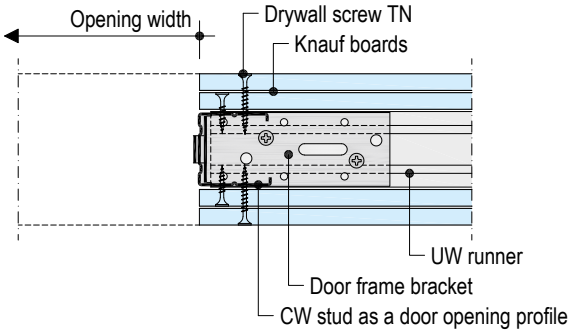
Caution	Do not apply board joints to door opening profiles.

Details

Scale 1:5 I Dimensions in mm

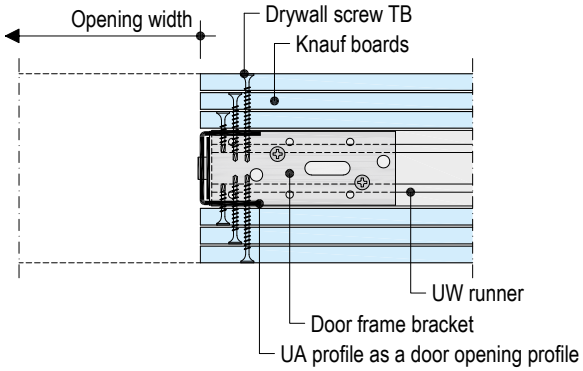
W112.de-E2 Door opening with CW stud

Horizontal section I **Without** fire resistance



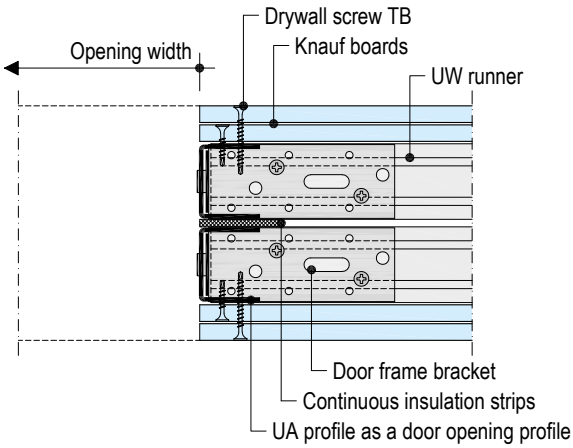
W113.de-E1 Door opening with UA profile

Horizontal section I **Without** fire resistance



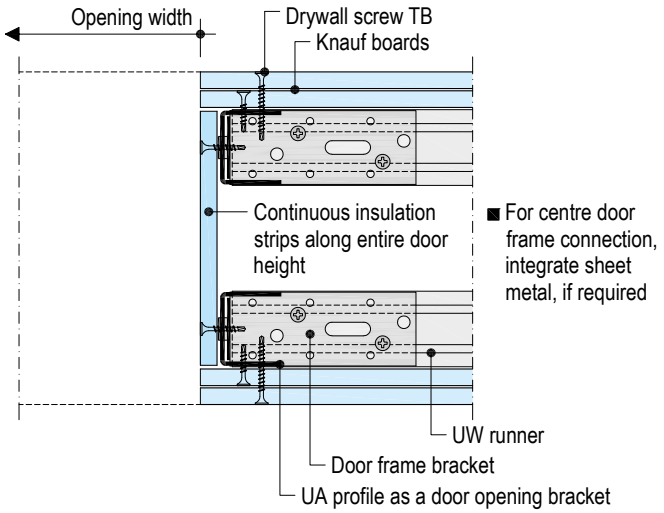
W115.de-E1 Door opening with UA profiles

Horizontal section I **Without** fire resistance



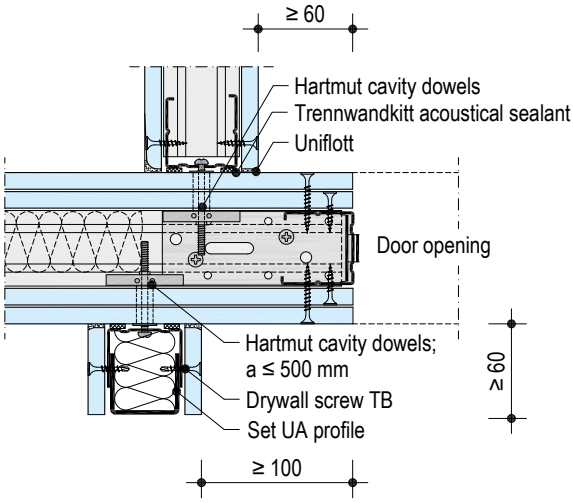
W116.de-E1 Door opening with UA profiles

Horizontal section I **Without** fire resistance



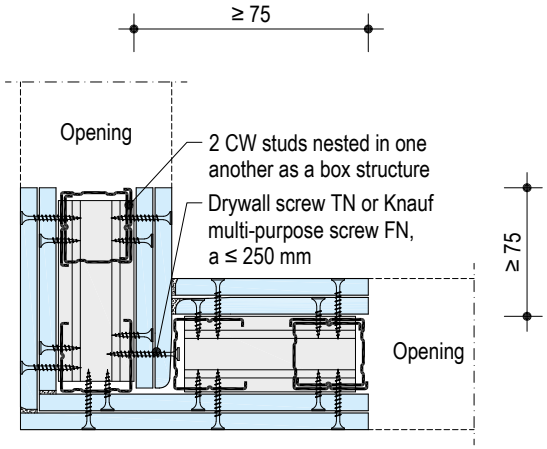
W112.de-E3 Wall opening beside wall connections

Horizontal section I **Without** fire resistance



W112.de-E4 Wall opening beside corners

Horizontal section I **Without** fire resistance



Notes	Furthermore, the details of the door manufacturers are to be observed (e.g. fire resistance approval, additional constructional measures, etc.) Fire resistance only in conjunction with a corresponding fire resistance connection.

Connection of "lightweight" partitions to fire resistance classified ceilings

- Partitions may only be connected to fire resistance classified ceiling systems (suspended ceilings), if it is assured in the event of a fire, that should the partition be destroyed prematurely, the remaining elements can collapse without creating an additional load to the ceiling.
- If partitions with fire resistance requirements are connected to the suspended ceiling, the suspended ceilings alone must have at least the same fire resistance class.
- Horizontal bracing of the suspended ceiling (max. 15 m x 15 m ceiling area size) or load transfer to the flanking constructional components is necessary.
- The following design of the connections is possible (for further connections see page 36 or availability on request).

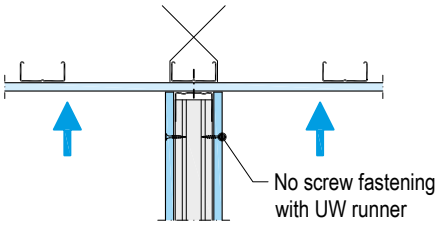
Knauf wall systems	**Knauf ceiling systems**		
	Suspended ceilings allocated solely to a single fire resistance class		Suspended ceilings in conjunction with basic ceilings of type I - IV
	Fire exposure **from below**	Fire exposure **from above** (plenum)	
Without fire resistance	1	2	3a
Partition fire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

Suspended ceilings allocated solely to a single fire resistance class

Fire exposure from below

On suspended ceilings with fire resistance from below, implement the connection to the ceiling without screw fixing to the UW profile, but the cladding must extend up to the suspended ceiling.

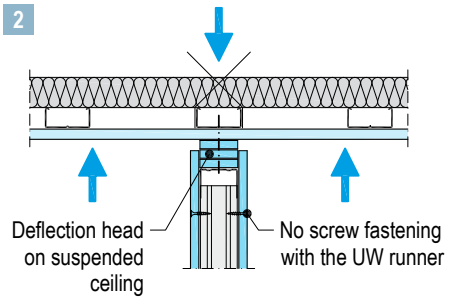
1



Fire exposure from above (plenum)

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

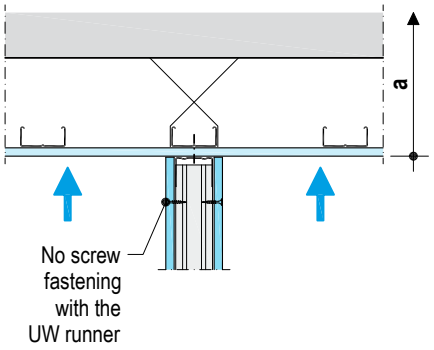
2



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

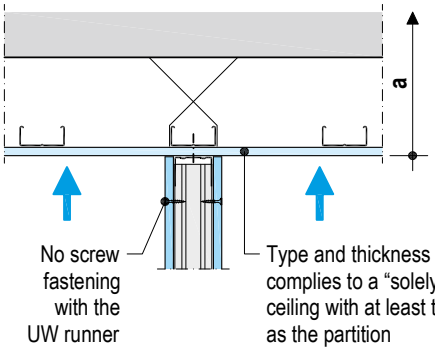
For suspended ceilings in conjunction with basic ceilings of types I - IV, the stated fire resistance class only applies for the entire ceiling system **(a).**

3a Implement ceiling connection of partitions without fire resistance without screw fastening to the UW runner.



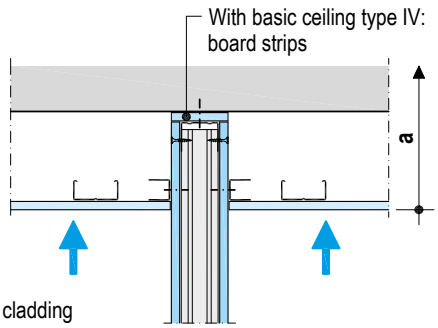
Partition without fire resistance

3b If partitions with fire resistance requirements are connected to the suspended ceiling, the classification of the suspended ceilings alone must at least be the same fire resistance class as the partition.



Partition with fire resistance

3c Partitions with the same fire resistance class as the entire ceiling system **(a)** must be fastened to the basic ceiling.



Partition with fire resistance

With connection components of combustible building materials, perimeter runners (UW) must be backed in cladding thickness using gypsum boards.

Extension of the fire resistance Proof of Usability

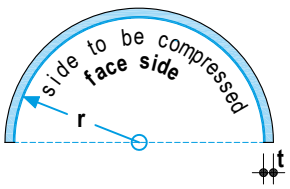
- Connections to fire resistance classified suspended ceilings

Prior consultation is recommended acc. to page 5.

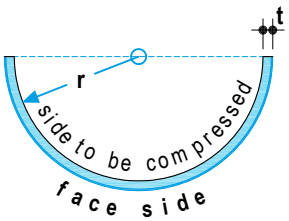
Curved partitions

Scheme drawings

Concave – inner arch



Convex – outer arch



Bending radii of Knauf boards

Board thickness t mm	Bending radius r in longitudinal direction Dry bending mm	Wet bending mm
6.5 (Techniform board)	≥ 1000	≥ 300
12.5 GKB / GKF	≥ 2750	≥ 1000
12.5 Diamant	≥ 2750	≥ 1000

Other Knauf Boards / bending radii on request

Bending instructions for Knauf boards

Bend only in the longitudinal direction

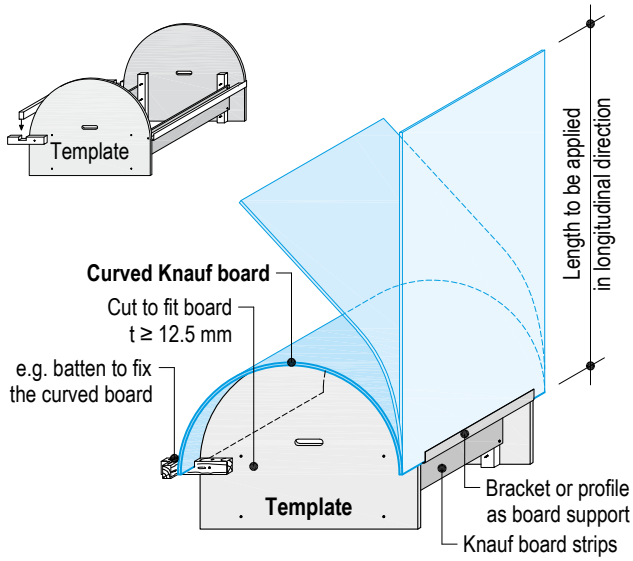
Dry bending

1. Slowly bend the Knauf board laterally over the stud partitions. Pre-bending on a template is recommended.
2. Fasten board with drywall screws along the curvature.

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 with a spiked roller longitudinally and transversely.
3. Wet the board with a sprayer or lambskin roller and allow to soak in for a few minutes. Repeat the work step several times until saturation is achieved and the excess water runs off.
4. Place the board on the prefabricated template, bend and fix the board with adhesive tape and allow to dry.

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



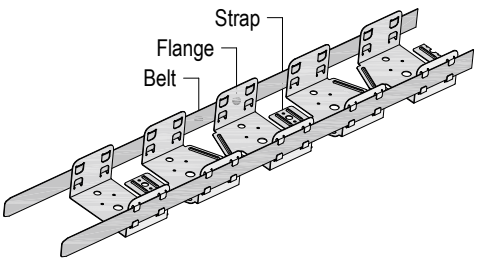
Installation instructions

- 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

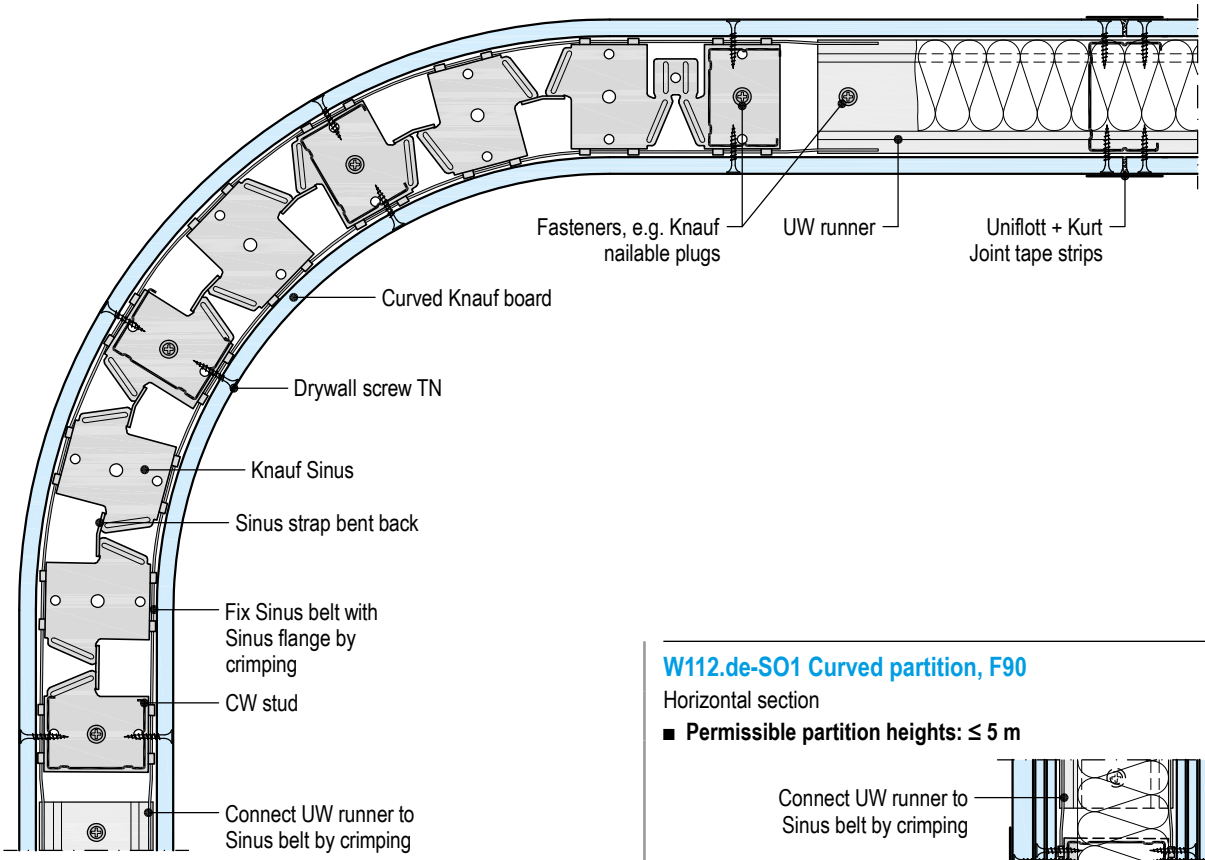


Details

Scale 1:5 I Dimensions in mm

W111.de-SO1 Curved partition

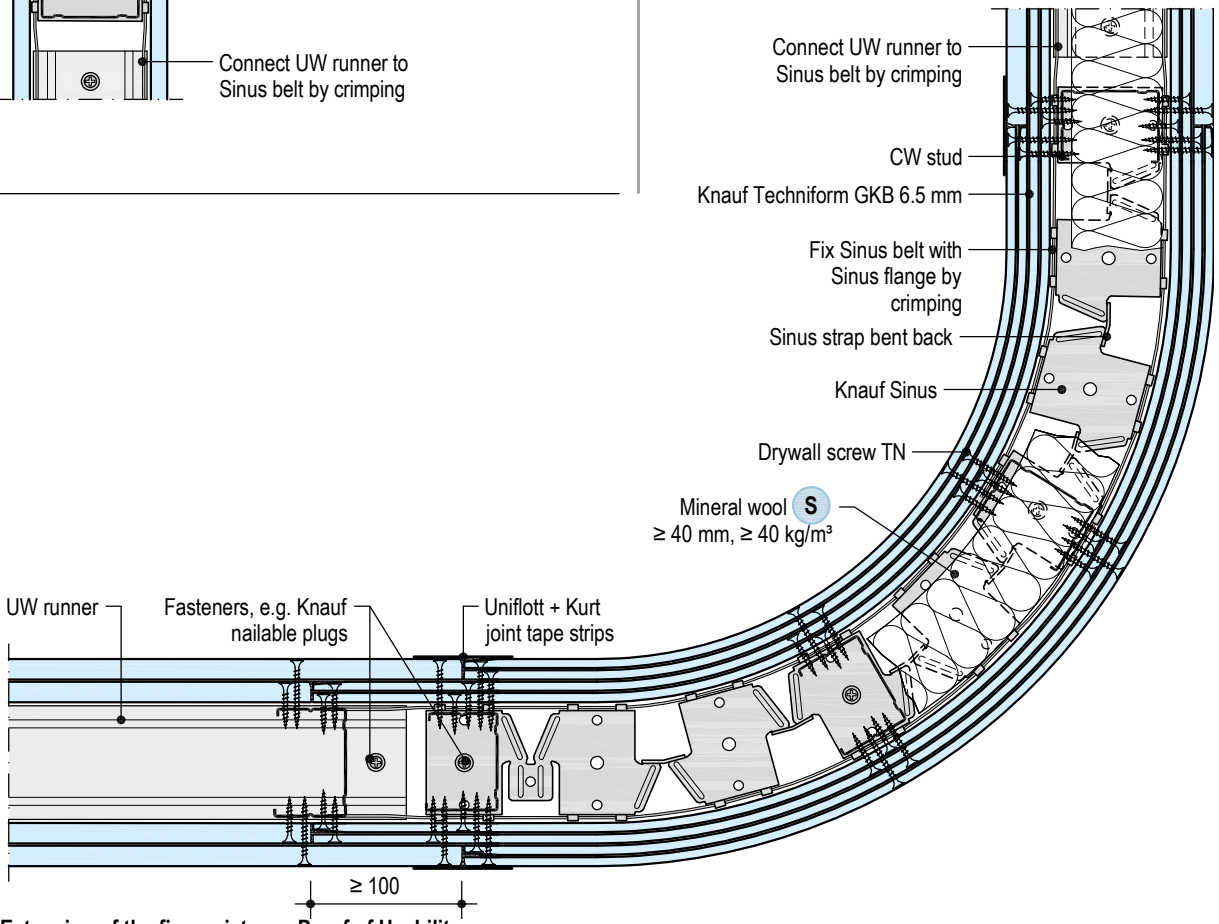
Horizontal section I **Without** fire resistance



W112.de-SO1 Curved partition, F90

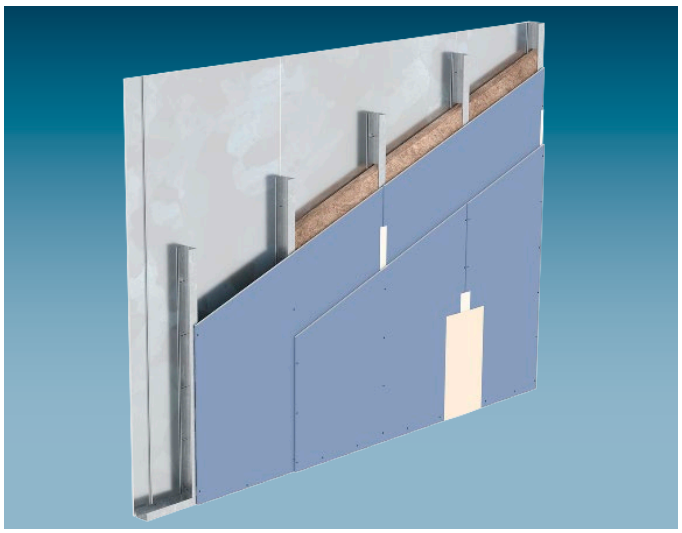
Horizontal section

- **Permissible partition heights: ≤ 5 m**



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 5 recommended

Fields of application – Diamant Steel GKFI



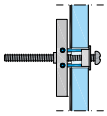
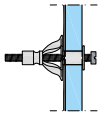
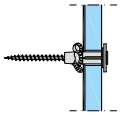
Diamant Steel GKFI field of application

Selection of the grid in dependence on the expected load

Load max. kN/m²	Load type	Profile min.	Cladding thickness min. Loaded side Diamant	Diamant Steel GKFI	Minimum thickness t mm	Unloaded side Diamant	Diamant Steel GKFI	Minimum thickness t mm
0.7	Static	CW 50		•	12.5 + 0.4		•	12.5 + 0.4
1.0	Static	CW 50	•	•	12.5 + 0.4[1)] + 12.5	•		2x 12.5
		CW 75		•	12.5 + 0.4	•		12.5
1.5	Static	CW 75	•	•	12.5 + 0.4 + 12.5	•		2x 12.5

1) Drywall screw spacing XTB 1st layer Diamant Steel GKFI ≤ 250 mm.

Fixing loads for anchoring cantilever loads in Diamant Steel GKFI

Dowel/ Screw	Maximum screw / dowel load capacity in kg			
	Knauf Cavity Dowel Hartmut Screw M5	**fischer MHD 5 x 65 S** Screw M5 or M6	**Knauf multi-purpose screw FN 4.3 x 65**	**fischer UX 8 x 50 with Knauf multi-purpose screw FN 4.3 x 65**
				
1-layer	**80**	**50**	**30**	**30**
2-layer	**100**	**90**	**60**	**55**

Measured with 300 mm eccentricity see page 18

Extension of the fire resistance Proof of Usability
■ Due to the sheet metal inserts
Prior consultation is recommended acc. to page 5.

Notes

Static loads in this respect are permanently fastened loads such as towel rails, cabinets, shelves and boilers.

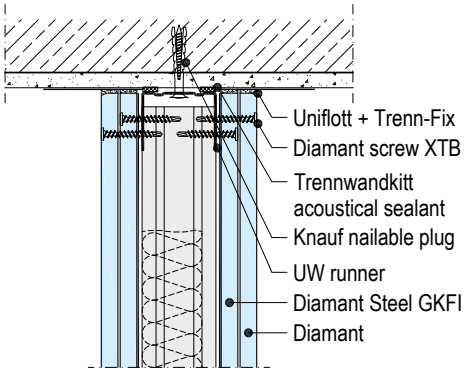
Always screw fasten Diamant Steel GKFI with Diamant Screws XTB even for a cover layer of Diamant.

Details

Scale 1:5

W112.de SO2 Ceiling connection to solid ceiling

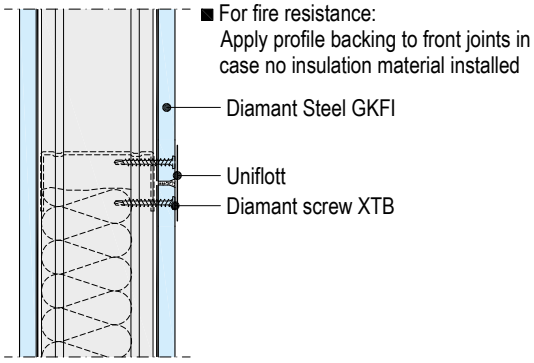
Vertical section



Extension of the fire resistance Proof of Usability
Prior consultation in acc. to page 5 recommended

W111.de-SO2 Board joint

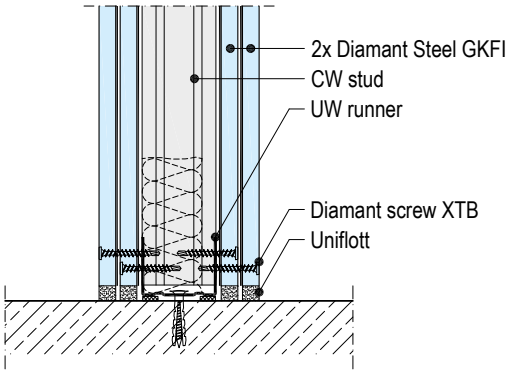
Vertical section



Extension of the fire resistance Proof of Usability
Prior consultation in acc. to page 5 recommended

W112.de-SO3 Connection to basic floor

Vertical section



Extension of the fire resistance Proof of Usability
Prior consultation in acc. to page 5 recommended

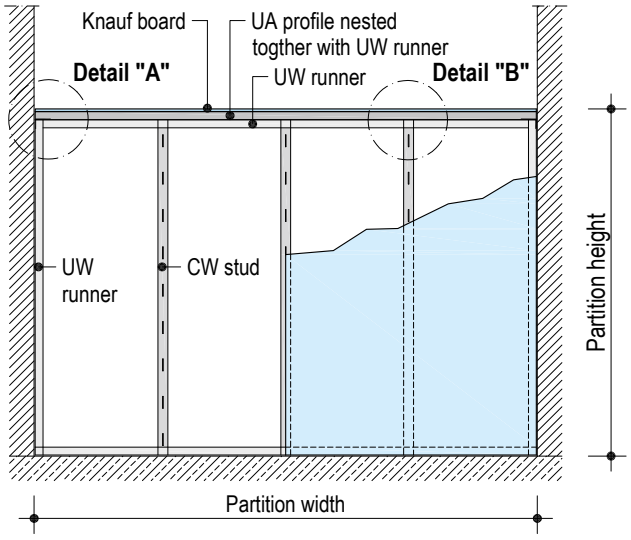
Note	Always screw fasten Diamant Steel GKFI with Diamant Screws XTB even for a cover layer of Diamant.

Extension of the fire resistance Proof of Usability
■ Due to the sheet metal inserts
Prior consultation is recommended acc. to page 5.

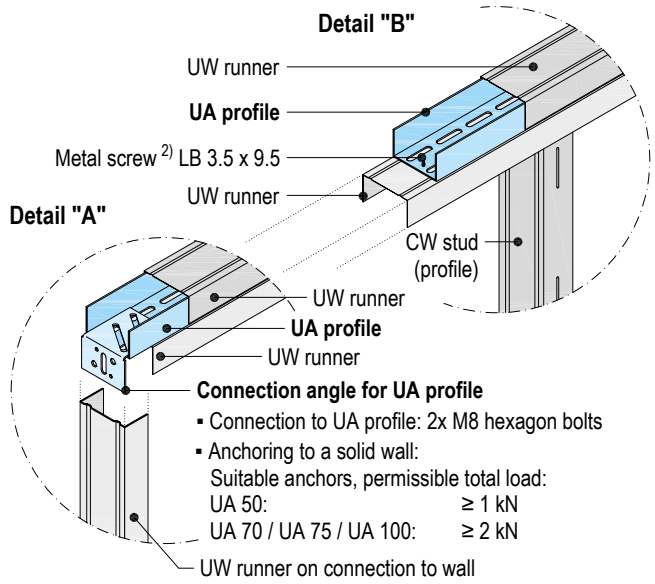
Metal stud partitions without connection to ceiling

Without fire resistance

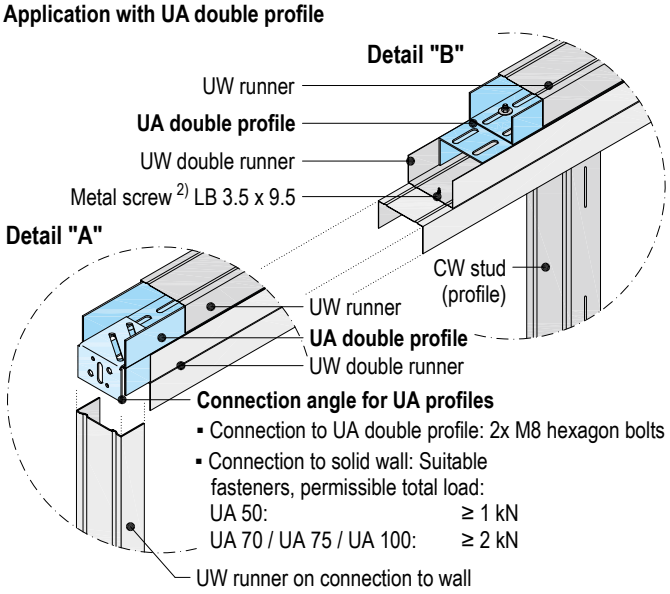
View Scheme drawings



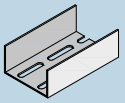
Application with UA single profile



Application with UA double profile



Partition width = UA profile width

UA profile Metal gauge 2 mm 	**Maximum permissible partition width**[1] **Installation zone 1** m	**Installation zone 2** m
UA single profile		
UA 50	4.00	3.50
UA 70	4.25	4.00
UA 75	4.30	4.00
UA 100	5.30	4.40
UA 125	6.00	5.20
UA 150	6.40	5.70
UA double profile		
2x UA 50	4.20	4.00
2x UA 70	5.20	4.40
2x UA 75	5.40	4.50
2x UA 100	6.30	5.50
2x UA 125	7.20	6.50
2x UA 150	7.60	7.00

1) Cantilever loads are considered during calculation.

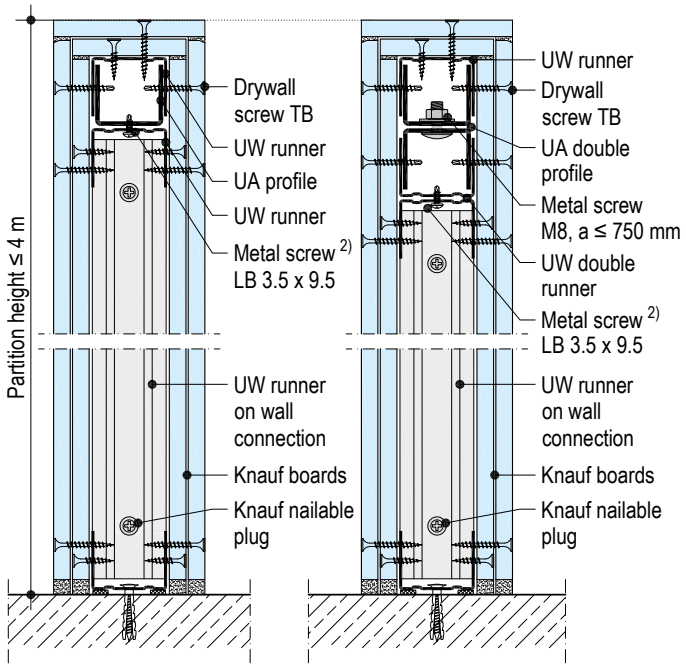
- Permissible partition heights: **≤ 4 m**; larger partition heights on request
- Wall and door openings on request

Detail metal stud partitions without connection to ceiling

Vertical section I **Without** fire resistance

W111.de / W112.de

■ UA single profile ■ UA double profile

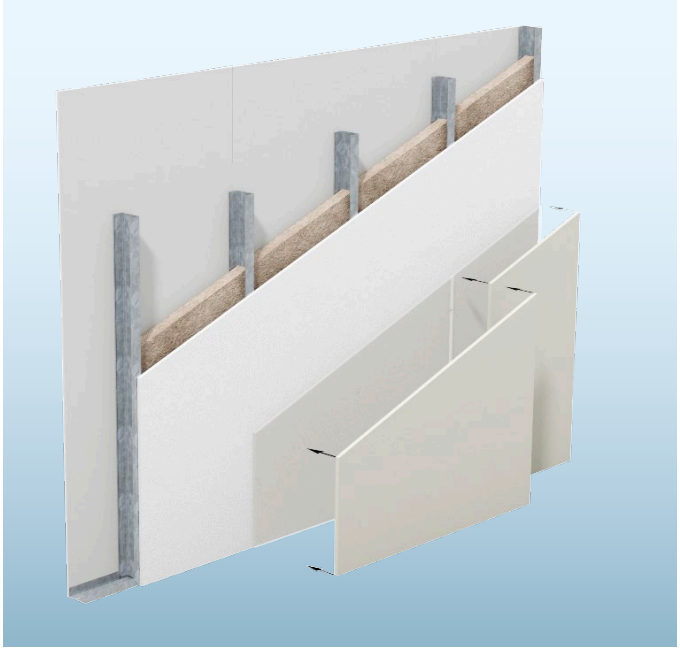


Connection to floor acc. to W111.de / W112.de

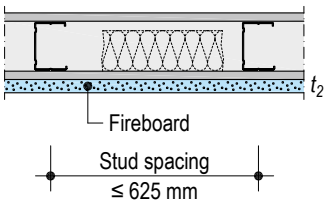
2) Fastener spacing in acc. with the spacings of the Knauf multi-purpose screws FN in the tables on page 54

Caution	UA single profiles may not be joined. Apply UA double profile preferably without joint. When applied acc. to variant 4 page 56 1 joint possible. Fire resistance and sound insulation requirements **cannot** be implemented with this wall construction.

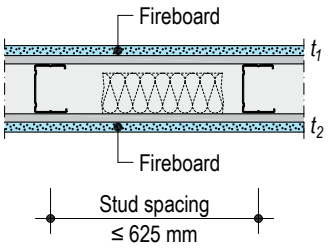
Upgrading metal stud partitions with Fireboard



Single-sided



Double-sided



Fastening of the additional cladding made of Fireboard by screw-fastening into the profile (alternative fastening on request)

Existing building → **Upgrading** (required cladding, minimum thickness in mm)

Existing wall cladding per partition side mm	Insulation layer	On F30 Fireboard single sided	On F60 Fireboard single sided	On F60 Fireboard double sided	On F90 Fireboard single sided	On F90 Fireboard double sided
≥ 12.5 GKB	Without or with mineral wool in the cavity	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		–	–	–	t_2 15	t_1 12.5 + t_2 12.5
≥ 12.5 [1] GKF		–	t_2 15	t_1 12.5 + t_2 12.5	t_2 20	t_1 12.5 + t_2 12.5

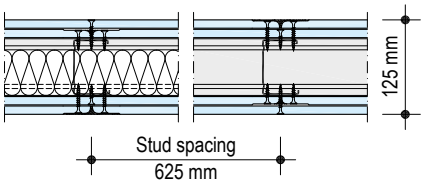
1) Alternative possible: 1x 12.5 mm gypsum fibre board or 1x 12.5 mm cementitious board or 1x 10 mm calcium silicate board

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

t_1 = minimum thickness of the required cladding on wall side 1 t_2 = minimum thickness of the required cladding on wall side 2

Extension of the fire resistance Proof of Usability
Prior consultation is recommended acc. to page 5.

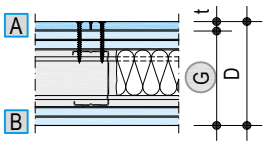
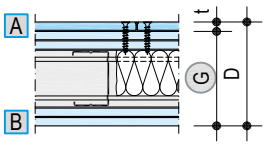
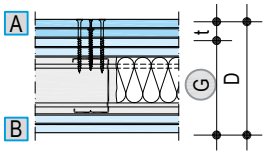
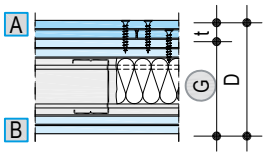
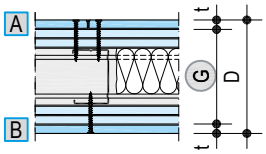
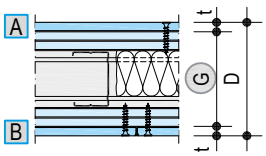
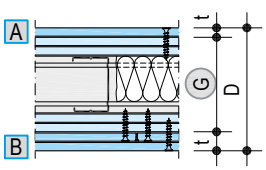
Sound insulation improvement of existing stud partitions with additional direct cladding



Existing/basic wall (G) = W112.de with screw fastening removed from the lap R_w = 49.7 dB

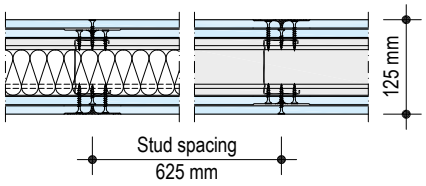
- 2x 12.5 mm Knauf Wallboard
- Profile CW 75; a = 625 mm
- Insulation layer 60 mm Thermolan TI 140 T
- 2x 12.5 mm Knauf Wallboard
- Fastening of the cladding
  - 1st layer TN 3.5 x 25; a = 750 mm
  - 2nd layer TN 3.5 x 35; a = 250 mm

Upgrading with doubling-up Silentboard (applied horizontally)

	Upgrading measures on wall side A	Upgrading measures on wall side B	Thickness of additional application t in mm	Wall thickness D in mm	Sound reduction index R_w (improvement index ΔR_w in dB)
	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ XTN 3.9 x 55; a = 200 mm ■ Flange centre or screw fastening removed from the lap	–	12.5	137.5	**55.5 (6)**
	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ Knauf screw “Gypsum board screws” 5.5 x 38; a = 200 mm row spacing 500 mm	–	12.5	137.5	**56.4 (7)**
	**Doubling-up** ■ 2x 12.5 mm Silentboard ■ 1st layer XTN 3.9 x 55; a = 600 mm ■ 2nd layer XTN 4.5 x 70; a = 200 mm ■ Flange centre or screw fastening removed from the lap	–	25	150	**57.5 (8)**
	**Doubling-up** ■ 2x 12.5 mm Silentboard ■ 1st and 2nd layer Knauf screw “Gypsum board screws” 5.5 x 38; a = 200 mm, row spacing 500 mm	–	25	150	**57.9 (8)**
	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ XTN 3.9 x 55; a = 200 mm ■ Flange centre or screw fastening removed from the lap	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ XTN 3.9 x 55; a = 200 mm ■ Flange centre or screw fastening removed from the lap	12.5 + 12.5	150	**58.9 (9)**
	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ Knauf screw “Gypsum board screws” 5.5 x 38; a = 200 mm row spacing 500 mm	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ Knauf screw “Gypsum board screws” 5.5 x 38; a = 200 mm row spacing 500 mm	12.5 + 12.5	150	**60.9 (11)**
	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ Knauf screw “Gypsum board screws” 5.5 x 38; a = 200 mm row spacing 500 mm	**Doubling-up** ■ 2x 12.5 mm Silentboard ■ 1st and 2nd layer Knauf screw “Gypsum board screws” 5.5 x 38; a = 200 mm, row spacing 500 mm	12.5 + 25	162.5	**62.7 (13)**

Note If divergent wall constructions are to be upgraded with the measures described here, the listed sound reduction improvement measures may not be implemented. However, the absolute value of the sound reduction index can be scheduled for assessment.

Sound insulation improvement of existing stud partitions with furring/ doubling-up



Existing/basic wall (G) = W112.de with R_w = 49.7 dB

- 2x 12.5 mm Knauf Wallboard
- Profile CW 75; a = 625 mm
- Insulation layer 60 mm Thermolan TI 140 T
- 2x 12.5 mm Knauf Wallboard
- Fastening of the cladding
  - 1st layer TN 3.5 x 25; a = 750 mm
  - 2nd layer TN 3.5 x 35; a = 250 mm

Upgrading with furring / doubling-up with Silentboard cladding (applied horizontally)

Upgrading measures on wall side A	Upgrading measures on wall side B	Thickness of additional application d in mm	Wall thickness D in mm	Sound reduction index R_w (improvement index ΔR_w in dB)
Furring W623.de ■ 1x 12.5 mm Silentboard ■ Damping Universal Bracket with profile CD 60/27; a = 625 mm ■ 30 mm Thermolan TP 120 A ■ XTN 3.9 x 23; a = 200 mm	–	47.5	172.5	**64.4 (15)**
Furring W625.de ■ 1x 12.5 mm Silentboard ■ Profile CW 50; a = 625 mm ■ 40 mm Thermolan TI 140 T ■ XTN 3.9 x 23; a = 200 mm	–	67.5	192.5	**67.9 (18)**
Furring W625.de ■ 1x 12.5 mm Silentboard ■ Profile CW 50; a = 625 mm ■ 40 mm Thermolan TI 140 T ■ XTN 3.9 x 23; a = 200 mm	**Doubling-up** ■ 1x 12.5 mm Silentboard ■ XTN 3.9 x 55; a = 200 mm ■ Flange centre or screw fastening removed from the lap	67.5 + 12.5	205	**71.5 (22)**
Furring W626.de ■ 2x 12.5 mm Silentboard ■ Profile CW 50; a = 625 mm ■ 40 mm Thermolan TI 140 T ■ 1st layer XTN 3.9 x 23; a = 600 mm ■ 2nd layer XTN 3.9 x 38; a = 200 mm	–	80	205	**72.7 (23)**
Furring W625.de ■ 1x 12.5 mm Silentboard ■ Profile CW 50; a = 625 mm ■ 40 mm Thermolan TI 140 T ■ XTN 3.9 x 23; a = 200 mm	**Furring W623.de** ■ 1x 12.5 mm Silentboard ■ Damping Universal Bracket with profile CD 60/27; a = 625 mm ■ 30 mm Thermolan TP 120 A ■ XTN 3.9 x 23; a = 200 mm	47.5 + 67.5	240	**75.4 (26)**
Furring W626.de ■ 2x 12.5 mm Silentboard ■ Profile CW 50; a = 625 mm ■ 40 mm Thermolan TI 140 T ■ 1st layer XTN 3.9 x 23; a = 600 mm ■ 2nd layer XTN 3.9 x 38; a = 200 mm	**Furring W623.de** ■ 1x 12.5 mm Silentboard ■ Damping Universal Bracket with profile CD 60/27; a = 625 mm ■ 30 mm Thermolan TP 120 A ■ XTN 3.9 x 23; a = 200 mm	47.5 + 80	252.5	**79.5 (30)**

Notes

If divergent wall constructions are to be upgraded with the measures described here, the listed sound reduction improvement measures may not be implemented. However, the absolute value of the sound reduction index can be scheduled for assessment.

Application of furring in accordance with system data sheet W61.de Knauf Vorsatzschalen (Dry Lining and Furring) - German only

Sound insulation, wall breaks/tapers

Wall breaks with a length of 625 mm

Variant	Wall break Design		Partition types Sound reduction index											
			Drywall partition with **50 dB**			Drywall partition with **60 dB**			Drywall partition with **65 dB**			Drywall partition with **70 dB**		
See page 52 for corresponding drawings		Sound reduction index in dB	Resulting sound reduction index in dB Area share of the wall break											
			8 %	14 %	25 %	8 %	14 %	25 %	8 %	14 %	25 %	8 %	14 %	25 %
1	■ 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	R_w	**45.5**	49.4	49.0	48.4	55.0	53.2	51.1	55.9	53.7	51.4	56.3	53.9	51.5
		$R_{w,R}$	**43**	48	47	46	53	50	48	53	50	48	54	51	48
2	■ 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	R_w	**46.5**	49.6	49.3	48.8	55.7	54.0	52.0	56.8	54.7	52.3	57.3	54.9	52.5
		$R_{w,R}$	**44**	49	48	47	53	51	49	54	52	49	54	52	49
3	■ 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	R_w	**50.3**	50.0	50.0	50.1	57.8	56.6	55.1	59.8	58.0	55.9	60.8	58.6	56.2
		$R_{w,R}$	**48**	49	49	49	56	55	53	58	55	53	58	56	53
4	■ 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	R_w	**50.2**	50.0	50.0	50.0	57.7	56.6	55.0	59.8	57.9	55.8	60.7	58.5	56.1
		$R_{w,R}$	**48**	49	49	49	56	55	53	58	55	53	58	56	53
5	■ 12.5 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 78 mm	R_w	***52***	*50.1*	*50.2*	*50.4*	*58.5*	*57.6*	*56.3*	*61.0*	*59.4*	*57.4*	*62.2*	*60.1*	*57.8*
		$R_{w,R}$	***50***	*49*	*49*	*49*	*57*	*56*	*54*	*59*	*57*	*55*	*60*	*58*	*55*
6	■ 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	R_w	**56.8**	50.3	50.5	51.0	59.6	59.4	59.0	63.4	62.5	61.2	65.9	64.2	62.2
		$R_{w,R}$	**54**	50	50	50	59	58	57	62	60	59	63	61	59

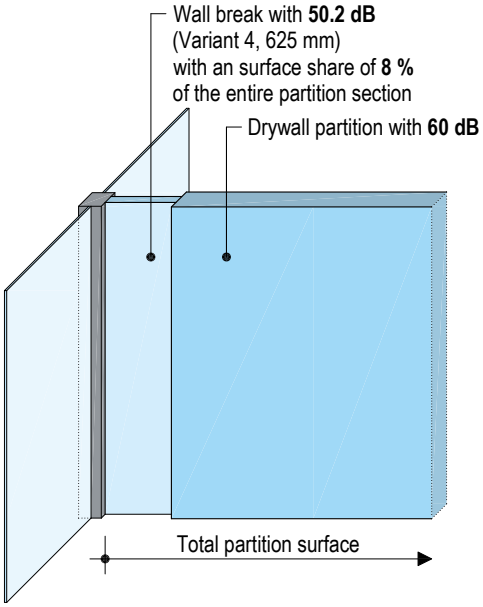
Sound reduction index values represented in italics are derived values from measurements on divergent constructions.
Insulation materials from Knauf Insulation

Wall breaks with a length of 312.5 mm

Variant	Wall break Design		Sound reduction index in dB	Partition types Sound reduction index Drywall partition with **50 dB**			Drywall partition with **60 dB**			Drywall partition with **65 dB**			Drywall partition with **70 dB**		
See page 52 for corresponding drawings				**Resulting sound reduction index in dB** Area share of the wall break											
				4 %	8 %	14 %	4 %	8 %	14 %	4 %	8 %	14 %	4 %	8 %	14 %
4	■ 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	R_w	**47.8**	49.9	49.8	49.6	57.9	56.5	55.0	60.1	57.9	55.9	61.2	58.5	56.2
		$R_{w,R}$	**45**	49	49	48	56	54	52	58	55	53	58	55	53
6	■ 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	R_w	**54.9**	50.1	50.2	50.4	59.6	59.3	58.8	63.6	62.6	61.4	66.5	64.5	62.7
		$R_{w,R}$	**52**	50	50	50	59	58	57	62	60	59	64	62	60

Insulation materials from Knauf Insulation

Example:



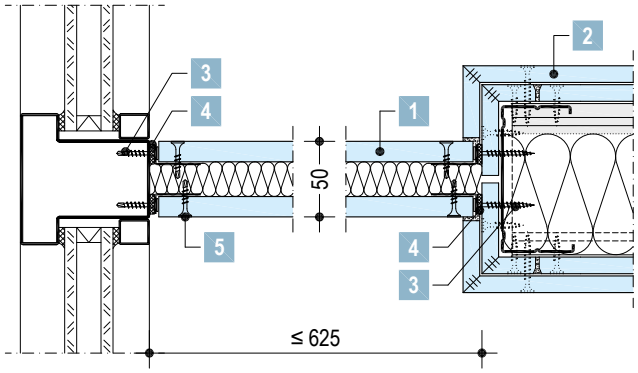
Resulting sound reduction index R_w = 57.7 dB.

Scheme drawings

Scale 1:5 I Dimensions in mm

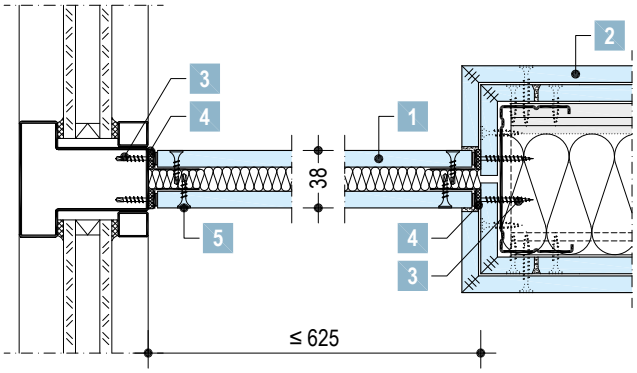
Variant 1

Connection to façade | Connection to metal stud partition



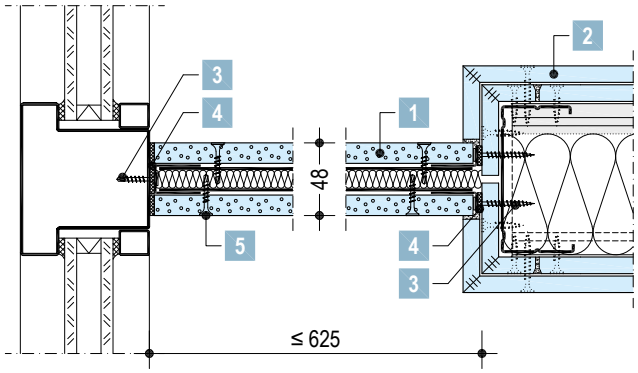
Variant 2

Connection to façade | Connection to metal stud partition



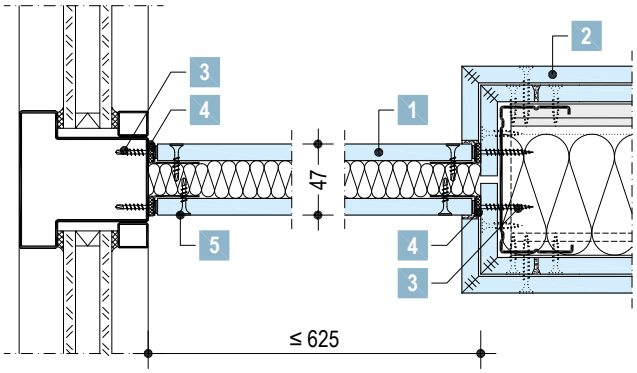
Variant 3

Connection to façade | Connection to metal stud partition



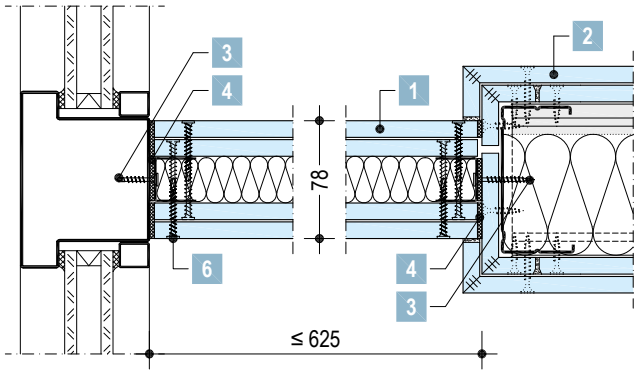
Variant 4

Connection to façade | Connection to metal stud partition



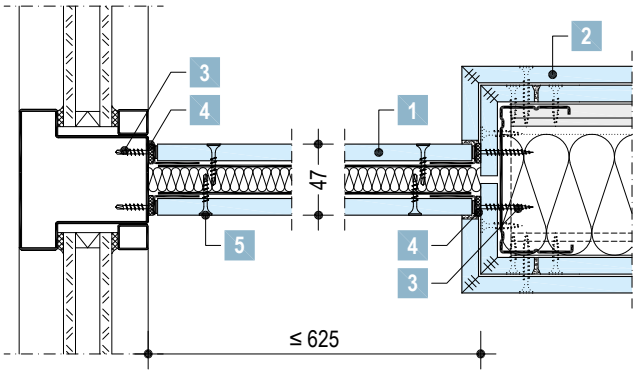
Variant 5

Connection to façade | Connection to metal stud partition



Variant 6

Connection to façade | Connection to metal stud partition



Legend:

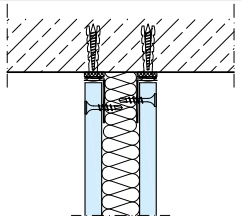
1. Wall breaks, see page 50 and page 51 for design
2. Metal stud partitions with joint section
3. Suitable fasteners: Spacing ≤ 500 mm
4. Suitable sealing e.g. Trennwandkitt acoustical sealant
5. Drywall Screw TB
6. Diamant Screw XTB

Notes

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.



Fire resistance – Wall breaks F30 to F90

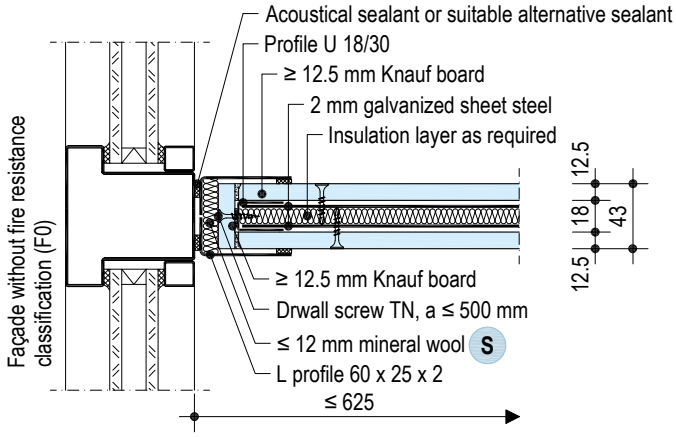
Details

Scale 1:5 I Dimensions in mm

W112.de-SO-H3 F30 – Loose connection to façade F0

Horizontal section

Sound reduction index acc. to variant 6 on page 52

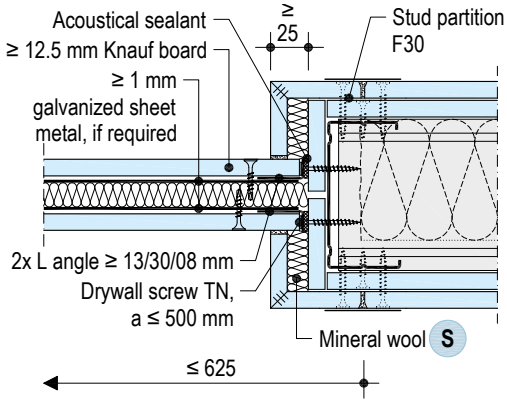


plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 53 recommended

W112.de-SO-H4 F30 – Connection to stud partition W112.de

Horizontal section

Sound reduction index acc. to variant 6 on page 52

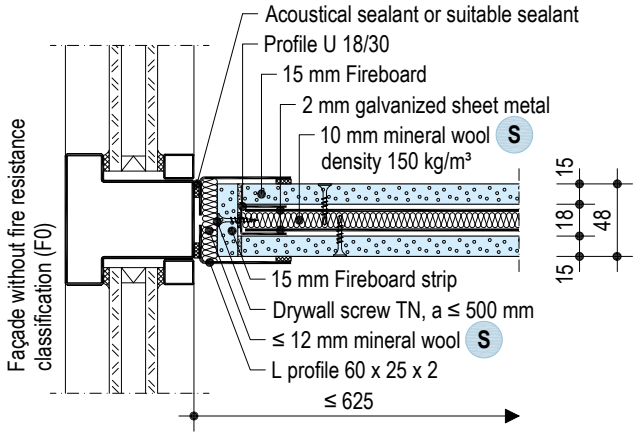


plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 53 recommended

W112.de-SO-H1 F90 – Loose connection to façade F0

Horizontal section

Sound reduction index acc. to variant 3 on page 52

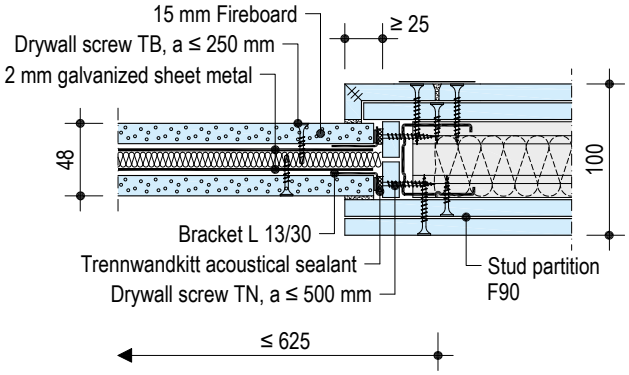


plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 53 recommended

W112.de-SO-H2 F90 – Connection to stud partition W112.de

Horizontal section

Sound reduction index acc. to variant 3 on page 52



plus **Extension of the fire resistance Proof of Usability**
Prior consultation in acc. to page 53 recommended

plus **Extension of the fire resistance Proof of Usability**
■ Wall break construction type
Prior consultation is recommended acc. to page 5.

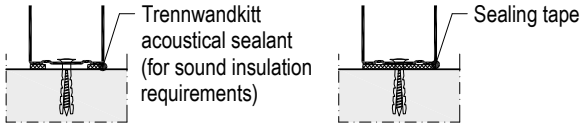
Notes	
	Maximum partition height ≤ 4.00 m
	Connection to façade / partition acc. to the details above. Connection to floor / ceiling and design of the wall breaks acc. to variant 3 (F90) or alt. variant 6 (F30) from page 52.
	If necessary, additional measures for covering of the connection joints can be required (edge profile, corner strip or similar).

Frame

General

Apply a suitable sealant to the rear side of runners for the connection to flanking constructional components. Ensure a carefully applied seal for sound insulation requirements analogue to the specifications of the DIN 4109-33:2016-07 section 4.1.1.3 (e.g. Trennwandkitt acoustical sealant) (Recommendation: always with Trennwandkitt acoustical sealant).

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 below.

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 to the building material, e.g. Knauf Universalschraube FN multi-purpose screws for wooden substrates, metal stud partitions, etc…

Maximum permissible fastener spacings
Without fire resistance

Supporting fastening of perimeter runner (UW) connection on basic floor and suspended ceiling			
Partition height m	Knauf Ceiling Steel Dowels (With reinforced steel) **1x** mm	Knauf Nailable Plug **1x** mm	Knauf multi-purpose screw FN (with wooden substrate screw-in depth > 24 mm, suspended ceiling) **1x** mm
W111.de, W112.de, W113.de, W115.de, W116.de (without fire resistance)			
≤ 3.00	1000	1000	1000
> 3.00 to ≤ 6.50	1000	500	500
> 6.50 to ≤ 12.00	500	–	Check the loadbearing capacity of the substrate – select suitable fasteners / anchors (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).

Maximum permissible fastener spacings
With fire resistance

Supporting fastening of perimeter runner (UW) connection on basic floor and suspended ceiling			
Partition height m	Knauf Ceiling Steel Dowels (With reinforced steel) **1x** mm	Knauf Nailable Plug **1x** mm	Knauf multi-purpose screw FN (with wooden substrate screw-in depth > 24 mm, suspended ceiling) **1x** mm
W111.de, W112.de, W113.de, W115.de, W116.de (with fire resistance)			
≤ 3.00	1000	1000	1000
> 3.00 to ≤ 5.00	1000	500	500
> 5.00 to ≤ 6.50	500	500	500
W112.de, W115.de, W116.de > 6.50 to ≤ 7.00	500	–	Check the loadbearing capacity of the substrate – select suitable fasteners / anchors (for 2 kN/m)
W113.de > 6.50 to ≤ 9.00			

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

Reduced maximum permissible spacings with edge fixing on floor constructions

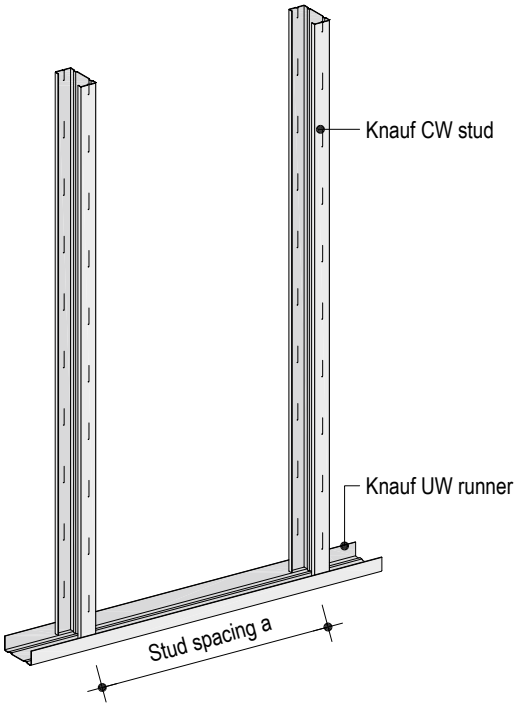
Supporting fastening of perimeter runner (UW) on floor constructions		
Anchoring substrate	Fastener	Spacing of fasteners
Pre-fab floor screed	Knauf Universalschraube FN multi-purpose screw	Halved – compared to above table
Flowing screed	Knauf Drehstiftdübel nailable plug	Halved – compared to above table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

Grid (continued)

Scheme drawings

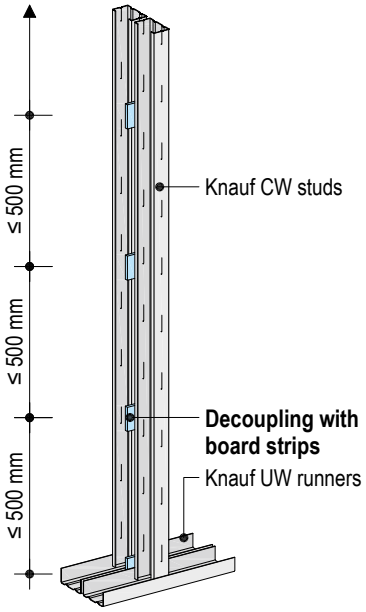
Place the CW studs into the UW runners arranged along the length at the required axial spacing and align them.

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



W115.de Decoupled double stud partition

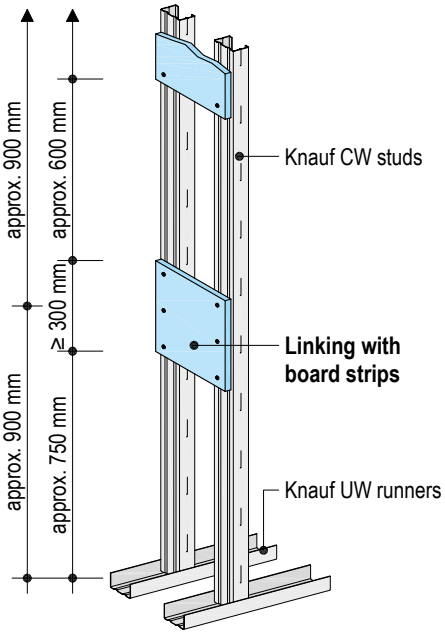
- Decoupling of the CW stud by self-adhesive insulation strip pieces on the entire partition height, spacing ≤ 500 mm



W116.de Linked double stud partition

Linking of the CW studs with Knauf board strips ≥ 300 mm in height on the entire wall height

- Spacing approx. every 900 mm
- The thickness of the link is dependent on the wall cavity **h**
  - **h ≤ 300 mm:** 12.5 mm Knauf boards
  - **h > 300 mm to ≤ 500 mm:** ≥ 20 mm Knauf boards / ≥ 18 mm Diamant (with double-layer linking: individual board thickness ≥ 12.5 mm)



Grid (continued)

Knauf recommendation: Use floor-to-ceiling profiles.

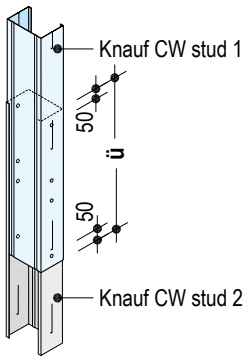
Profile extensions plus

Scheme drawings I Dimensions in mm

- Stagger the heights of the profile joints (alternating upper and lower wall half).
- With fire resistance requirements a maximum or 2 profile joints per stud is permitted.

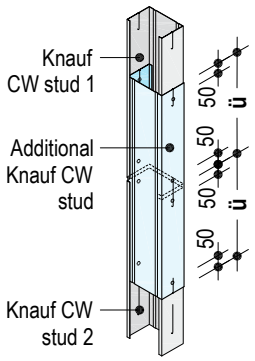
Option 1

2 CW studs interlaced to form a box.



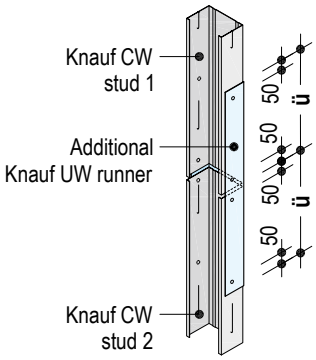
Option 2

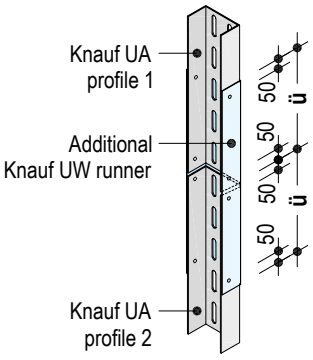
CW studs butt joint connected, interlaced with additional CW stud



Option 3

2 CW studs or 2 UA profiles butt jointed, connected with additional UW runner





Options 1 to 3

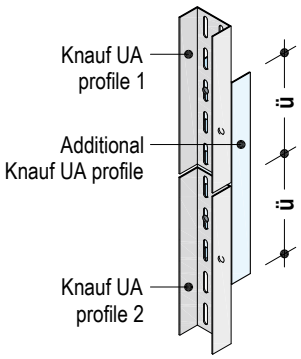
Rivet, screw fix or, if possible, crimp the profiles in the overlapping area.

Crimping pliers for crimp connection

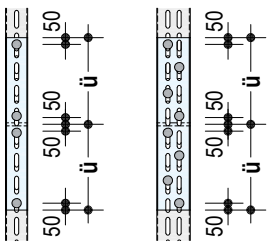
Option 4

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

For **UA profiles under load** e.g. door framing or Sanistand installation



Screw fasten using M8 carriage bolts 2x per UA profile or with self-tapping screws ≥ Ø 4.5 mm



plus **Extension of the fire resistance Proof of Usability**
Prior consultation is recommended acc. to page 5.

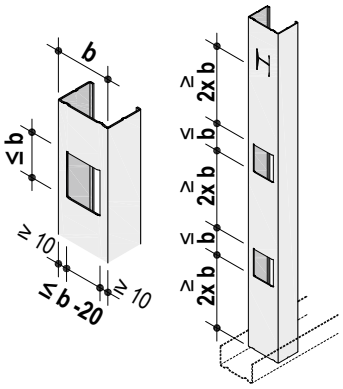
Profile extensions Knauf profiles	Overlap ü
CW 50 / UA 50	≥ 500 mm
CW 70 / UA 70	≥ 700 mm
CW 75 / UA 75	≥ 750 mm
CW 100 / UA 100	≥ 1000 mm
CW 125 / UA 125	≥ 1250 mm
CW 150 / UA 150	≥ 1500 mm

Web cut-out / H punches

Web cut-out – on-site

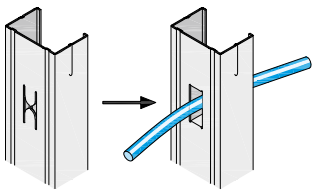
- Maximum **2** web cut-outs per metal stud (for CW 50 maximum 1 web cut-out)
- Observe the dimensions in acc. with the drawing
- Knauf CW studs / UA profiles **50/70/75/100/125/150**
- Cladding thickness per wall side **≥ 12.5 mm**

- Large number of smaller openings possible on request
- The openings can be provided in addition to the usual factory made H punches.
- Additional web cut-outs in the local load introduction area (cantilever loads / beam loads / dynamic loads) are not permissible.



H punches – factory-made

For **cable penetrations** in Knauf CW studs

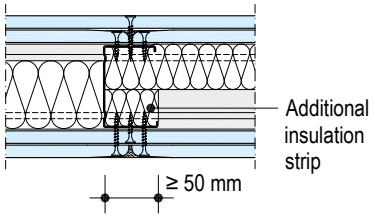


Insulation layer

General

Depending on the requirements for fire resistance, sound insulation and thermal insulation, secure the insulation against sliding (compress up to approx. 10 mm) and tightly joint in the grid (or if necessary install insulation strips to prevent sliding in the stud profiles).

Additional insulation strips for deviation of the insulation material thickness > 20 mm from the stud web width.

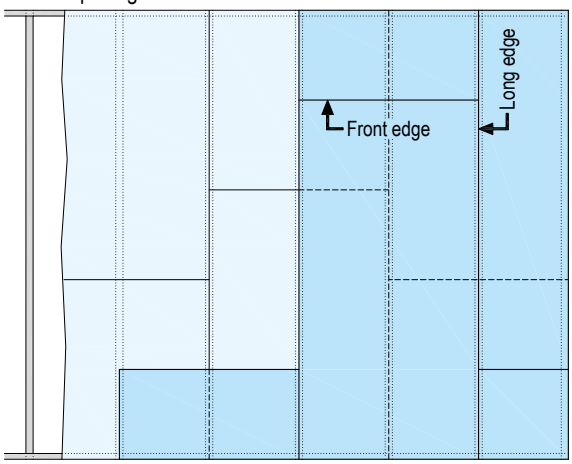


Installation schemes

Scheme drawings

Board layers vertical

- Board width: **1250** mm
- Stud spacing: 625 mm

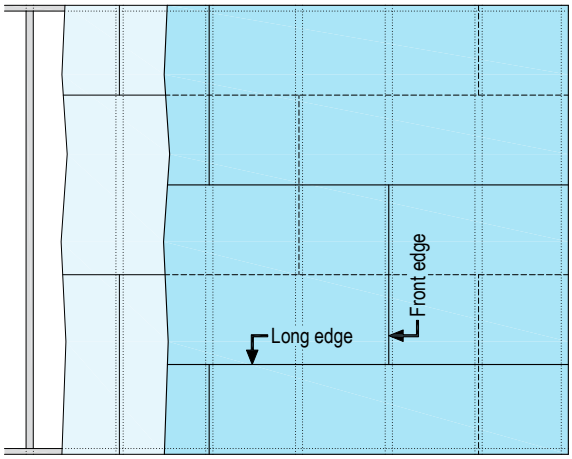


Lower/upper layer:

- Stagger the long edge joints by at least one stud spacing and arrange on the studs.
- If floor-to-ceiling boards are not used, stagger the front edge joints ≥ 400 mm in a cladding layer.
  - With fire resistance: single-layer ≥ 1000 mm
- Stagger the front edge joints between board cladding layers in case of multi-level cladding (approx. 250 mm).
- Front and long edge joints of cladding on opposing sides must also be staggered to one another.

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

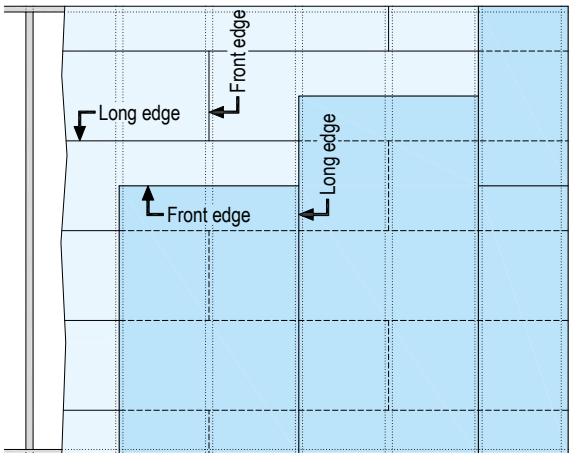
- Board width: **1250** mm
- Stud spacing: 625 mm



- 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.

Board layer 1 horizontal, board layer 2 vertical

- Board width: **625** mm (lower horizontal layer)
- 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 by ≥ 400 mm.

Offset between lower and upper layer:

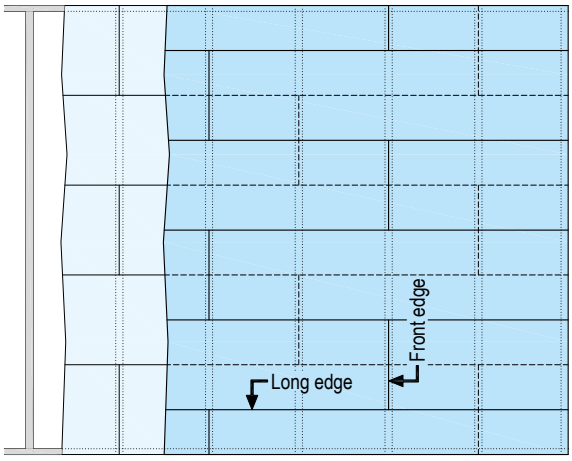
- Stagger the board joints of the upper layer by approx 312.5 mm to the board joints of the lower layer.

Offset of cladding on opposing sides:

- Board joints must also be staggered to one another.

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

Dimensions in mm

Fastening of the cladding to the stud frame with Knauf drywall screws

Cladding	Metal stud frame (penetration ≥ 10 mm)			
	Metal gauge **s ≤ 0.7 mm**		Metal gauge **0.7 mm < s ≤ 2.25 mm**	
Thickness mm	Drywall Screws **TN**	Diamant screws **XTN**	Drywall Screws **TB**	Diamant screws **XTB**
12.5	TN 3.5 x 25	XTN 3.9 x 23	TB 3.5 x 25	XTB 3.9 x 35
15	–	XTN 3.9 x 33	–	XTB 3.9 x 35
18	–	XTN 3.9 x 33	–	XTB 3.9 x 35
25	TN 3.5 x 35	–	TB 3.5 x 45	–
2x 12.5	TN 3.5 x 25 + TN 3.5 x 35	XTN 3.9 x 23 + XTN 3.9 x 38	TB 3.5 x 25 + 3.5 x 45	XTB 3.9 x 35 + 3.9 x 55
	TN 3.5 x 25 +	XTN 3.9 x 38[1)]	TB 3.5 x 25 +	XTB 3.9 x 55[1)]
25 + 12.5	TN 3.5 x 35 + TN 3.5 x 55	–	TB 3.5 x 45 + 3.5 x 55	–
	TN 3.5 x 35 +	XTN 3.9 x 55[1)]	TB 3.5 x 45 +	XTB 3.9 x 55[1)]
3x 12.5	TN 3.5 x 25 + 3.5 x 35 + 3.5 x 55	XTN 3.9 x 23 + 3.9 x 38 + 3.9 x 55	TB 3.5 x 25 + 3.5 x 45 + 3.5 x 55	XTB 3.9 x 35 + 3.9 x 55 + 3.9 x 55
	TN 3.5 x 25 + 3.5 x 35 +	XTN 3.9 x 55[1)]	TB 3.5 x 25 + 3.5 x 45 +	XTB 3.9 x 55[1)]

1) Combined cladding (Knauf boards + Diamant)

- Always use Diamant Screws when cladding Diamant and Silentboard.

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

Dimensions in mm

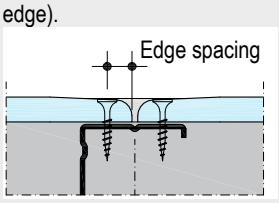
Cladding	1st layer			2nd layer			3rd layer		
	Vertical Board width 1250	Horizontal Board width 1250[2)]	Board width 625	Vertical Board width 1250	Horizontal Board width 1250[2)]	Board width 625	Vertical Board width 1250	Horizontal Board width 1250	Board width 625
1-layer	250	–	200	–	–	–	–	–	–
2-layer	750	610	600	250	250	200	–	–	–
3-layer	750	–	600	600	–	300	250	–	200[3)]

2) System W116.de

3) Upgrade with Silentboard

Note

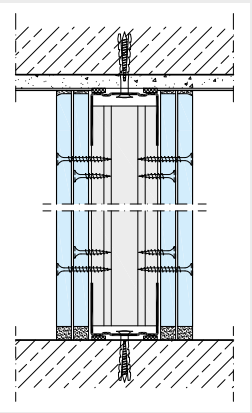
For optimum sound insulation arrange the screws as far as possible from the profile lap, i.e. with minimum spacing from edge (10 mm edge covered with board liner, 15 mm cut edge).



Arrange board joint on centre of profile flange.

Note

Alternative screw fastening only in the CW stud up to partition height ≤ 6.50 m is permissible.



Uppermost board layer stapled to the board layer below it

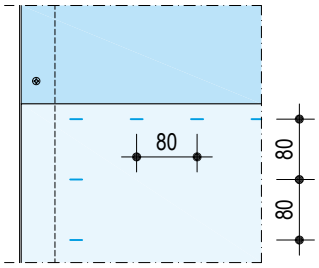
Scheme drawings I Dimensions in mm

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

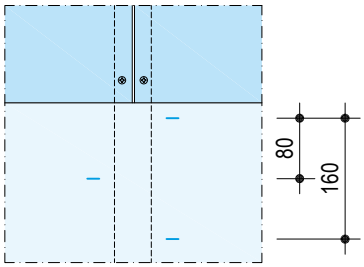
Cladding	1st layer	2nd layer	3rd layer
2-layer	250 (screwed)	80 (stapled)	–
3-layer	750 (screwed)	250 (screwed)	80 (stapled)

- 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 page 13)
- Observe the reduced fixing loads/cantilever loads (see page 18 and page 19)
- 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

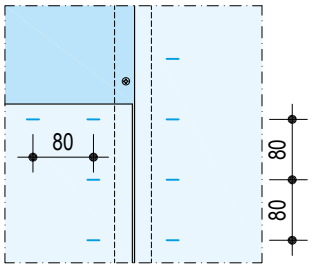
Perimeter studs



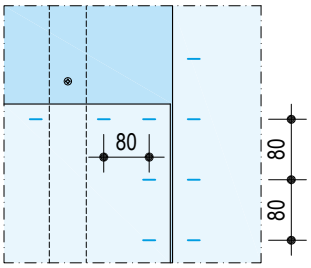
Field studs



Board joint - field studs



Board joint - “Non-supported joint”



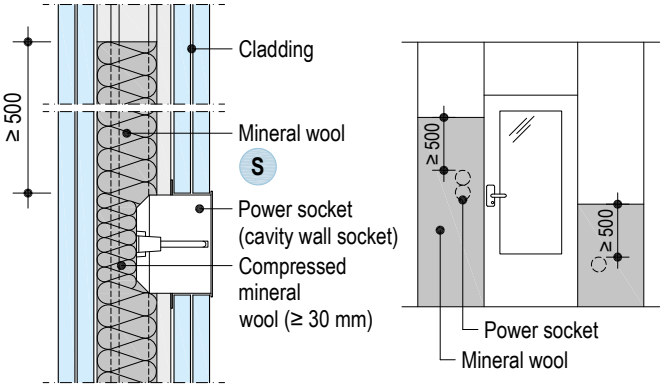
Power socket installation

Dimensions in mm

With fire resistance requirements

Power sockets, switch sockets, junction boxes, etc. may be installed at any position with Knauf partitions, except not directly opposite one another.
The lead through for a single electrical cable is permissible.
Openings must be sealed with gypsum mortar.
Insulation layers required for fire resistance reasons must be retained, however, they may be compressed to a thickness of ≥ 30 mm.

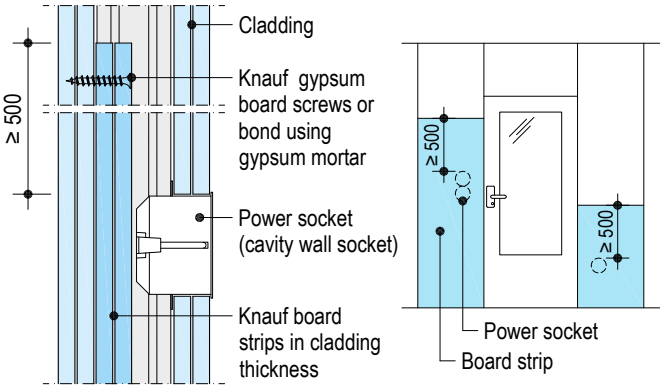
With mineral wool (only for single metal stud partitions)



Fill partition 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: ≥ 1.2 kg/m²** (e.g. 40 mm x 30 kg/m³)
  - **F60: ≥ 1.6 kg/m²** (e.g. 40 mm x 40 kg/m³)
  - **F90: ≥ 2.4 kg/m²** (e.g. 60 mm x 40 kg/m³)
- Compression of the mineral wool insulation layer up to a thickness of ≥ 30 mm is permissible.

With board strips (only for single metal stud partitions)

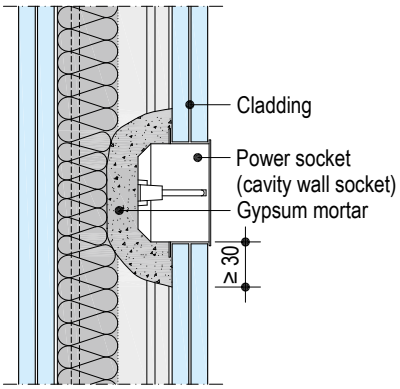


- Application of board strips with the same thickness as the cladding (glue to rear of board or fasten with Knauf gypsum board screws).
- The board strips must fully cover the following area:
  - Up to min. 500 mm above the highest power socket
  - Down to the floor and laterally to the next studs on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

Extension of the fire resistance Proof of Usability
- Power socket installation

Prior consultation is recommended acc. to page 5.

With gypsum mortar



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

Sound 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 partition 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, please refer to the sound insulation brochure: Interior wall SS04.de (chapter Built-ins - German only).

Notes	
	Built-in of e.g. cavity wall sockets not on the CW stud / UA profiles area.
	Refer to the product data sheets for Knauf access panels for access panel installation.
	Solutions for cable and pipe penetrations, refer to folder Fire resistance with Knauf BS1.de (German only).
	Solutions for power sockets located opposite one another: see e.g. KAISER GmbH & Co. KG (at: www.kaiser-elektro.de).

Jointing

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].

Fill in visible screw heads.

Suitable jointing materials

- Uniflott
  Hand filling without joint tape strips in the long joint edges
- Uniflott impregnated
  Hand filling of impregnated boards without joint tape in the long edge joints, water-repellent, matching green colour
- Fugenfüller Leicht
  Hand filling with joint tape, preferably with Knauf Fugendeckstreifen Kurt joint tape

Suitable finish filling compounds

- Q2, application by hand
  Uniflott, Uniflott imprägniert, Fill & Finish Light, Super Finish
- Q3/Q4, application by hand
  Spritzspachtel Plus, Super Finish, Fill & Finish Light
- Q3/Q4, machine application
  Spritzspachtel Plus (preferably Q3)

Jointing of the 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 resistance and sound insulation properties as well as the structural properties.

Recommended

Front edge and cut edge joints as well as mixed joints (e.g. HRAK half-rounded tapered edge + cut edge) of the visible cladding layers filled using Uniflott with Fugendeckstreifen Kurt joint tape as well.

Joint filling of the connection joints

Apply Trenn-Fix or Fugendeckstreifen Kurt joint tape when filling joints to adjacent drywall constructions, taking into consideration the conditions and requirements for crack resistance.

Observe code of practice no. 3 “Gipsplattenkonstruktionen - Fugen und Anschlüsse” (German only)” [1].

Apply Trenn-Fix when filling joints to adjacent solid or wooden construction components.

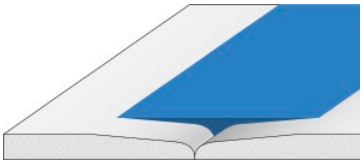
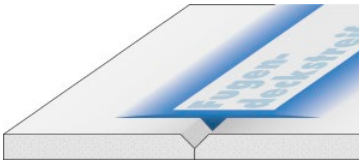
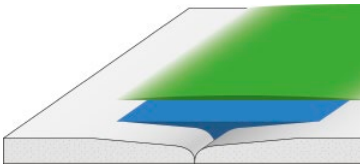
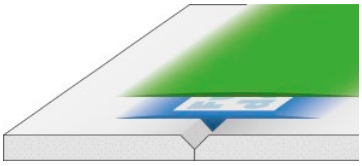
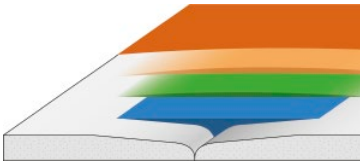
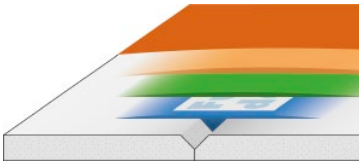
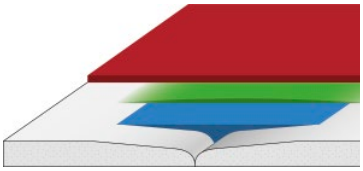
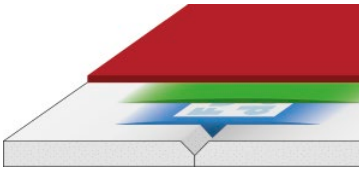
Sanding

Lightly sand visible surfaces after drying of the filler material, if required.

Application temperature/climate

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

1) Issued by the German Bundesverband der Gipsindustrie e. V.

Quality levels	Jointing Long edges half-rounded tapered edge/half-rounded edge	Jointing Front edge bevelled cut edge	Description of working steps
Q1			■ Fill joints with Uniflott or Uniflott imprägniert ■ Fill the visible parts of the fastener
Q2			■ Preliminary jointing in acc. with quality level Q1 ■ Finish (fine finish compound) to achieve a smooth transition to the board surface e.g. with Uniflott, Uniflott imprägniert, Spritzspachtel Plus, Fill & Finish Light or Super Finish No application marks or ridges may remain visible. Sand off the areas concerned if necessary.
Q3			■ Jointing in acc. with quality level Q2 ■ Wide jointing of the joints as well as clean and accurate removal of the remaining board liner filling the pores, e.g. with Fill & Finish Light or Super Finish or Spritzspachtel Plus If necessary, i.e. physical ridges and grooves are not acceptable and must be sanded.
Q4			■ Jointing in acc. with quality level Q2 ■ Complete surface covering of skim coat with a layer thickness of at least 1 mm, e.g. with Fill & Finish Light, Super Finish or Spritzspachtel Plus

Coatings and linings

Coating / lining	Recommended finish Gypsum boards EN 520
Tiles etc.	Q1
Coarsely structured wallpaper (e.g. wood-chip wallpaper)	Q2
Finely structured wallpaper	Q3/Q4
Matt textured coats	Q3/Q4
Glossy, smooth coats	Q4
Plasters (grain size < 1 mm)	Q3/Q4
Plasters (grain size ≥ 1 mm)	Q2

Pretreatment

Before a further coating or lining is applied, the filled surface must be free of dust. Prime acc. to code of practice no. 6 of the BVG "Vorbehandlung von Trockenbauflächen aus Gipsplatten zur weitergehenden Oberflächenbeschichtung bzw -bekleidung"[1].

Ensure that the primer is compatible with the coating / paint / lining.

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

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

Sealing primer Flächendicht is required for covering splash water areas with tiles. Observe the DIN 18534.

Note	Gypsum board surfaces that have constantly been exposed to light without any resistance can cause 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. Aton Sperrgrund for finishing plasters, Knauf Sperrgrund for coatings.

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 Spannarbeiten innen"[2] released by the Bundesausschuss Farbe und Sachwertschutz.
- Plaster and filler materials
  - Top coats (e.g. Noblo, Raumklima Spritzputz spray plaster, Rotkalk Filz)
  - Full surface plaster (e.g. Spritzspachtel Plus)
    Application of plaster layers only in conjunction with Fugendeckstreifen Kurt joint tape
- Decorative coats
  - Dispersion paint (e.g. Intol E.L.F., Malerweiss E.L.F.)
  - Silicate-based emulsion paints with suitable primer
  - Others on request
- Ceramic coverings (e.g. tiles)
  - Minimum cladding thickness 18 mm (Diamant: 15 mm), e.g. 2x 12.5 mm with stud spacing 625 mm
  - With narrower cladding thickness, reduce the stud spacing to max. 500 mm (417 mm with vertical cladding) .
  - Tile weights up to 25 kg/m^2 (one-sided) with a max. surface per tile of 1800 cm^2 (e.g. 60 x 30 cm) have proven to be uncritical (compare to code of practice 8:2019-12 Partition heights of lightweight partitions[1]).

Unsuitable coatings and linings

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

Notes	After wallpapering or after application of plasters, quick drying must be ensured through adequate airing. 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 the Knauf Metal Stud Partitions.

1) Issued by the German Bundesverband der Gipsindustrie e. V.

2) Issued by the German Bundesausschuss Farbe und Sachwertschutz

Knauf Drywall Systemfinder

The right systems for your applications

► **The right systems for your requirements**
Range of applications:
Interior walls, installation shaft walls, furrings, dry lining, suspended ceilings, free-spanning ceilings and attic cladding

► **The appropriate system in just four steps**
- Select your desired drywalling category
- Enter your requirements
- The Knauf system finder shows you a selection of appropriate systems, including downloads and tender specifications
- Refine the results with further filter settings

knauf.de/systemfinder

Knauf Schallschutzrechner

Find the right sound insulation solution!

► **Problem-free fulfilment of all specifications**
DIN 4109, VDI 4100, individual preferences of the investors: The demands made on the sound insulation are both diverse and sophisticated. The Schallschutzrechner sound insulation calculator helps you to comply with all specifications and supports you in the configuration of a solution for your project:

► **Tailor-made sound insulation in just six easy steps**
- Test of the demands with every step
- Consideration of the critical connections to walls, ceilings and floors
- Clear representation of the results and the display of possible weakpoints in the room

knauf.de/schallschutzrechner

Information on Sustainability

Knauf Metal Stud Partitions

Information on sustainability of Knauf Metal Stud Partitions

Building assessment systems ensure the sustainable quality of buildings and constructional structures by a detailed assessment of ecological, economic, social, functional and technical aspects.

In Germany the following certification systems are of particular relevance:

- DGNB system
  Deutsches Gütesiegel Nachhaltiges Bauen der DGNB
  (*German association for environmentally sustainable building*)
- BNB
  (Quality rating system for environmentally sustainable building)
- LEED
  (Leadership in Energy and Environmental Design).

Knauf products and Knauf Metal Stud Partitions 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 Partitions
- Criterion: Suitability for conversion
  Flexible Knauf Drywalling

Technical quality

- Criterion: Sound insulation
  Exceeding the demands of the standard with Knauf sound resistance
- 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

Videos for Knauf systems and products can be found under the following link:
www.youtube.com/knauf

Find the right system for your requirements!
knauf.de/systemfinder

The iPad App Knauf Infothek now provides all the current information and documents from Knauf Gips KG at any time and in every location in a clear and comfortable way.
Knauf Infothek

Knauf Direct
Technical Advisory Service:

knauf-direkt@knauf.de

www.knauf.de

Knauf Gips KG Am Bahnhof 7, 97346 Iphofen, Germany

W11.de/eng/04.20/0/Dbl

The stated constructional and structural design specifications and characteristics of building physics of Knauf systems can only be ensured with the exclusive use of Knauf system components, or other products expressly recommended by Knauf.