

## Knauf Free-Spanning Ceilings

D131.de Knauf Free-Spanning Ceilings

K219.de Knauf Free-Spanning Fireboard Ceilings A1

### 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

<b>Introduction</b>	
Usage instructions   General instructions .....	4
Certificate of usability .....	5
System overview .....	6
<b>Data for planning</b>	
<b>D131.de Technical and physical building data</b> .....	8
Without fire resistance .....	8
Fire protection F30 solely from below .....	10
Fire resistance F30 solely from below and from above (plenum) .....	12
Fire resistance F60 solely from below and from above (plenum) .....	14
<b>K219.de Technical and physical building data</b> .....	16
Fire protection F90 solely from below .....	16
Fire resistance F90 solely from below and from above (plenum) .....	18
<b>Airborne and impact sound insulation</b> .....	20
<b>Permissible furring channel spacings</b> .....	22
<b>Anchoring of loads</b> .....	23
<b>Construction details</b>	
<b>D131.de without fire resistance</b> .....	24
<b>D131.de F30 solely from below</b> .....	26
<b>D131.de F30 solely from below and from above</b> .....	28
<b>D131.de F60 solely from below and from above</b> .....	30
<b>K219.de F90 solely from below</b> .....	32
<b>K219.de F90 solely from below and from above</b> .....	34
<b>Special details</b> .....	36
<b>Special versions</b>	
<b>T connection and L connection</b> .....	44
Simplified procedure .....	44
Exact procedure .....	45
<b>Metal traverse</b> .....	52
<b>Centre suspension</b> .....	53
<b>Multi-Level Ceiling System</b> .....	54

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	<b>Installation and application</b>	
	<b>Grid</b> .....	58
	CW furring channels.....	58
	UA furring channels.....	59
	Connection to wall with furring channels CW.....	60
	Connection to wall with furring channels UA.....	62
	<b>Insulation layer   Top side covering layer   Cladding</b> .....	64
	<b>Cladding</b> .....	65
	<b>Jointing</b> .....	66
	<b>Coatings and linings</b> .....	67
	<b>Material requirement</b>	
	Knauf Free-Spanning Ceilings D131.de.....	68
	Knauf Free-Spanning Ceilings K219.de.....	70
	<b>Information on sustainability</b>	
	Knauf Free-Spanning Ceilings .....	72

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## Usage instructions

### Notes on the document

Knauf System Data Sheets are the planning and application basis for the 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) and/or German National Technical Approvals (abZ)) 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

- Free-spanning ceilings with increased span widths  
see Technical Information Tro143.de “Knauf Free-Spanning Ceilings”
- Suspended ceilings linings and suspended ceilings  
see System Data Sheet D11.de “Knauf Board Ceilings”
- Board ceilings and free-spanning suspended ceilings under wooden batten ceilings (basic ceilings of building type IV), see System Data Sheet D15.de “Knauf Holzbalkendecken-Systeme” (German only)
- Acoustic board ceilings,  
see System Data Sheet D12.de “Knauf Acoustic Board Ceilings”
- Observe the Product Data Sheets of the Knauf system components

### Symbols in System Data Sheet

The following symbols are used in this document:

- 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  $\geq 1000$  °C  
acc. to DIN 4102-17  
(insulating material, e.g. from Knauf Insulation)
- b** Axial spacing furring channel (cladding span width)

## Intended use of Knauf systems

Please observe the following:

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

### Definition of terms

Knauf Free-Spanning Ceilings are applied as suspended ceilings. The following definition applies acc. to DIN 18168-1:

Suspended ceilings are: “... ceilings of even or other design with smooth, perforated or jointed surface consisting of a substructure and a surface layer forming the area ...”.

The connection of the ceiling described as “free-spanning” is the support for the freely-supporting furring channel, implemented as UW perimeter runners or UA profiles using Knauf connection angles and connection brackets.

The connection described as “constructive” is the perimeter connection to the furring channels.

### Field of application

Knauf Free-Spanning Ceilings are used

- In interiors as suspended ceilings under the solid ceiling, wood joist ceilings and trapezoid sheet metal ceilings for improving the fire resistance, sound insulation or thermal protection, for manufacturing a completely free installation level between the basic ceiling and the exposed ceiling as well as for regulating the room height.
- In exterior areas not directly exposed to the weather under specific circumstances, such as with a corrosion-protected grid and suitable boards, e.g. Knauf Drystar Board. A preliminary dimensioning of the grid / wood frame taking the demands that apply in exterior areas into consideration (pressure / suction) can be undertaken on request.

### Fire resistance effect

If the fire resistance effect from the classification of Knauf Board Ceiling is achieved without involvement or consideration of the basic ceiling, the fire resistance is referred to as *solely*.

This is relevant in particular when the plenum is to be protected against the exposure to fire from the room (fire resistance *solely from below*) or a protective effect for the room against fire exposure from the plenum (fire resistance *solely from above*).

A combination of both requirements may be necessary depending on the requirements stipulated by the building inspectorate and/or fire resistance concept.

### Movement joints

Movement joints have to be transferred into the construction of the Free-Spanning Ceilings. Use control joints in the case of ceiling areas exceeding approx. 15 m in length, e.g. for narrow ceiling spaces caused by a break of a wall. Separate connections of boards to components made of a different building material, especially columns, or thermally highly stressed built-ins such as lighting fixtures, for instance with shadow gaps.

Certificate of usability

Knauf system	Fire protection	Sound insulation
D131.de	F30: abP P-3964/2172-MPA BS F60: abP P-SAC 02/III-511	Knauf sound insulation proof T 007-06.10 T 008-10.10 T 009-10.10 T 010-07.10 T 011-07.10
K219.de	F90: abP P-3085/3824-MPA BS	

Notes on fire resistance

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

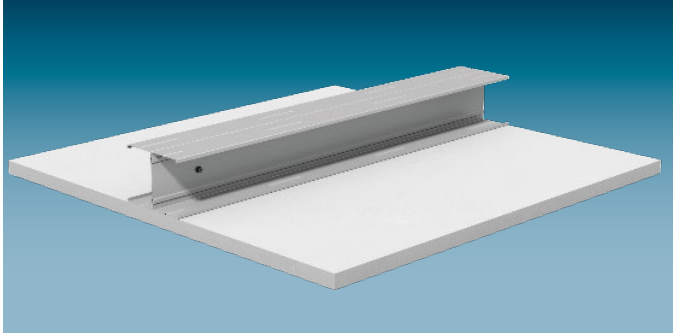
The stated constructional and structural properties, and characteristic building physics of Knauf systems can solely be ensured with the exclusive use of Knauf system components, or other products expressly recommended by Knauf. The validity and up-to-datedness of the stated proofs have to be considered.

### Knauf Free-Spanning Ceilings

Knauf Free-Spanning Ceilings are attached exclusively as suspended ceilings anchored to the surrounding walls. Knauf boards are fastened to a metal substructure grid made of Knauf CW/UA profiles as single or double profiles.

#### D131.de Knauf Free-Spanning Ceiling

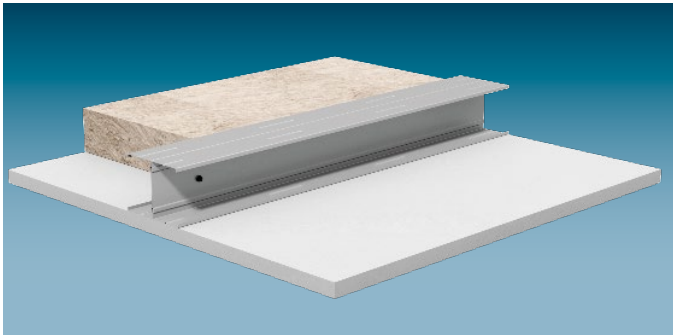
Without fire resistance



Knauf boards are fixed with screws to a metal grid of free-spanning furring channels made of single or double CW or UA profiles. The furring channels are anchored only to the flanking walls. A sound insulation effective insulation layer can be laid between the furring channels (upon the cladding). Depending on the system variants selected, room widths (span widths) up to 6.00 m are possible.

#### D131.de Knauf Free-Spanning Ceiling

Fire resistance F30 solely from below

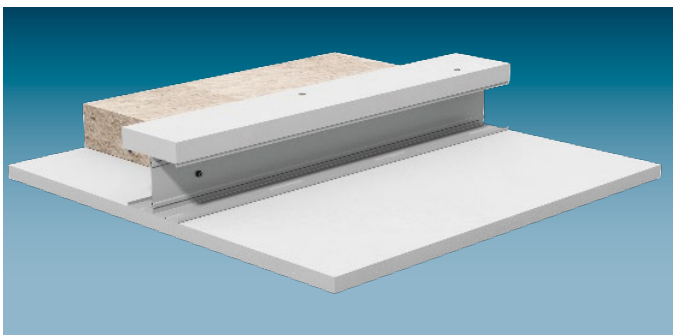


Knauf boards are fixed with screws to a metal grid of free-spanning furring channels made of double CW or UA profiles. The furring channels are anchored only to the flanking walls. A system variant dependent effective fire resistance and/or sound insulation layer is laid between the furring channels (upon the cladding).

Depending on the system variants selected, room widths (span widths) up to 5.45 m are possible.

#### D131.de Knauf Free-Spanning Ceiling

Fire resistance F30 solely from below and from above

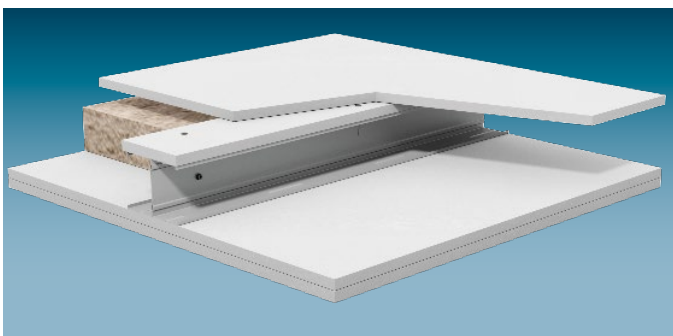


Knauf boards are fixed with screws to a metal grid of free-spanning furring channels made of single or double CW or UA profiles with additional covering strips. The furring channels are anchored only to the flanking walls. A fire resistance and sound insulation effective insulation layer is laid between the furring channels (upon the cladding).

Depending on the system variants selected, room widths (span widths) up to 4.80 m are possible.

#### D131.de Knauf Free-Spanning Ceiling

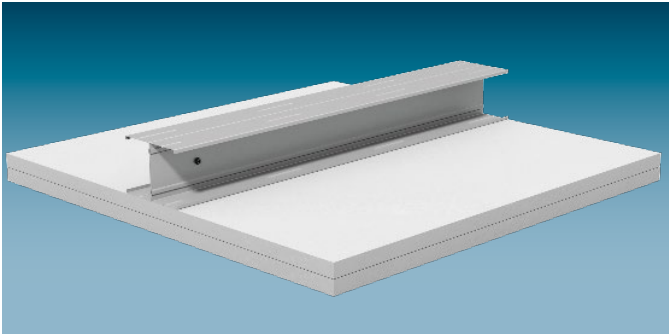
Fire resistance F60 solely from below and from above



Knauf boards are fixed with screws to a metal grid of free-spanning furring channels made of single or double CW or UA profiles with additional covering strips. The furring channels are anchored only to the flanking walls. A top side covering layer made of gypsum boards is obligatory for fire resistance reasons. A fire resistance and sound insulation effective insulation layer is laid between the furring channels (upon the cladding).

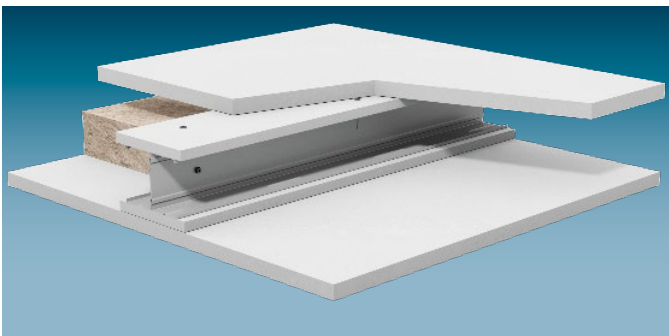
Depending on the system variants selected, room widths (span widths) up to 4.20 m are possible.

**K219.de** Knauf Free-Spanning Fireboard Ceiling A1  
 Fire resistance F90 solely from below



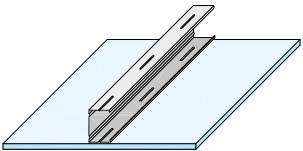
Knauf Fireboards are fixed with screws to a metal grid of free-spanning furring channels made of double CW or UA profiles. The furring channels are anchored only to the flanking walls. A system variant dependent effective sound insulation layer is laid between the furring channels (upon the cladding). Depending on the system variants selected, room widths (span widths) up to 4.95 m are possible.

**K219.de** Knauf Free-Spanning Fireboard Ceiling A1  
 Fire resistance F90 solely from below and from above



Knauf Fireboards are fixed with screws to a metal grid of free-spanning furring channels made of double CW or UA profiles with additional covering strips. The furring channels are anchored only to the flanking walls. A top side covering layer made of Fireboard is obligatory for fire resistance reasons. A fire resistance and sound insulation effective insulation layer is laid between the furring channels (upon the cladding). Depending on the system variants selected, room widths (span widths) up to 4.35 m are possible.

Without fire resistance

	Fire resistance class		Cladding (lateral application)					Furring channel		Insulation layer		
	With fire exposure		Knauf Bauplatte Wallboard	Knauf Piano fire-resistant board	Knauf fire-resistant board	Diamant	Silentboard	Minimum thickness mm	Max. axial clearances CW/UA profile		Required for fire resistance	
	From below	From above							Single profile mm	Double profile mm	Minimum thickness mm	Minimum density kg/m <sup>3</sup>
<b>D131.de Knauf Free-Spanning Ceiling</b>												
 e.g. CW single profile	-	-	•				12.5	500	500	-		
						•	12.5	-	500			
						•	15	-	500			
						•	2x 12.5	-	500			
						•	12.5	-	400			
						•	12.5 + 12.5	-	400			

With combined cladding always use Diamant as a cover layer

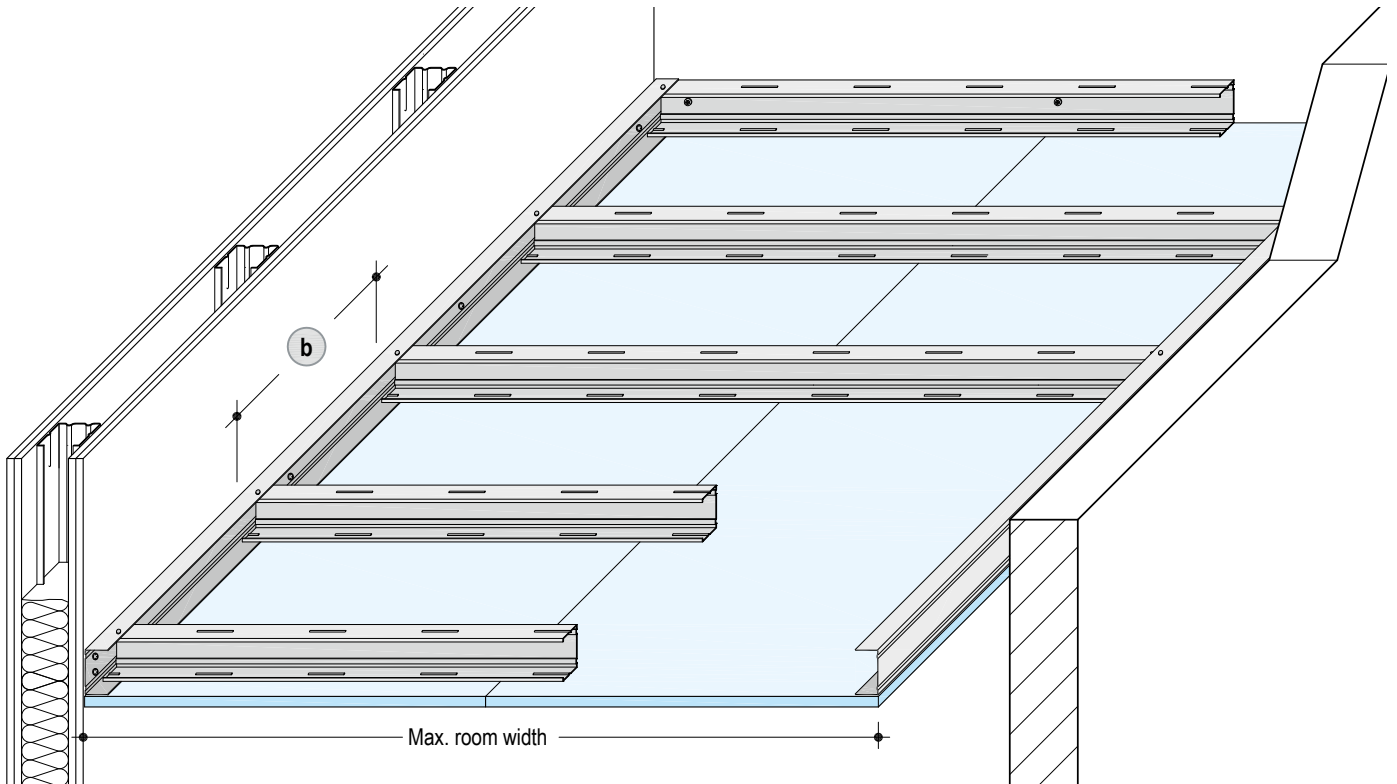
**Permissible connections to wall**

Free-Spanning Ceilings D131.de without fire resistance can be connected to the supporting connection as well as to the structural connection on the solid walls and lightweight partitions (metal stud partitions).

**Note** Observe the notes on page 4.



## Maximum room width



## Metal grid – free-spanning, single profile

Knauf profile	Max. room width <sup>1)</sup> Knauf Bauplatte Wallboard 12.5 mm m
<b>CW single profile metal gauge 0.6 mm</b>	
CW 50	2.50
CW 75	3.15
CW 100	3.65
CW 125	4.15
CW 150	4.60
<b>UA single profile metal gauge 2.0 mm</b>	
UA 50	3.00
UA 75	3.70
UA 100	4.35
UA 125	4.95
UA 150	5.45

## Metal grid – free-spanning, double profile

Knauf profiles	Maximum room width <sup>1)</sup>						
	Knauf Bauplatte Wallboard 12.5 mm m	Diamant			Silentboard		Silentboard 12.5 mm
		12.5 mm m	15 mm m	2x 12.5 mm m	12.5 mm m	+ Diamant 12.5 mm m	
<b>CW double profile metal gauge 0.6 mm</b>							
2x CW 50	2.90	2.75	2.65	2.40	2.70	2.45	
2x CW 75	3.60	3.45	3.35	3.05	3.40	3.05	
2x CW 100	4.25	4.05	3.90	3.55	3.95	3.60	
2x CW 125	4.80	4.55	4.40	4.00	4.50	4.05 <sup>2)</sup>	
2x CW 150	5.30	5.05	4.90	4.45	4.95	4.50 <sup>2)</sup>	
<b>UA double profile metal gauge 2.0 mm</b>							
2x UA 50	3.35	3.25	3.15	2.90	3.20	2.95	
2x UA 75	4.15	4.00	3.90	3.60	3.95	3.65 <sup>2)</sup>	
2x UA 100	4.85	4.70	4.60	4.25 <sup>2)</sup>	4.65 <sup>2)</sup>	4.30 <sup>2)</sup>	
2x UA 125	5.45	5.30	5.15 <sup>2)</sup>	4.80 <sup>2)</sup>	5.25 <sup>2)</sup>	4.85 <sup>3)</sup>	
2x UA 150	6.00 <sup>2)</sup>	5.85 <sup>2)</sup>	5.70 <sup>2)</sup>	5.35 <sup>3)</sup>	5.80 <sup>3)</sup>	5.40 <sup>3)</sup>	

## Knauf profiles

Knauf CW/UA profile as the furring channel	Knauf UW perimeter runner on connection to wall load bearing
(2x) CW/UA 50	→ UW 50
(2x) CW/UA 75	→ UW 75
(2x) CW/UA 100	→ UW 100
(2x) CW/UA 125	→ UW 125
(2x) CW/UA 150	→ UW 150

- 1) Max. room widths: Including additional loads ( $0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$ ) for insulation layers necessary for sound insulation measures and/or fixing loads.
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
 $\geq 18 \text{ mm}$  Knauf Boards /  $\geq 15 \text{ mm}$  Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.

## Notes

Larger room widths possible on request.

Free-spanning ceiling profiles may not be joined or extended (larger room widths possible with centre suspension)

Fire protection F30 solely from below

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)					Furring channel CW/UA double stud profile Max. axial clearances (b)	Insulation layer		
	From below	From above	Knauf Bauplatte Wallboard	Knauf Piano fire-resistant board	Knauf fire-resistant board	Diamant	Silentboard		Minimum thickness	mm	Minimum thickness
From below No fire resistance requirements for basic ceiling / roof construction											
		With fire exposure									
D131.de Knauf Free-Spanning Ceiling											
	F30	-		•			18	625	Mineral wool 40 (G)	-	
						•	18	625			
					•		2x 12.5	500	Without or Mineral wool (G)		
						•	2x 12.5	500			
						•	12.5 + 12.5	400			

With combined cladding always use Diamant as a cover layer

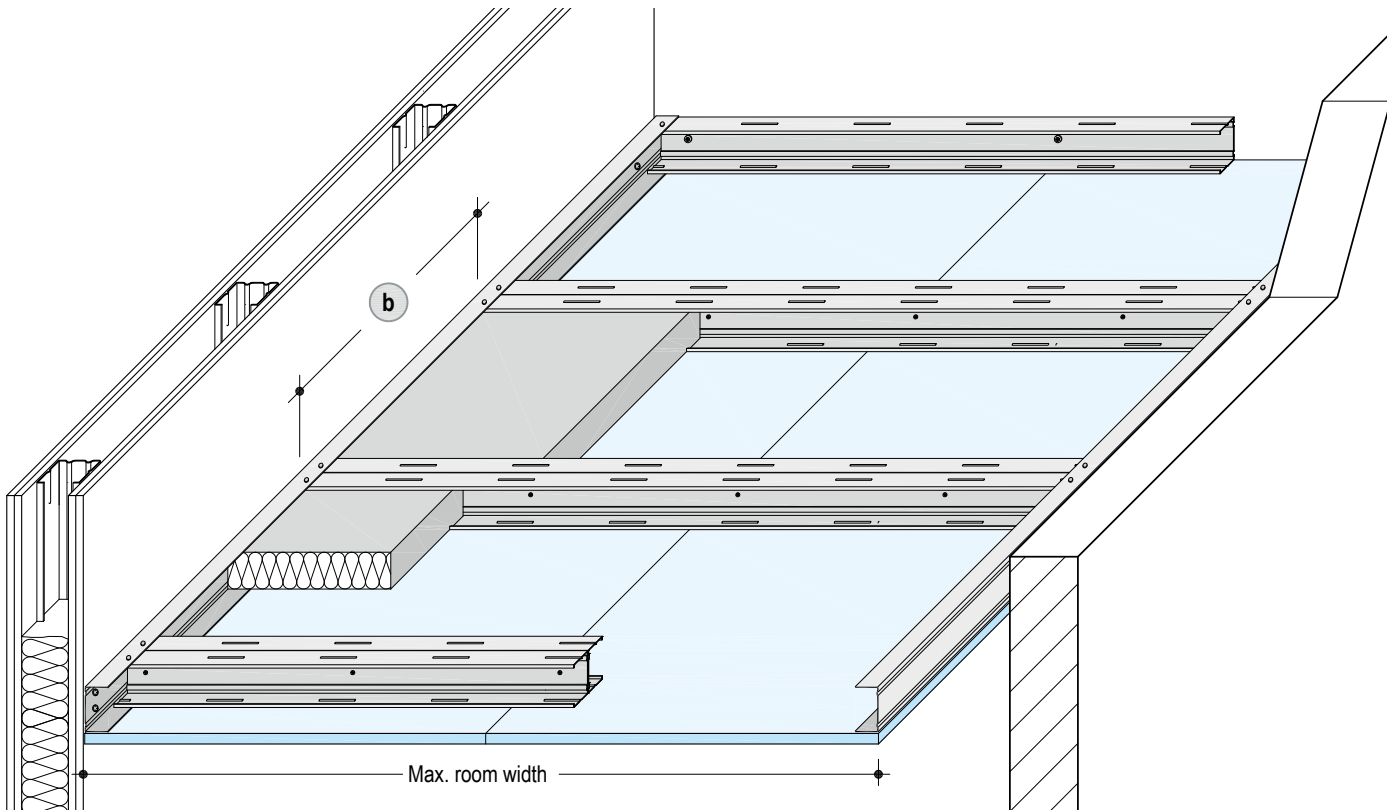
Permissible connections to wall

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

**plus** Extension of the fire resistance Certificate of Usability  
 ■ Implemented as fire resistance class F30 solely from below  
 Prior consultation in acc. to page 5 is recommended.

**Note** Observe the notes on page 4.

Maximum room width



Knauf profiles

Knauf CW/UA profile as a furring channel	Knauf UW perimeter runner on connection to wall load bearing
2x CW/UA 50	→ UW 50
2x CW/UA 75	→ UW 75
2x CW/UA 100	→ UW 100
2x CW/UA 125	→ UW 125
2x CW/UA 150	→ UW 150

Metal grid – free-spanning

Knauf profiles	Maximum room width <sup>1)</sup>				
	Knauf Piano fire-resistant board 2x 12.5 mm m	Knauf fire-resistant board 18 mm m	Diamant 18 mm m	2x 12.5 mm m	Silentboard 12.5 mm + Diamant 12.5 mm m

Knauf CW double profile metal gauge 0.6 mm					
2x CW 50	2.50	2.55	2.45	2.40	2.45
2x CW 75	3.15	3.15	3.05	3.05	3.05
2x CW 100	3.65	3.70	3.60	3.55	3.60
2x CW 125	4.15	4.20	4.10	4.00	4.05 <sup>2)</sup>
2x CW 150	4.60	4.65	4.50	4.45	4.50 <sup>2)</sup>

Knauf UA double profile metal gauge 2.0 mm					
2x UA 50	3.00	3.00	2.95	2.90	2.95
2x UA 75	3.70	3.75	3.65	3.60	3.65 <sup>2)</sup>
2x UA 100	4.35 <sup>2)</sup>	4.40	4.30	4.25 <sup>2)</sup>	4.30 <sup>2)</sup>
2x UA 125	4.95 <sup>2)</sup>	5.00	4.85 <sup>2)</sup>	4.80 <sup>2)</sup>	4.85 <sup>3)</sup>
2x UA 150	5.45 <sup>2)</sup>	5.50 <sup>2)</sup>	5.40 <sup>2)</sup>	5.35 <sup>2)</sup>	5.40 <sup>3)</sup>

Notes

Free-spanning ceiling profiles may not be joined or extended (larger room widths possible with centre suspension)  
Application with Safeboard possible, room widths on request



**Extension of the fire resistance Certificate of Usability**  
■ Implemented as fire resistance class F30 solely from below  
Prior consultation in acc. to page 5 is recommended.

- 1) Max. room widths: including additional loads (0.03 kN/m<sup>2</sup> = 3 kg/m<sup>2</sup>) for insulation layers or fixing loads required for fire resistance and/or sound insulation
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
≥ 18 mm Knauf Boards /  
≥ 15 mm Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.

Fire resistance F30 solely from below and from above (plenum)

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)					Furring channel CW/UA double stud profile Max. axial clearances <b>b</b>	Insulation layer			
	From below	From above	Knauf Bauplatte Wallboard	Knauf Piano fire-resistant board	Knauf fire-resistant board	Diamant	Silentboard		Minimum thickness	mm	mm	kg/m <sup>3</sup>
<b>From below</b> No fire resistance requirements for basic ceiling / roof construction  <b>From above (Plenum)</b> Raw ceiling must have same fire resistance class as suspended ceiling	With fire exposure											
<b>D131.de Knauf Free-Spanning Ceiling</b>												
Covering strips <b>25 mm Massivbauplatte Solid Board</b>  	F30	F30			•		18		625	Mineral wool <b>S</b> 60      30 Alternative Mineral wool <b>S</b> <b>plus</b> 40      40		
							•		18			625
					•				2x 12.5		<b>plus</b>	500
							•		2x 12.5		<b>plus</b>	500
							•	•	12.5 + 12.5		<b>plus</b>	400

With combined cladding always use Diamant as a cover layer

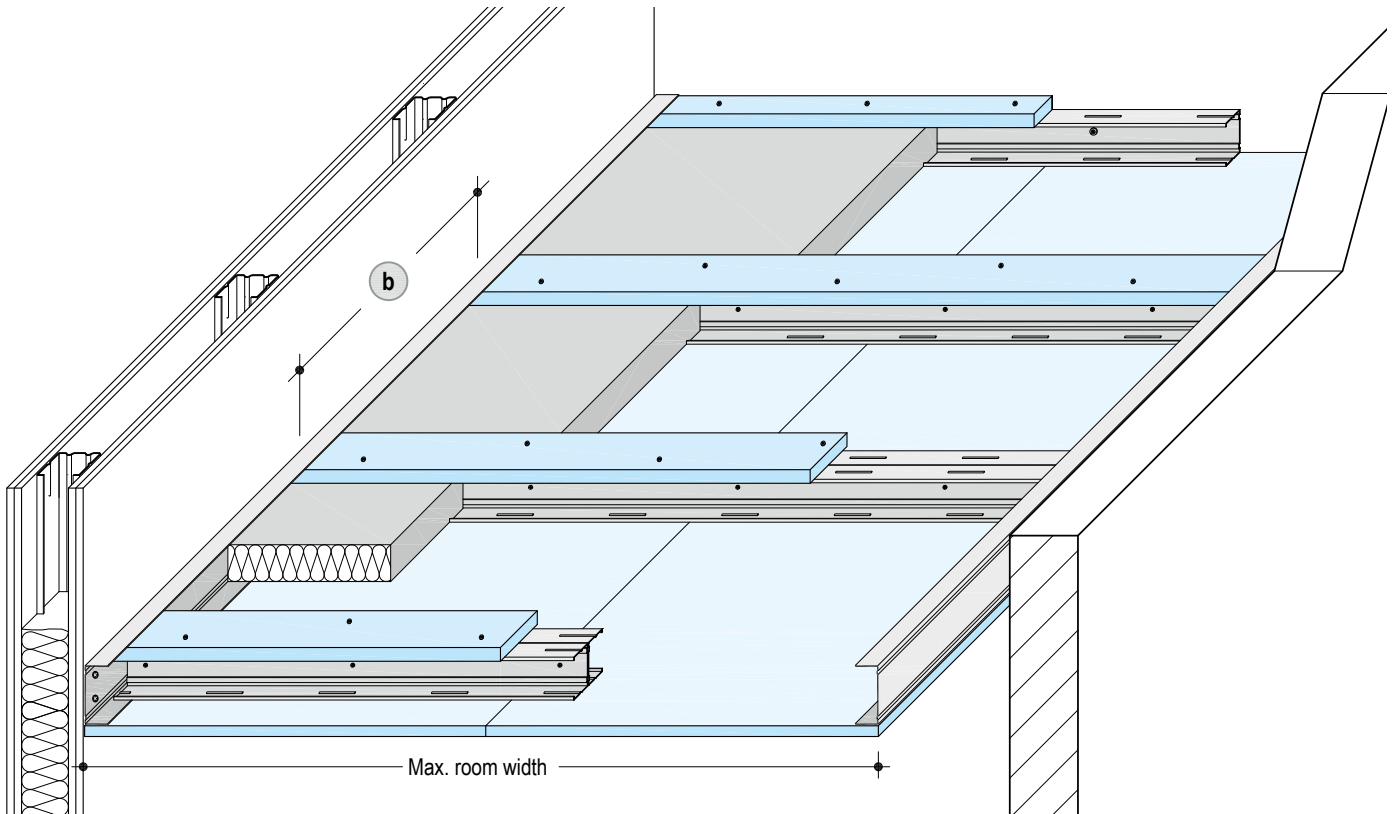
Permissible connections to wall

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

- plus** Extension of the fire resistance Certificate of Usability
- Cladding with 2x 12.5 mm
  - Connection to lightweight partition
  - Connection to walls with shadow gaps
  - When using mineral wool **S** thickness 40 mm, density 40 kg/m<sup>3</sup>  
Prior consultation in acc. to page 5 is recommended.

**Note** Observe the notes on page 4.

### Maximum room width



#### Knauf profiles

Knauf CW/UA profile as a furring channel	Knauf UW perimeter runner on connection to wall load bearing
2x CW/UA 50	→ UW 75
2x CW/UA 75	→ UW 100
2x CW/UA 100	→ UW 125
2x CW/UA 125	→ UW 150

#### Metal grid – free-spanning

Knauf profiles	Maximum room width <sup>1)</sup>					
	Knauf Piano fire-resistant board	Knauf Feuer-schutzplatte fire-resistant board	Diamant		Silent-board 12.5 mm + Diamant 12.5 mm	
2x12.5 mm <b>plus</b>	18 mm	18 mm	18 mm	18 mm	2x12.5mm <b>plus</b>	2x12.5mm <b>plus</b>
m	m	m	m	m	m	m

#### Knauf CW double profile metal gauge 0.6 mm

2x CW 50	2.30	–	2.35	–	2.20	2.15	2.20
2x CW 75	2.90	3.00	3.00	2.80	2.80	2.75	2.80
2x CW 100	3.45	3.00	3.50	3.00	3.35	3.25	3.30
2x CW 125	3.95	3.00	4.05	3.00	3.85	3.75	3.80 <sup>2)</sup>

#### **plus** Knauf UA double profile metal gauge 2.0 mm

2x UA 50	2.90	–	2.90	–	2.85	2.80	2.85
2x UA 75	3.55	–	3.60	–	3.50	3.50	3.50 <sup>2)</sup>
2x UA 100	4.20 <sup>2)</sup>	–	4.25	–	4.15	4.10 <sup>2)</sup>	4.15 <sup>3)</sup>
2x UA 125	4.80 <sup>2)</sup>	–	4.80 <sup>2)</sup>	–	4.70 <sup>2)</sup>	4.65 <sup>3)</sup>	4.70 <sup>3)</sup>

**Note** Free-spanning ceiling profiles may not be joined or extended (larger room widths possible with centre suspension)

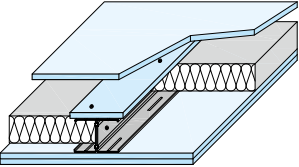
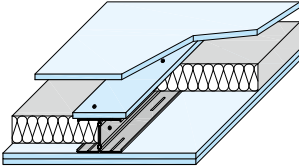


#### Extension of the fire resistance Certificate of Usability

- Extended maximum room widths
  - Cladding with 2x 12.5 mm
  - Implemented with UA profiles
- Prior consultation in acc. to page 5 is recommended.

- 1) Max. room widths: including additional loads (0.03 kN/m<sup>2</sup> = 3 kg/m<sup>2</sup>) for insulation layers or fixing loads required for fire resistance and/or sound insulation
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection: ≥ 18 mm Knauf Boards / ≥ 15 mm Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.

Fire resistance F60 solely from below and from above (plenum)

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (lateral application)					Furring channel CW/UA double stud profile Max. axial clearances <b>b</b> mm	Insulation layer		
	From below	From above	Knauf Bauplatte Wallboard	Knauf Piano fire-resistant board	Knauf fire-resistant board	Diamant	Silentboard		mm	Required for fire resistance	Minimum thickness mm
<b>From below</b> No fire resistance requirements for basic ceiling / roof construction  <b>From above (Plenum)</b> Raw ceiling must have same fire resistance class as suspended ceiling											
<b>D131.de Knauf Free-Spanning Ceiling</b>											
Covering strips 12.5 mm Knauf Piano fire-resistant board 	F60	F60	•					2x 12.5 + 12.5 additional board layer (cover board)	500	Mineral wool <b>S</b> 50	50
Covering strips 12.5 mm Diamant 	F60	F60		•				2x 12.5 + 12.5 additional board layer (cover board)	500	Mineral wool <b>S</b> 50	50

Permissible connections to wall

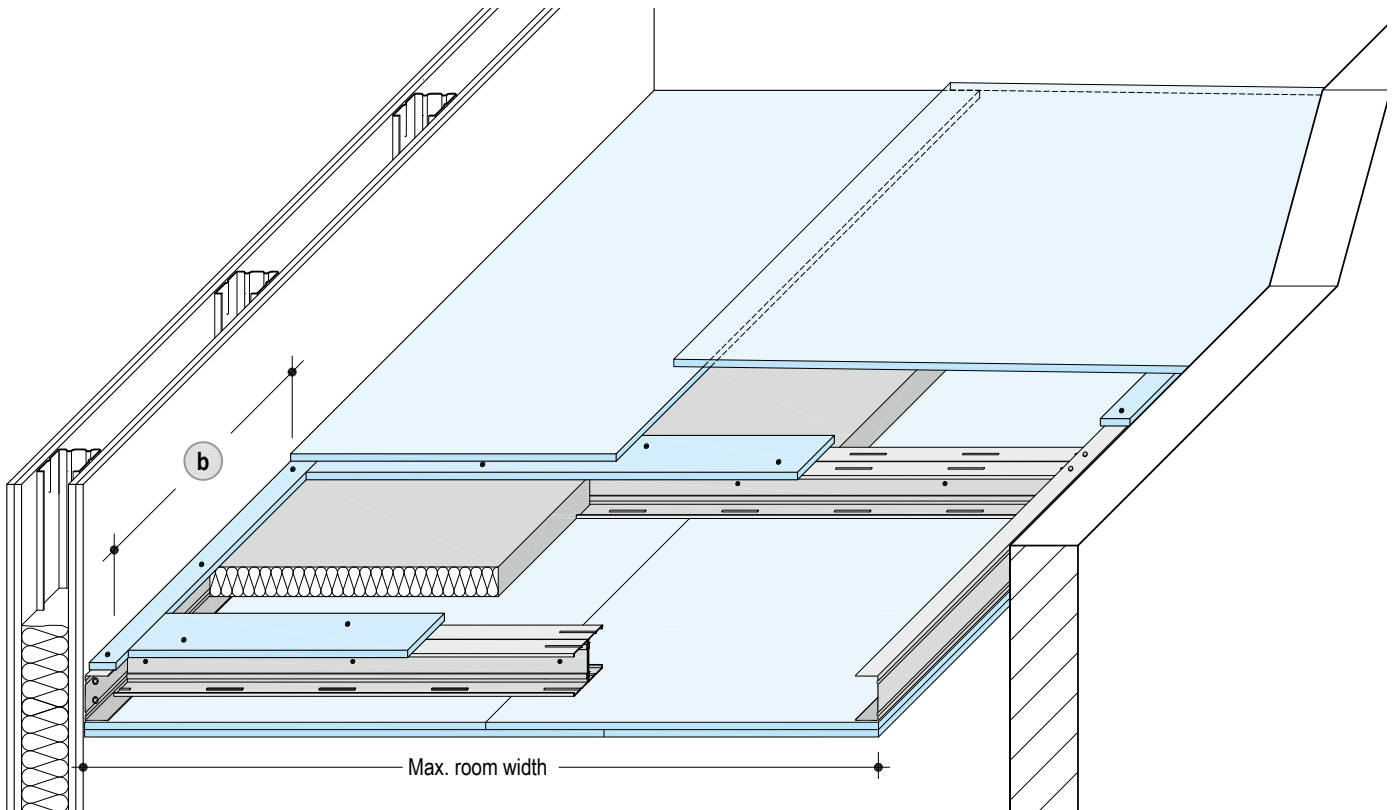
Connection	Solid wall (e.g. concrete, reinforced concrete or masonry)	Lightweight partition (metal stud partitions)
	Fire resistance class	Fire resistance class
<b>Direct</b>		
Load-bearing	≥ F60	<b>plus</b> ≥ F60
Constructional		
<b>Shadow gap</b>		
Load-bearing	≥ F60	<b>plus</b> ≥ F60
Constructional		

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

- Connection to lightweight partition
- Prior consultation in acc. to page 5 is recommended.

**Note** Observe the notes on page 4.

## Maximum room width



## Knauf profiles

Knauf CW/UA profile as a furring channel	Knauf UW perimeter runner on connection to wall load bearing
2x CW/UA 50	→ UW 50
2x CW/UA 75	→ UW 75
2x CW/UA 100	→ UW 100
2x CW/UA 125	→ UW 125
2x CW/UA 150	→ UW 150

## Metal grid – free-spanning

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

**Note** Free-spanning ceiling profiles may not be joined or extended.


**Extension of the fire resistance Certificate of Usability**

- Implemented with double profile CW 50 / 75 / 100 / 125
  - Implemented with UA profiles
- Prior consultation in acc. to page 5 is recommended.

- 1) Max. room widths: including additional loads (0.03 kN/m<sup>2</sup> = 3 kg/m<sup>2</sup>) for insulation layers or fixing loads required for fire resistance and/or sound insulation
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
≥ 18 mm Knauf Boards /  
≥ 15 mm Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.

Fire protection F90 solely from below

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (parallel cladding)		Furring channel	Insulation layer	
	From below	From above	Fireboard	Minimum thickness mm	CW/UA double stud profile  Max. axial clearances b mm	Required for fire resistance  Minimum thickness mm	Minimum density kg/m <sup>3</sup>
From below No fire resistance requirements for basic ceiling / roof construction							
<b>K219.de Knauf Free-Spanning Fireboard Ceiling A1</b>							
	F90	–	•	2x 20	625	Without or Mineral wool <b>G plus</b>	

Permissible connections to wall

Connection	Solid wall (e.g. concrete, reinforced concrete or masonry)	Lightweight partition (metal stud partitions)
	Fire resistance class	Fire resistance class
<b>Direct</b>		
Load-bearing	≥ F90	<b>plus</b> ≥ F90
Constructional		
<b>Shadow gap</b>		
Load-bearing	<b>plus</b> ≥ F90	<b>plus</b> ≥ F90
Constructional		

- If the free-spanning ceiling is connected (anchored) to a lightweight partition (F90), an additional, ≥ 18 mm thick Knauf Feuerschutzplatte fire-resistant board or Fireboard cladding layer is necessary for the full surface wall partition doubling up on the side of the supporting connection.
- Wall thickness min. 100 mm

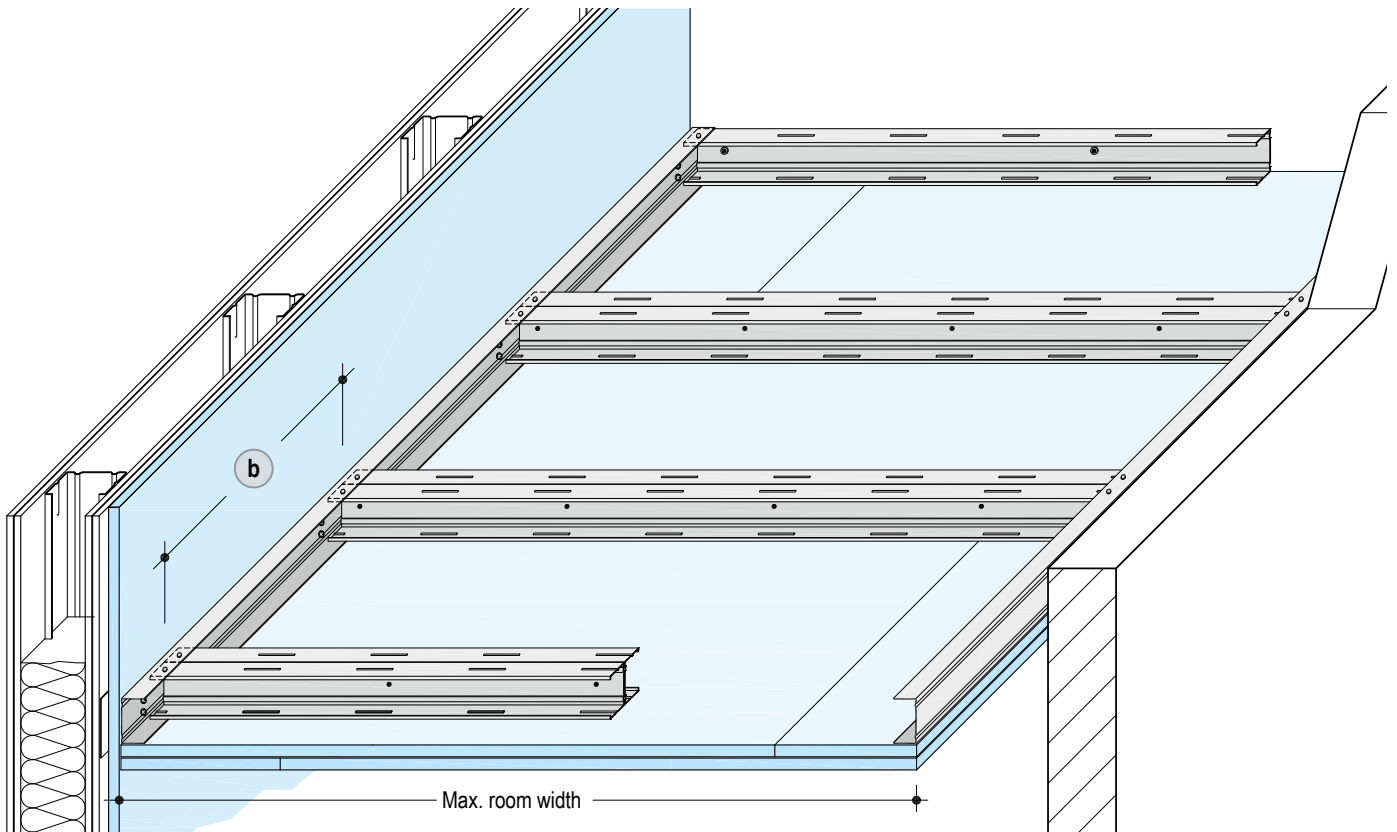
**plus** Extension of the fire resistance Certificate of Usability

- Connection to lightweight partition
  - Connection to walls with shadow gaps
  - Using mineral wool **G**
- Prior consultation in acc. to page 5 is recommended.

**Note** Observe the notes on page 4.



### Maximum room width



#### Knauf profiles

Knauf CW/UA profile as a furring channel	Knauf UW perimeter runner on connection to wall load bearing
2x CW/UA 50	→ UW 50
2x CW/UA 75	→ UW 75
2x CW/UA 100	→ UW 100
2x CW/UA 125	→ UW 125
2x CW/UA 150	→ UW 150

#### Metal grid – free-spanning

Knauf profiles	Maximum room width <sup>1)</sup>	
	Fireboard 2x 20 mm	plus
	m	m
<b>Knauf CW double profile metal gauge 0.6 mm</b>		
2x CW 50	–	2.20
2x CW 75	2.75	2.75
2x CW 100	3.25	3.25
2x CW 125	3.65	3.65
2x CW 150	4.00 <sup>2)</sup>	4.05 <sup>2)</sup>
<b>plus Knauf UA double profile metal gauge 2.0 mm</b>		
2x UA 50	–	2.65
2x UA 75	–	3.30
2x UA 100	–	3.90 <sup>2)</sup>
2x UA 125	–	4.45 <sup>2)</sup>
2x UA 150	–	4.95 <sup>3)</sup>

#### Note

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

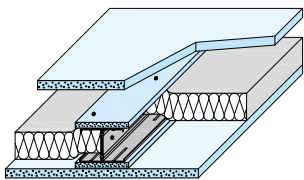
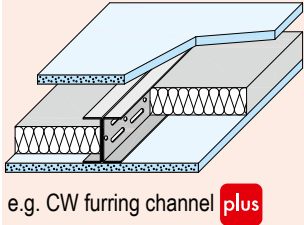


#### Extension of the fire resistance Certificate of Usability

- Extended maximum room widths
  - Implemented with UA profiles
- Prior consultation in acc. to page 5 is recommended.

- 1) Max. room widths: Including additional loads ( $0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$ ) for insulation layers or fixing loads required for fire resistance and/or sound insulation
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
  - ≥ 18 mm Knauf boards /
  - ≥ 15 mm Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.

Fire resistance F90 solely from below and from above (plenum)

Requirements on the basic ceiling for fire exposure	Fire resistance class		Cladding (parallel cladding)	Furring channel CW/UA double stud profile	Insulation layer Required for fire resistance		
	From below	From above			Minimum thickness	Minimum thickness	Minimum density
<b>From below</b> No fire resistance requirements for basic ceiling / roof construction	With fire exposure		Fireboard	Max. axial clearances <b>b</b>	mm	mm	kg/m <sup>3</sup>
<b>From above (Plenum)</b> Raw ceiling must have same fire resistance class as suspended ceiling	From below	From above					
<b>K219.de Knauf Free-Spanning Fireboard Ceiling A1</b>							
Covering strips <b>12.5 mm Fireboard</b>  e.g. CW furring channel	<b>F90</b>	<b>F90</b>	• 20 + 20 additional board layer (cover board)	625	Mineral wool <b>S</b> 60      50		
 e.g. CW furring channel <b>plus</b>							

Permissible connections to wall

Connection	Solid wall (e.g. concrete, reinforced concrete or masonry)	Lightweight partition (metal stud partitions)
	Fire resistance class	Fire resistance class
<b>Direct</b>		
Load-bearing	≥ F90	≥ F90
Constructional	≥ F90	≥ F90
<b>Shadow gap</b>		
Load-bearing	<b>plus</b> ≥ F90	<b>plus</b> ≥ F90
Constructional	≥ F90	<b>plus</b> ≥ F90

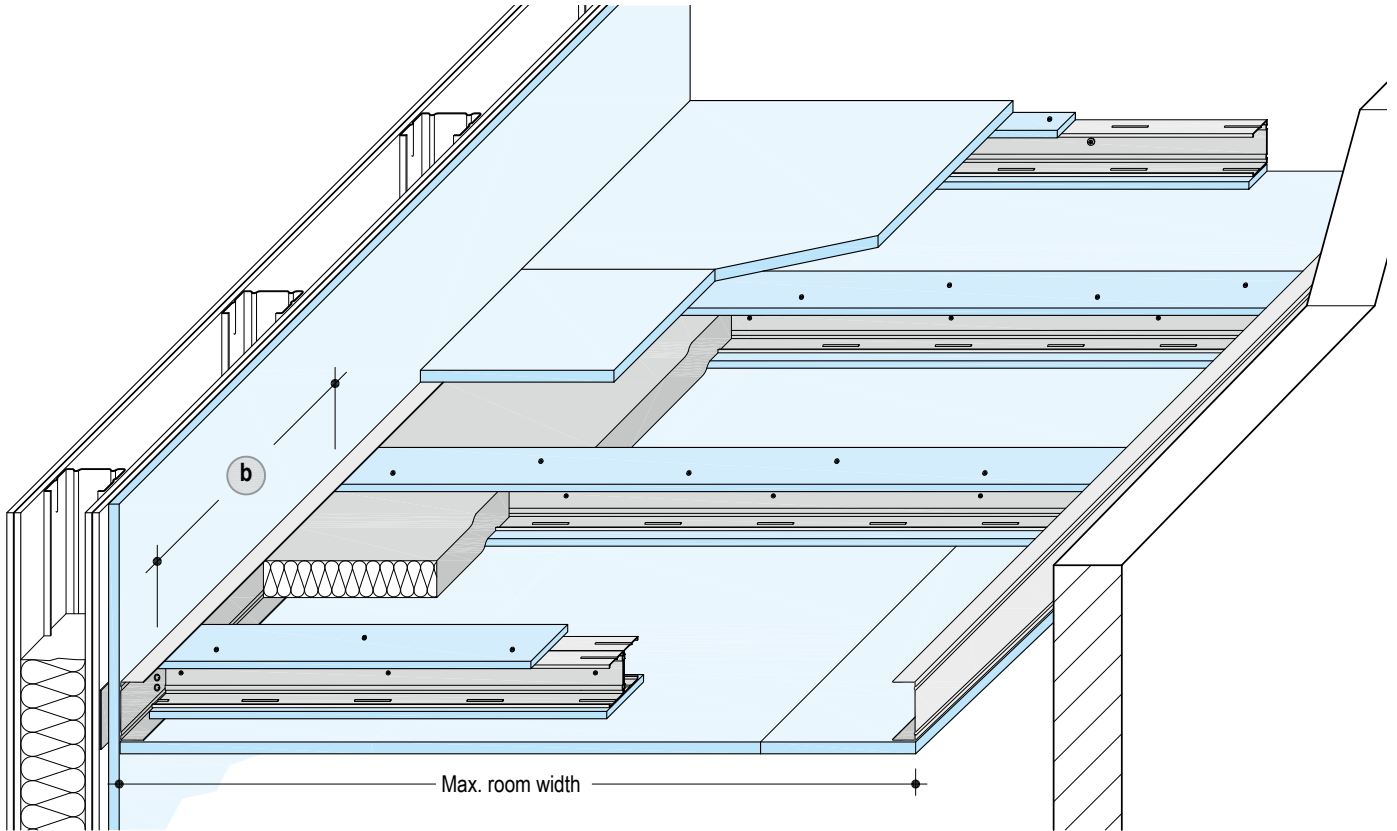
- If the free-spanning ceiling is connected (anchored) to a lightweight partition (F90), an additional, ≥ 18 mm thick Knauf Feuerschutzplatte fire-resistant board or Fireboard cladding layer is necessary for the full surface wall partition doubling up on the side of the supporting connection. Under the doubling up a Flex Profile should be inserted at the level of the connection to the ceiling.
- Wall thickness min. 100 mm

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

- Connection to walls with shadow gaps  
Prior consultation in acc. to page 5 is recommended.

**Note** Observe the notes on page 4.

### Maximum room width



#### Knauf profiles

Knauf CW/UA profile as a furring channel	Knauf UW perimeter runner on connection to wall load bearing
<b>With covering strips</b>	
2x CW/UA 50	→ UW 75
2x CW/UA 75	→ UW 100
2x CW/UA 100	→ UW 125
2x CW/UA 125	→ UW 150
<b>Without covering strip</b>	
2x UA 50	→ UW 50
2x UA 75	→ UW 75
2x UA 100	→ UW 100
2x UA 125	→ UW 125

When applied with UA furring channels it is possible to omit the covering strips on the upper and lower flanges of the double profiles.

**Note** Free-spanning ceiling profiles may not be joined or extended.



#### Extension of the fire resistance Certificate of Usability

- Extended maximum room widths
- Implemented with double profiles UA 50 / 75 / 125
- Prior consultation in acc. to page 5 is recommended.

#### Metal grid – free-spanning

Knauf profiles	Maximum room width <sup>1)</sup> Fireboard 20 mm	
	m	<b>plus</b> m
<b>Knauf CW double profile metal gauge 0.6 mm</b>		
2x CW 50	–	2.15
2x CW 75	2.65	2.65
2x CW 100	3.00	3.15
2x CW 125	3.00	3.55
<b>Knauf UA double profile metal gauge 2.0 mm</b>		
2x UA 50	–	2.60
2x UA 75 <b>plus</b>	–	3.25
2x UA 100	3.00	3.85 <sup>2)</sup>
2x UA 125 <b>plus</b>	–	4.35 <sup>3)</sup>

- Max. room widths: including additional loads (0.03 kN/m<sup>2</sup> = 3 kg/m<sup>2</sup>) for insulation layers or fixing loads required for fire resistance and/or sound insulation
- Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
≥ 18 mm Knauf Boards /  
≥ 15 mm Diamant
- Metal traverse required with flanking metal stud partitions. See page 52 for installation.

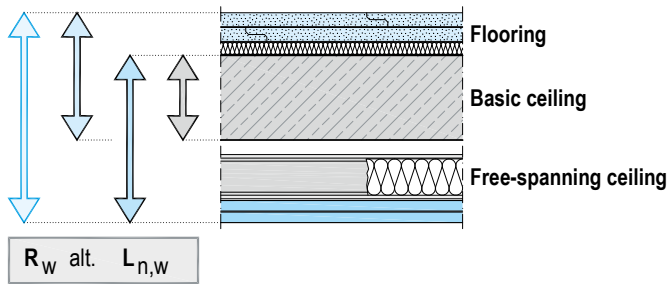
Airborne and impact sound insulation

All dimensions in mm

Basic ceiling Reinforced concrete ceiling 140 mm, approx. 320 kg/m <sup>2</sup> (standard reference floor) 	Without floor				Basic ceiling + flooring construction								Flooring screed			
					Knauf pre-fab floor screed ■ 1x 18 mm Brio WF				■ 2x 23 mm Brio ■ 20 mm Knauf Insulation Trittschall-Dämmplatte TP-GP				Flowing screed ■ 40 mm Knauf FE50 ■ 9.5 mm Knauf GKB ■ 25 mm mineral wool Trittschall-Dämmplatte stiffness group 10			
	R <sub>w</sub> dB	R <sub>w,R</sub> dB	L <sub>n,w</sub> dB	L <sub>n,w,R</sub> dB	R <sub>w</sub> dB	R <sub>w,R</sub> dB	L <sub>n,w</sub> dB	L <sub>n,w,R</sub> dB	R <sub>w</sub> dB	R <sub>w,R</sub> dB	L <sub>n,w</sub> dB	L <sub>n,w,R</sub> dB	R <sub>w</sub> dB	R <sub>w,R</sub> dB	L <sub>n,w</sub> dB	L <sub>n,w,R</sub> dB
Without suspended ceiling (all dimensions in mm)	53	51	80	82	58	56	57	59	62	60	49	51	65	63	41	43
Basic ceiling + suspended ceiling D131.de				Basic ceiling + flooring + subceiling												
 ■ 2x CW 75 ■ 12.5 Diamant	69 <sup>1)</sup>	65	54 <sup>1)</sup>	58	73	71	40	43	77 <sup>1)</sup>	71	34 <sup>1)</sup>	40	69 <sup>2)</sup>	65 <sup>2)</sup>	25 <sup>1)</sup>	31
 ■ 2x CW 125 ■ 12.5 Silentboard	75.8	73	41.6	44	78 <sup>1)</sup>	74	35.9 <sup>4)</sup>	40	82 <sup>1)</sup>	78	29.6 <sup>4)</sup>	34	75.8 <sup>2)</sup>	73 <sup>2)</sup>	19 <sup>1)</sup>	23
 ■ 2x CW 75 ■ 15 Diamant	69, <sup>3)</sup>	≥ 65 <sup>3)</sup>	54 <sup>3)</sup>	≤ 58 <sup>3)</sup>	73 <sup>3)</sup>	71 <sup>3)</sup>	41 <sup>3)</sup>	43 <sup>3)</sup>	77 <sup>3)</sup>	≥ 71 <sup>3)</sup>	34 <sup>3)</sup>	40 <sup>3)</sup>	69 <sup>3)</sup>	≥ 65 <sup>3)</sup>	25 <sup>3)</sup>	31 <sup>3)</sup>
 ■ 2x CW 75 ■ 2x 12.5 Diamant	70	68	50	52	75	73	37	39	78 <sup>1)</sup>	74	34 <sup>1)</sup>	38	70 <sup>2)</sup>	68 <sup>2)</sup>	25 <sup>1)</sup>	29
 ■ 2x CW 125 ■ 12.5 Silentboard ■ 12.5 Diamant	76.4	74	41.7	44	80 <sup>1)</sup>	76	35.8 <sup>4)</sup>	40	83 <sup>1)</sup>	79	29.1 <sup>4)</sup>	34	76.4 <sup>2)</sup>	74 <sup>2)</sup>	19 <sup>1)</sup>	23

1) Calculation based on the detailed procedure acc. to EN 12354  
 2) Values of basic ceiling and suspended ceiling without flooring  
 3) Values derived from cladding 12.5 mm  
 4) Measured values with with partial screed surface: Margin for L<sub>n,w,R</sub> 4 dB  
 Larger suspension heights / larger thicknesses of the basic ceiling improve sound insulation

## Test configuration


**Free-spanning ceiling D131.de**

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

Demands on the insulation layer (e.g. from Knauf Insulation):  
 Mineral wool insulation layer 60/80 mm acc. to EN 13162;  
 length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa}\cdot\text{s}/\text{m}^2$

**Terms**

- $R_w$  = weighted sound reduction index in dB without sound transmission via flanking building components
- $L_{n,w}$  = Weighted normalized impact sound level in dB without sound transmission via flanking building components
- Index R is used to differentiate between the calculation value and the test stand values.

**Note**

The verification of the new DIN 4109:2016-07 is no longer according to calculation values, but rather with the values obtained on the test rig, 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.

## Permissible furring channel spacings

All dimensions in mm

Board formats	Maximum spacings furring channel <sup>b</sup>		Ball impact safety D131.de CW/UA single profile / CW/UA double profile
	Without fire resistance	With fire resistance	
12.5 Silentboard	400	Axial spacing of furring channel acc. to pages 10, 12, 14, 16, 18	–
12.5 Silentboard + 12.5 Diamant	400		400
12.5	500		–
2x 12.5	500		500
15	500		–
18	–		–
20 / 2x 20	625		500

### Attachment of loads to Knauf free-spanning suspended ceilings

Additional loads, e.g. lighting fixtures, curtain rails and similar can be fixed to Knauf Free-Spanning Ceilings using universal dowel plugs, cavity dowels or spring toggle dowels or Knauf Hartmut Hohlräumdübel cavity dowels.

Additional loads must be considered for determination of the maximum room width. If the entire weight consisting of insulation material and additional load more than 3 kg/m<sup>2</sup> and max. 15 kg/m<sup>2</sup>, the room widths for the Multi-Level Ceiling System (pages 55, 56, 57) are to be used.

**Notes**

Heavy loads must be anchored directly on load-bearing building elements (basic ceiling) or on auxiliary constructions.  
As an alternative separate rating of the maximum room widths is possible on request.

#### With application of the room widths including 3 kg/m<sup>2</sup> extra load (pages 9, 11, 13, 15, 17, 19)

Per load introduction surface of the Knauf Free-Spanning Ceiling the weight of the fastened components may not exceed the following thresholds:

Permissible weight per ceiling surface in kg/m <sup>2</sup>	
Without fire resistance	With fire resistance
3	3

#### With application of the room widths including 15 kg/m<sup>2</sup> extra load (pages 55, 56, 57)

Permissible weight per ceiling surface in kg/m <sup>2</sup>	
Without fire resistance	With fire resistance <sup>1)</sup>
15	6

1) When implemented as a fire resistance ceiling with exposed ceiling (Multi-Level Ceiling System, see page 54) 15 kg/m<sup>2</sup> is the permissible total weight for suspension of the exposed ceiling on the fire resistance ceiling (including insulation layer and attached loads).

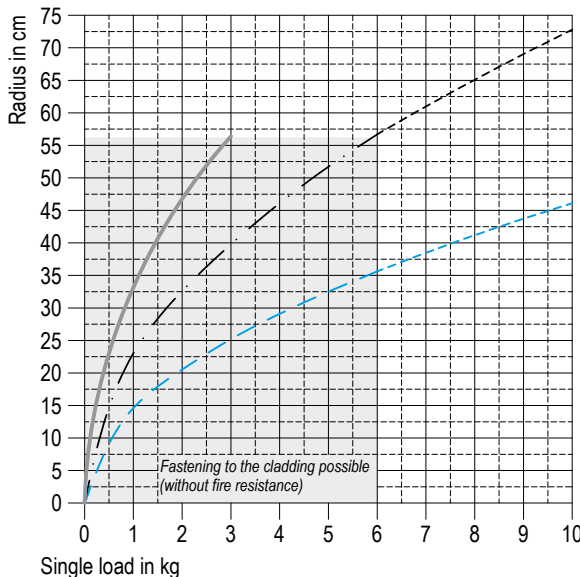
**Furthermore, the following conditions apply:**

For every anchoring point the following weights of components attached to the Free-Spanning Ceilings may not be exceeded:

Anchoring method	Permissible weight per anchoring point in kg	
	Without fire resistance	With fire resistance
Fastening in the cladding	3	0.5
Fastening to the grid	3	3

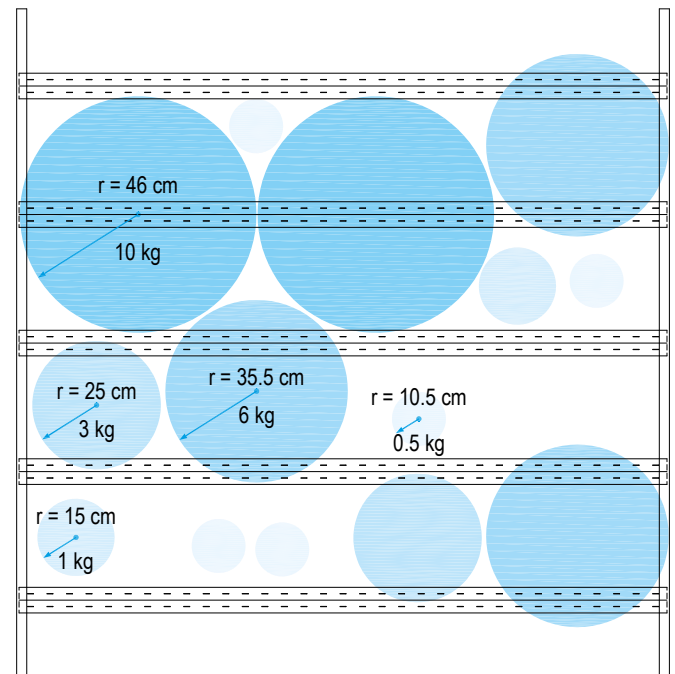
Anchoring method	Permissible weight per anchoring point in kg	
	Without fire resistance	With fire resistance
Fastening in the cladding	6	0.5
Fastening to the grid	10	10

The minimum spacings between the individual attached loads can be taken from the following diagram:



- 3 kg/m<sup>2</sup> additional load (application of the room widths up to 3 kg/m<sup>2</sup>)
- - - 6 kg/m<sup>2</sup> additional load (application of the room widths up to 15 kg/m<sup>2</sup> with fire resistance)
- . - 15 kg/m<sup>2</sup> additional load (application of the room widths up to 15 kg/m<sup>2</sup> with Multi-Level Ceiling System / without fire resistance)

#### Example of an attachment scheme with 15 kg/m<sup>2</sup>



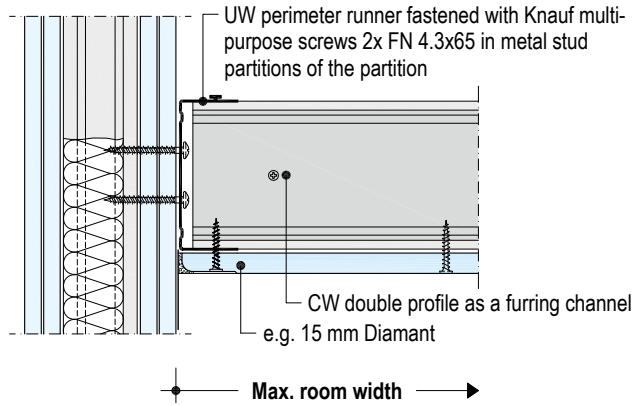
Fastening in the cladding	Fastening to the grid	Note
<p>Knauf Hartmut Hohlräumdübel cavity dowel Screw M5</p>	<p>Knauf multi-purpose screw FN e.g. curtain rail</p>	<p>The attached loads can be introduced with several anchoring elements.</p>

Details

Scale 1:5 | All dimensions in mm

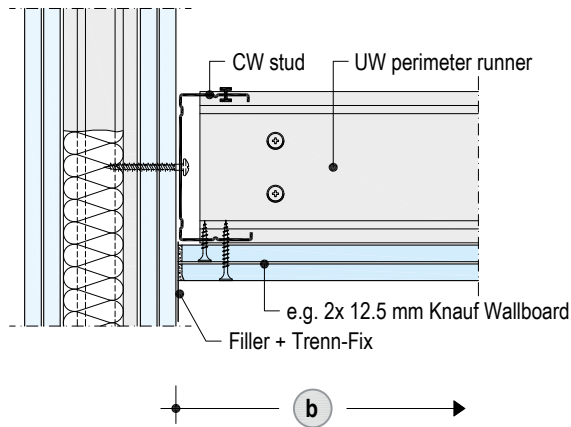
D131.de-D1 Load-bearing connection to lightweight partition

Without fire resistance



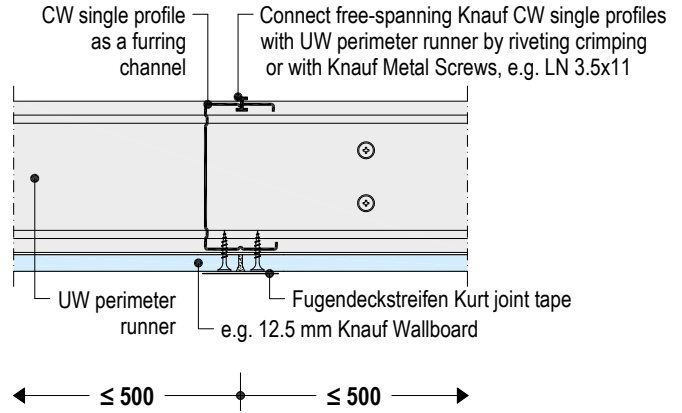
D131.de-A1 Structural connection to lightweight partition

Without fire resistance



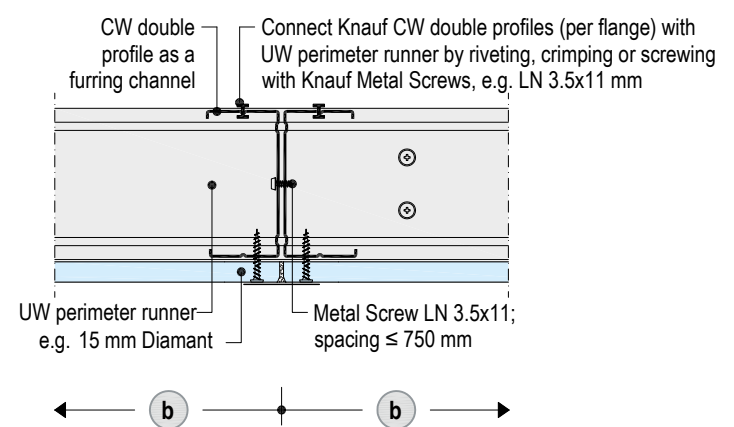
D131.de-C1 Front edge joint - single profile

Without fire resistance



D131.de-C2 Front edge joint - double profile

Without fire resistance

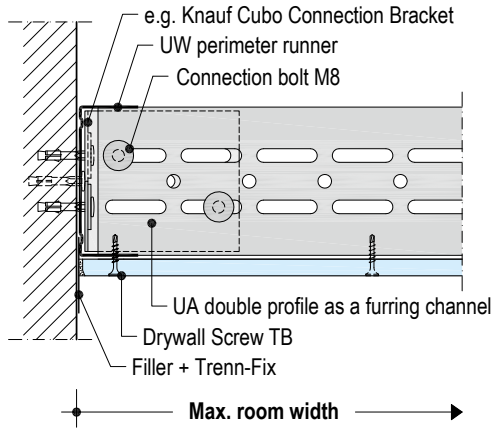




Details

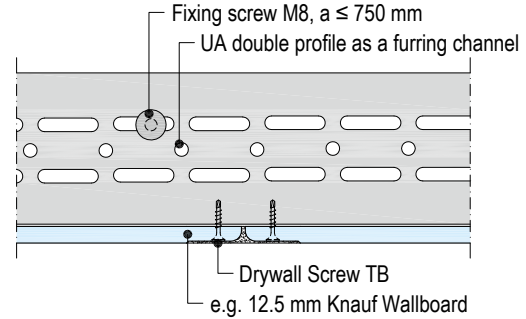
**D131.de-D100 Load-bearing connection to solid wall**

Without fire resistance



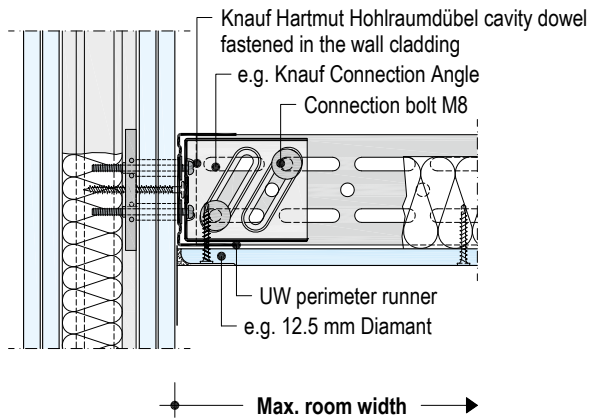
**D131.de-B100 Long edge joint**

Without fire resistance



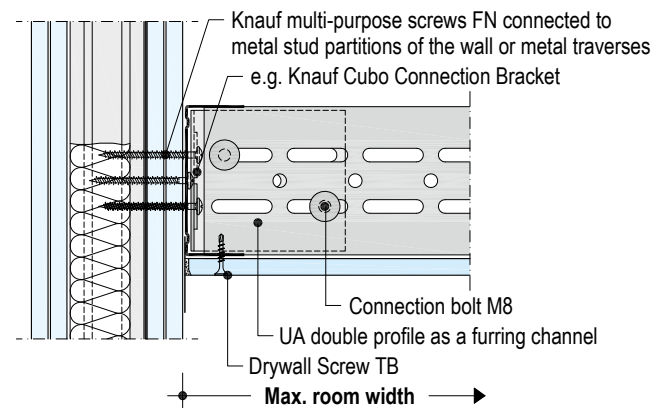
**D131.de-D101 Load-bearing connection to lightweight partition with Knauf Hartmut Hohlräumdübel cavity dowel**

Without fire resistance



**D131.de-D102 Load-bearing connection to lightweight partition with Universalschraube FN multi-purpose screw**

Without fire resistance



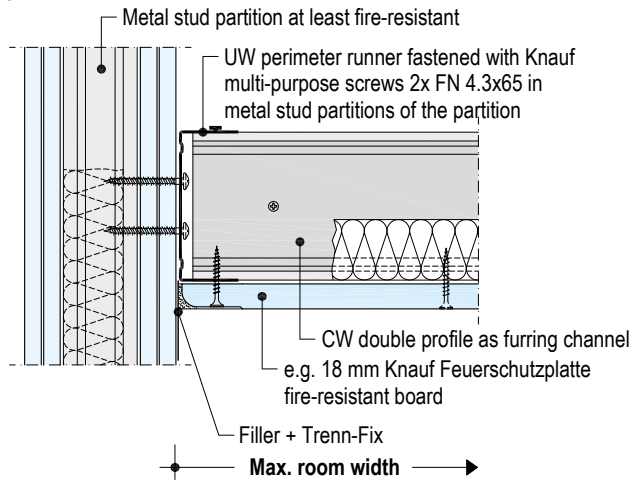
Note

When using Knauf Anschlusswinkel Connection Angle with Universalschraube FN multi-purpose screw or Knauf Hartmut Hohlräumdübel cavity dowels, screw attachment is without a washer in the smallest holes of the Anschlusswinkel connection angle.

Details

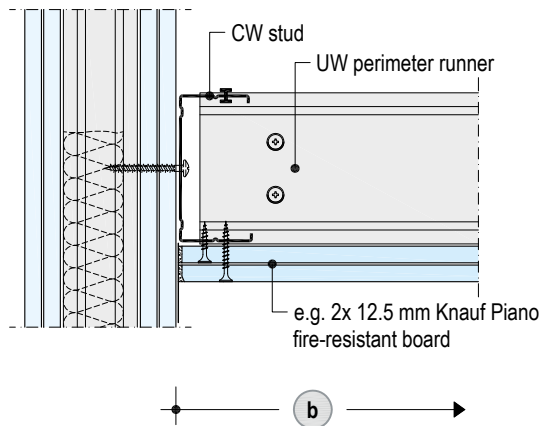
Scale 1:5

D131.de-vuvo-D1 Load-bearing connection to lightweight partition



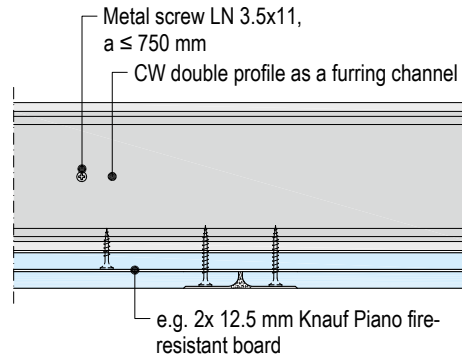
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vu-A1 Structural connection to lightweight partition



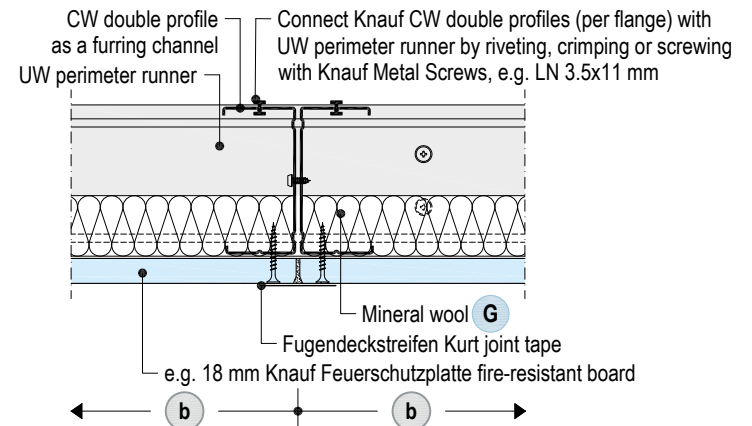
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vu-B1 Long edge joint



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

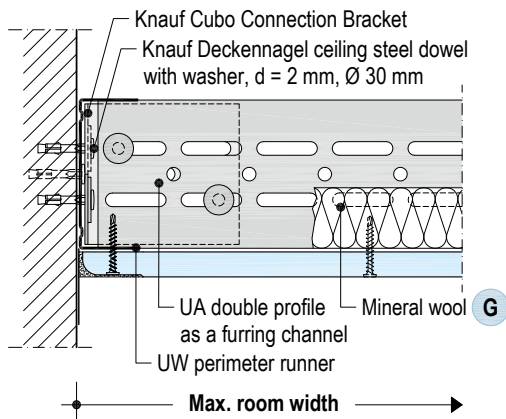
D131.de-vu-C1 Front edge joint



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

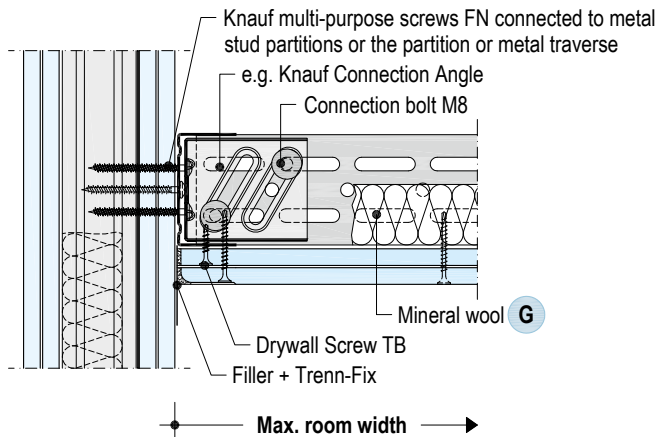
#### Details

#### D131.de-vu-D100 Load-bearing connection to solid wall



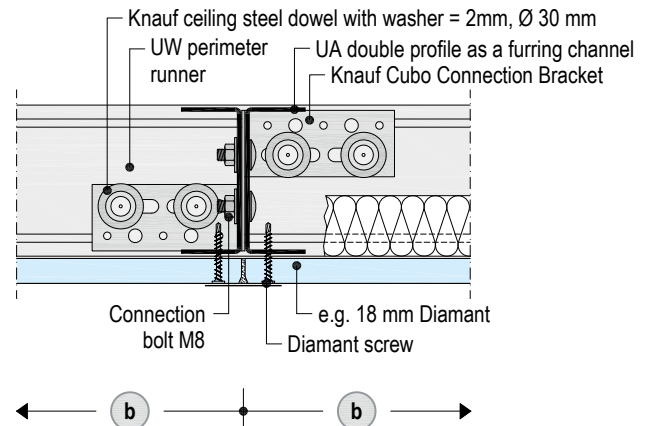
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

#### D131.de-vuvo-D101 Load-bearing connection to lightweight partition with Universalschraube FN multi-purpose screw



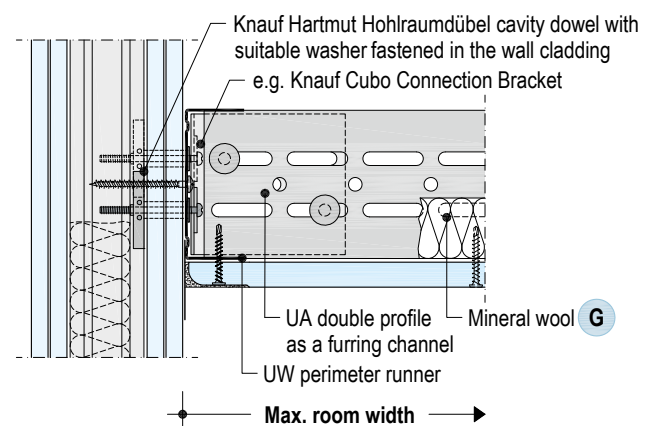
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

#### D131.de-vu-C100 Front edge joint



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

#### D131.de-vu-D102 Load-bearing connection to lightweight partition with Knauf Hartmut Hohlräumdübel cavity dowel



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

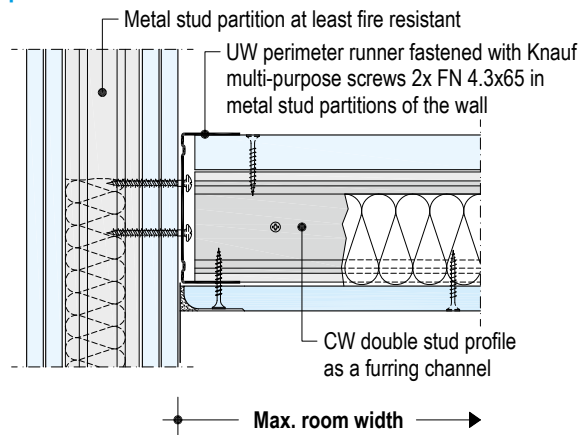
#### Note

When using Knauf Anschlusswinkel Connection Angle with Universalschraube FN multi-purpose screw or Knauf Hartmut Hohlräumdübel cavity dowels, screw attachment is without a washer in the smallest holes of the Anschlusswinkel connection angle.

Details

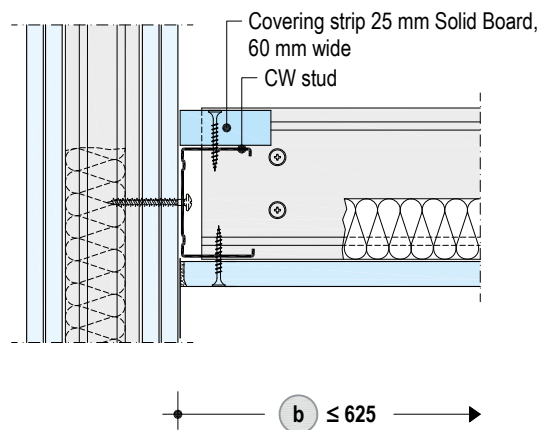
Scale 1:5 | All dimensions in mm

D131.de-vuvo-D1 Load-bearing connection to lightweight partition



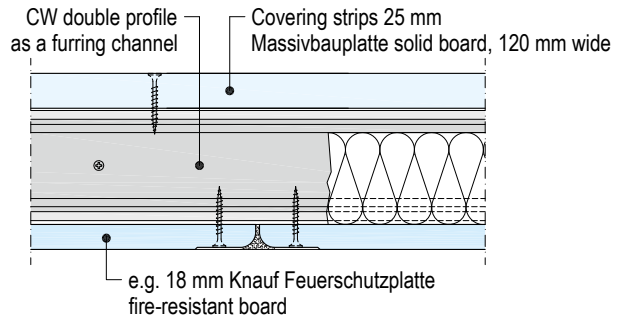
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vuvo-A1 Structural connection to lightweight partition

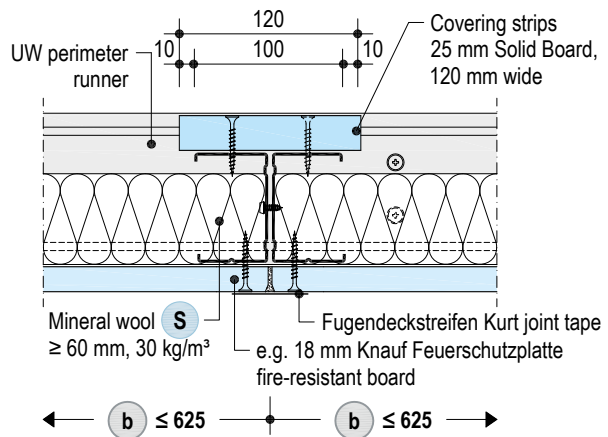


**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vuvo-B1 Long edge joint

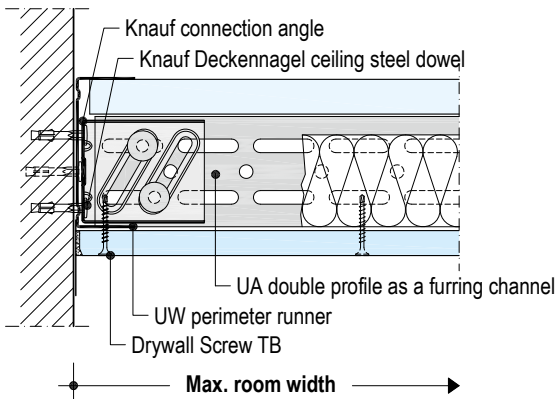


D131.de-vuvo-C1 Front edge joint



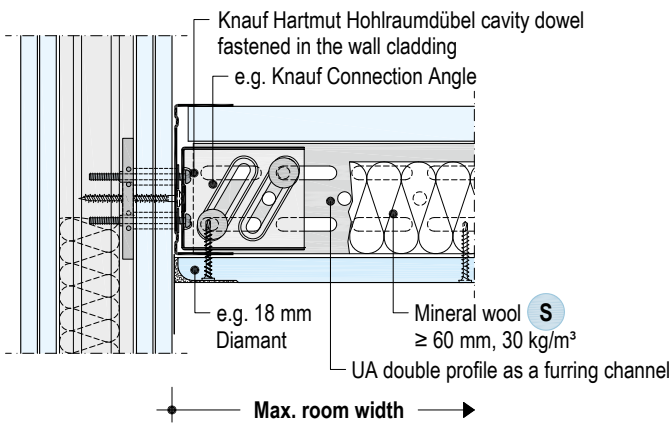
Details

D131.de-vuvo-D100 Load-bearing connection to solid wall



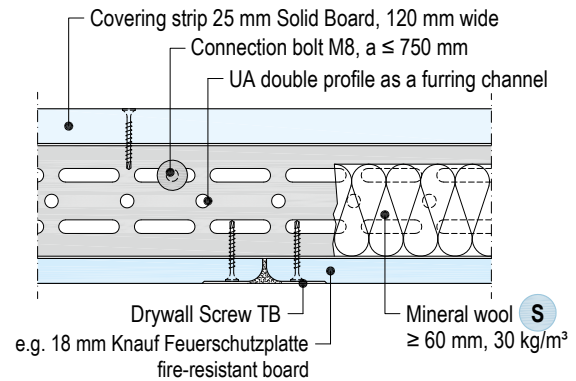
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vuvo-D101 Load-bearing connection to lightweight partition with Knauf Hartmut Hohlraumdübel cavity dowel



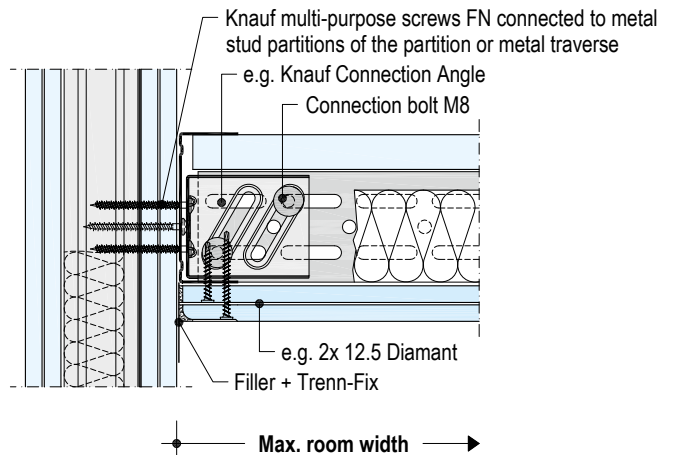
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vuvo-B100 Long edge joint



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

D131.de-vuvo-D102 Load-bearing connection to lightweight partition with Universalschraube FN multi-purpose screw



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

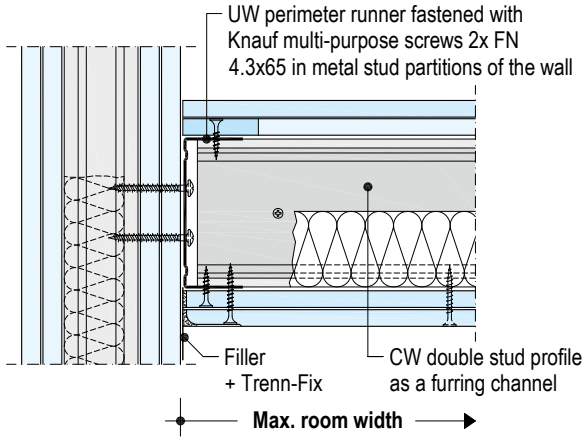
Note

When using Knauf Anschlusswinkel Connection Angle with Universalschraube FN multi-purpose screw or Knauf Hartmut Hohlraumdübel cavity dowels, screw attachment is without a washer in the smallest holes of the Anschlusswinkel connection angle.

Details

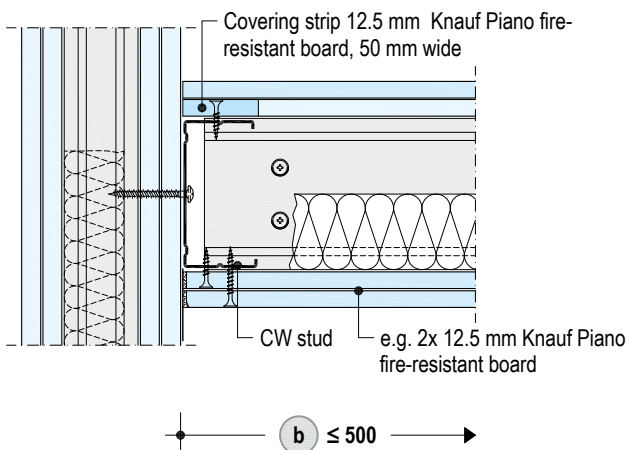
Scale 1:5 | All dimensions in mm

D131.de-vuvo-D3 Load-bearing connection to lightweight partition



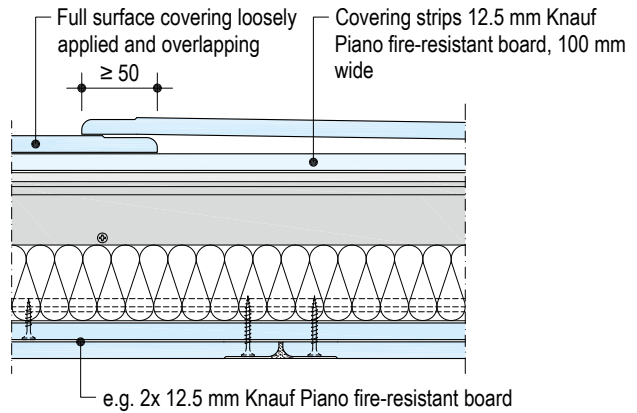
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vuvo-A3 Structural connection to lightweight partition

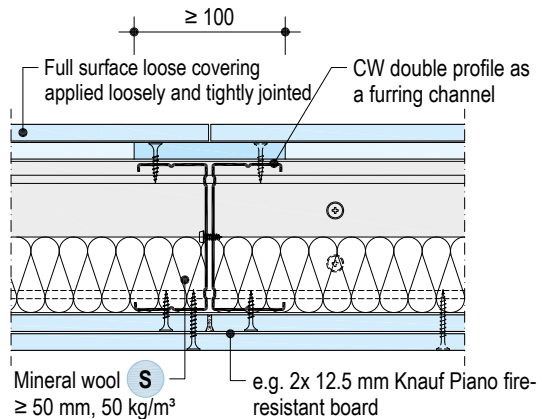


**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-vuvo-B3 Long edge joint



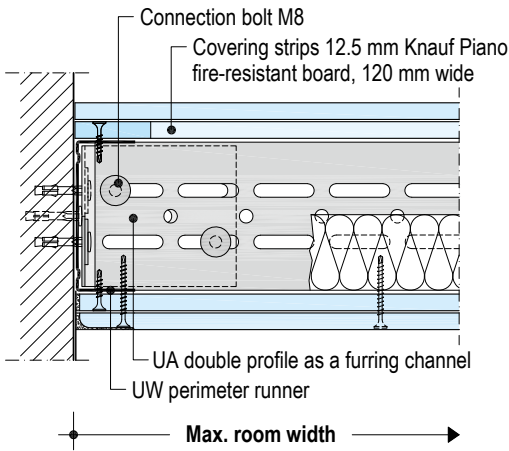
D131.de-vuvo-C3 Front edge joint



Scale 1:5 | All dimensions in mm

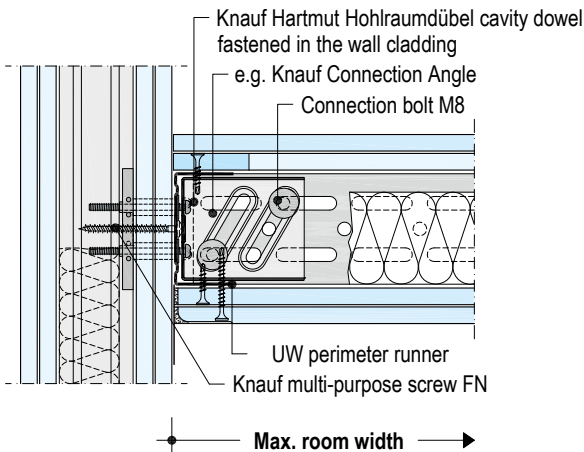
#### Details

#### D131.de-vuvo-D200 Load-bearing connection to solid wall



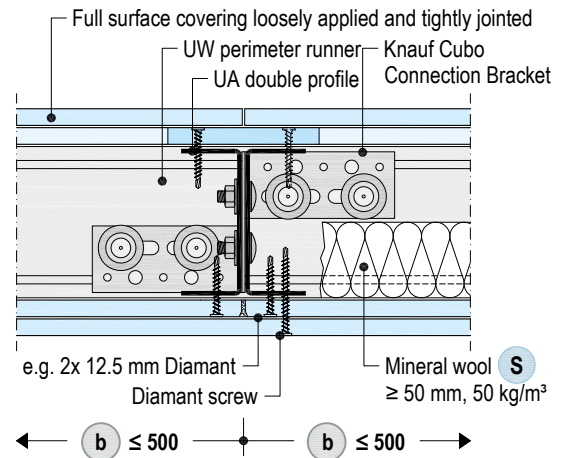
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

#### D131.de-vuvo-D201 Load-bearing connection to lightweight partition with Knauf Hartmut Hohlraumdübel cavity dowel



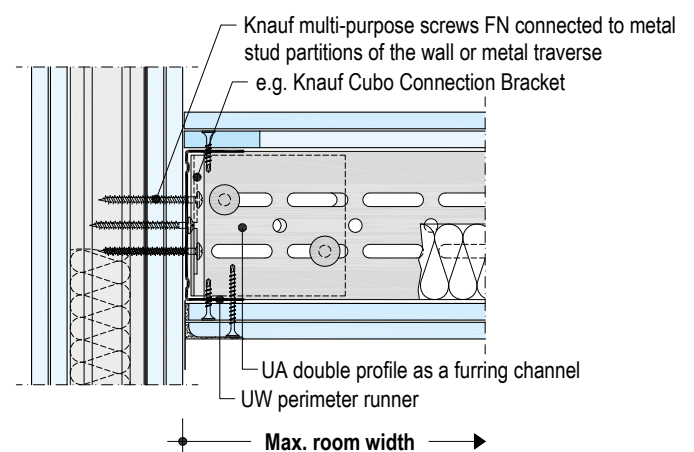
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

#### D131.de-vuvo-C200 Front edge joint



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

#### D131.de-vuvo-D203 Load-bearing connection to lightweight partition with Universalschraube FN multi-purpose screw



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

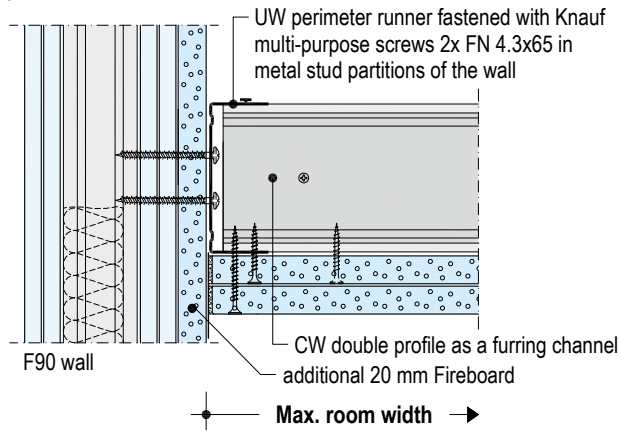
#### Note

When using Knauf Anschlusswinkel Connection Angle with Universalschraube FN multi-purpose screw or Knauf Hartmut Hohlraumdübel cavity dowels, screw attachment is without a washer in the smallest holes of the Anschlusswinkel Connection Angle.

Details

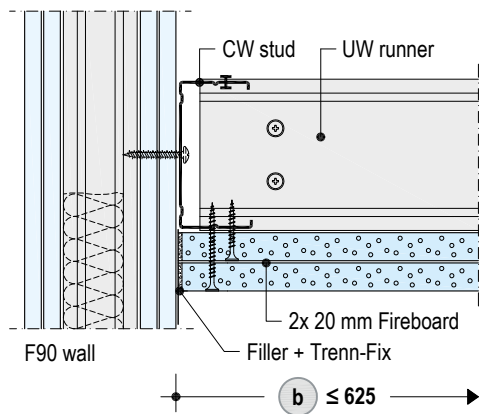
Scale 1:5 | All dimensions in mm

K219.de-vuvo-D3 Load-bearing connection to lightweight partition



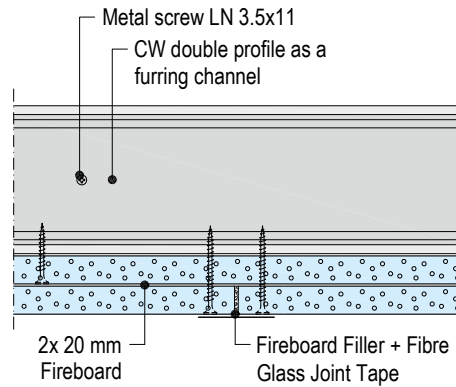
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

K219.de-vu-A3 Structural connection to lightweight partition

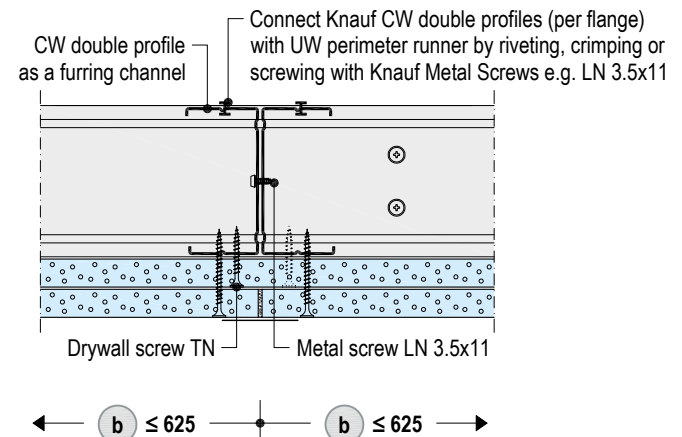


**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

K219.de-vu-B3 Front edge joint



K219.de-vu-C3 Long edge joint

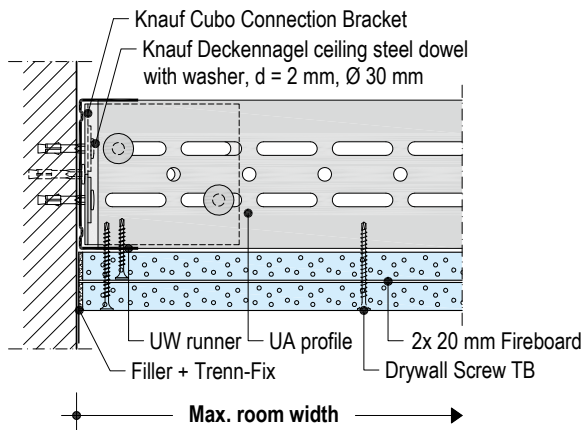




Scale 1:5 | All dimensions in mm

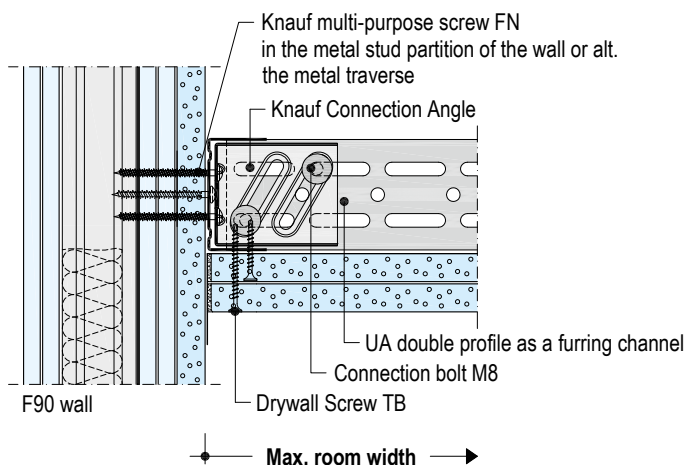
#### Details

#### K219.de-vu-D100 Load-bearing connection to solid wall



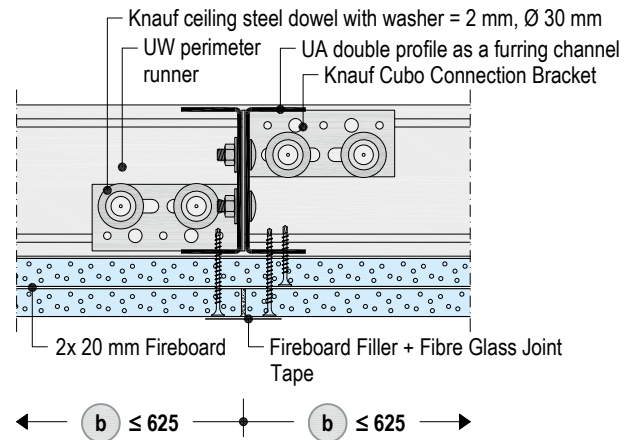
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

#### K219.de-vu-D101 Load-bearing connection to lightweight partition with multi-purpose screw FN



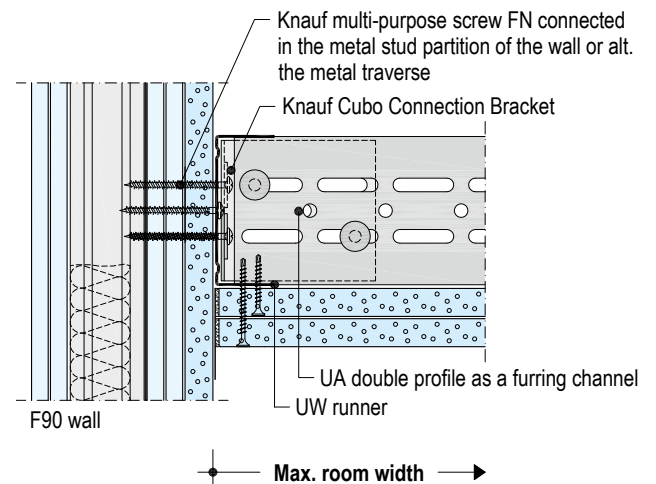
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

#### K219.de-vu-C100 Front edge joint



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

#### K219.de-vu-D102 Load-bearing connection to lightweight partition with multi-purpose screw FN



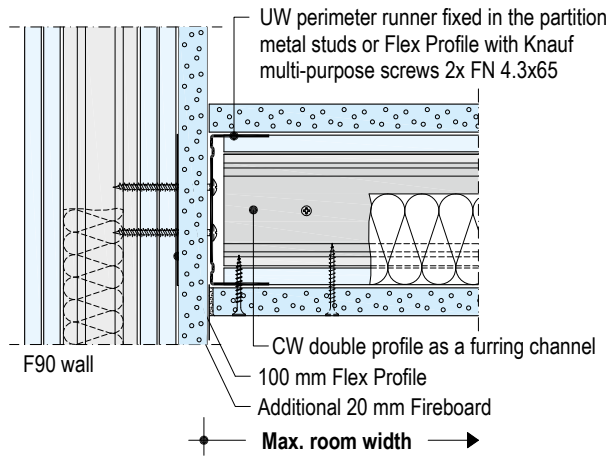
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

#### Note

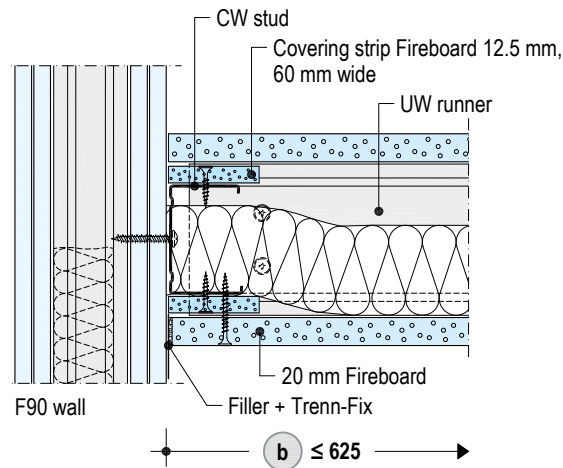
When using Knauf Anschlusswinkel Connection Angle with Universalschraube FN multi-purpose screw or Knauf Hartmut Hohlraumdübel cavity dowels, screw attachment is without a washer in the smallest holes of the Anschlusswinkel Connection Angle.

Details

K219.de-vuvo-D3 Load-bearing connection to lightweight partition



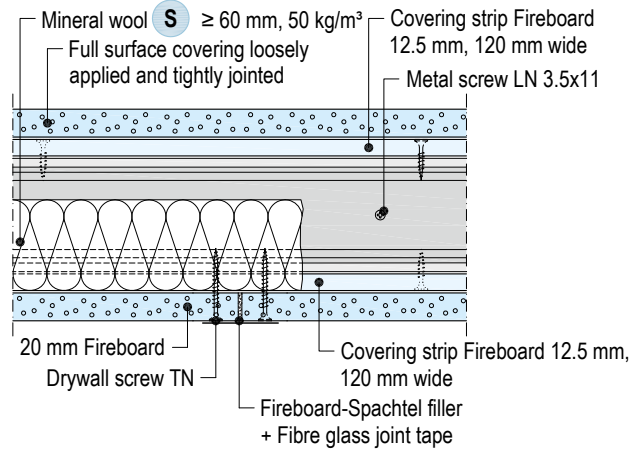
K219.de-vuvo-A3 Structural connection to lightweight partition



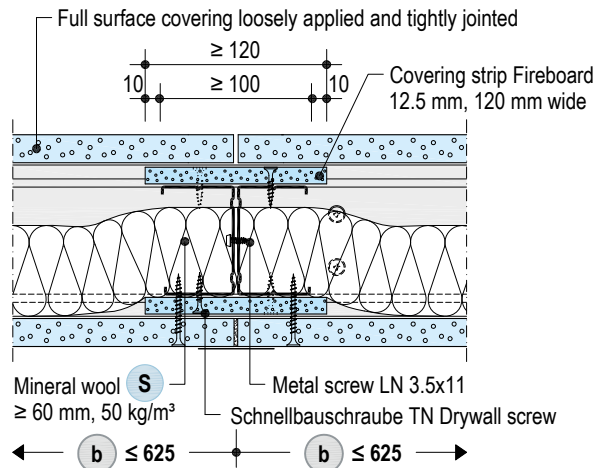
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

Scale 1:5 | All dimensions in mm

K219.de-vuvo-B3 Front edge joint



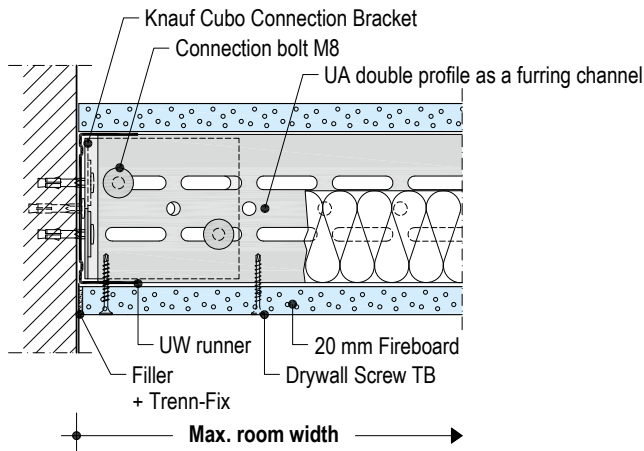
K219.de-vuvo-C3 Long edge joint



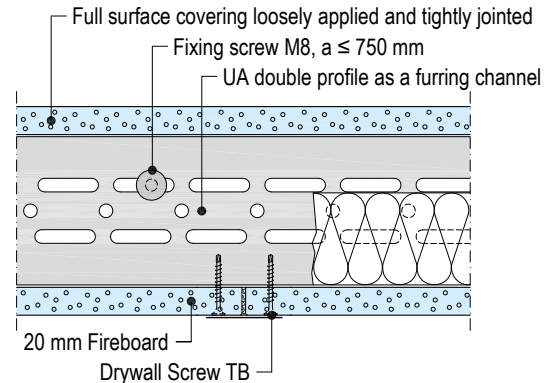
**Note** When applied with UA furring channels it is possible to omit the covering strips on the upper and lower flanges of the double profiles.

#### Details

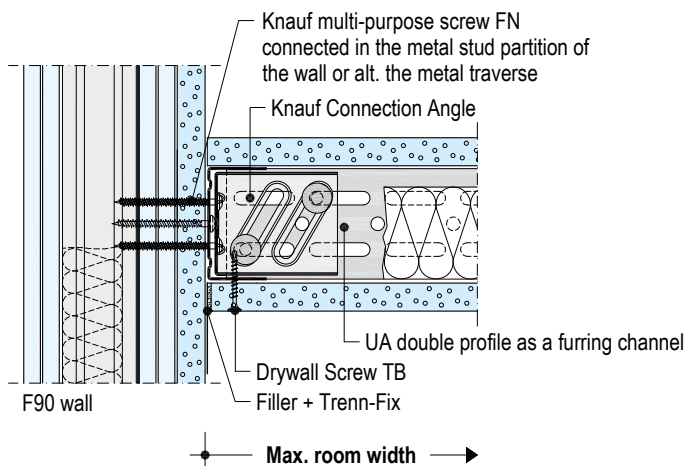
#### K219.de-vuvo-D100 Load-bearing connection to solid wall



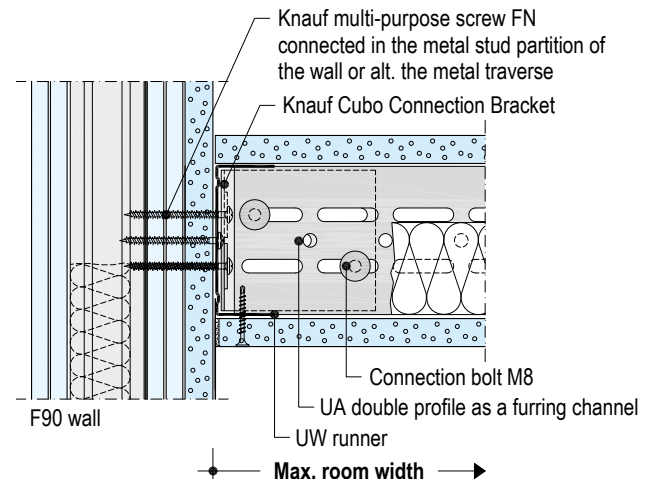
#### K219.de-vuvo-B100 Front edge joint



#### K219.de-vuvo-D101 Load-bearing connection to lightweight partition with Universalschraube FN multi-purpose screw



#### K219.de-vuvo-D102 Load-bearing connection to lightweight partition with Universalschraube FN multi-purpose screw



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

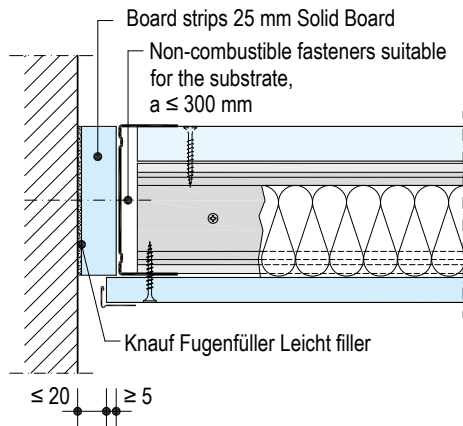
#### Notes

When using Knauf Anschlusswinkel Connection Angle with Universalschraube FN multi-purpose screw or Knauf Hartmut Hohlräumdübel cavity dowels, screw attachment is without a washer in the smallest holes of the Anschlusswinkel Connection Angle.  
When applied with UA furring channels it is possible to omit the covering strips on the upper and lower flanges of the double profiles.

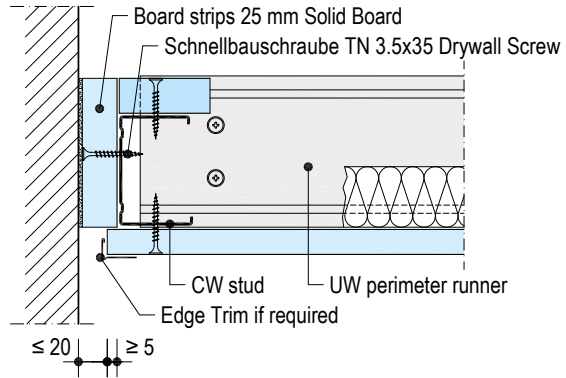
Details

Scale 1:5 | All dimensions in mm

D131.de-SO-D1 Connection to solid wall with shadow gap

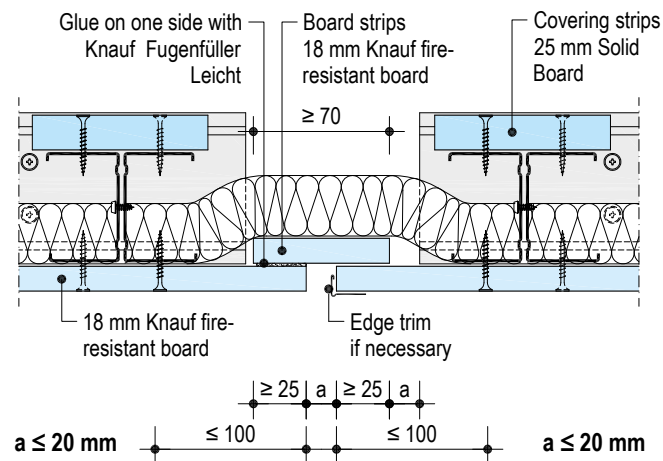


D131.de-SO-A1 Connection to solid wall with shadow gap



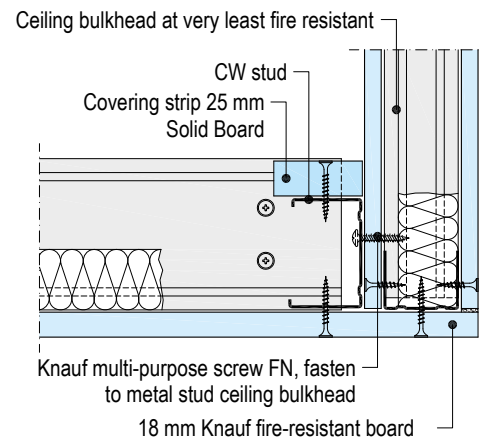
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

D131.de-SO-C3 Movement joint



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

D131.de-SO-A2 Ceiling bulkhead

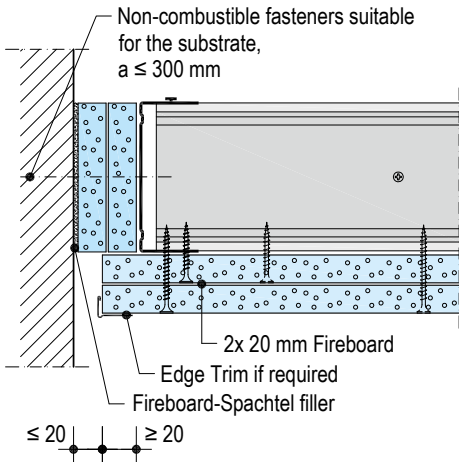


**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

Scale 1:5 | All dimensions in mm

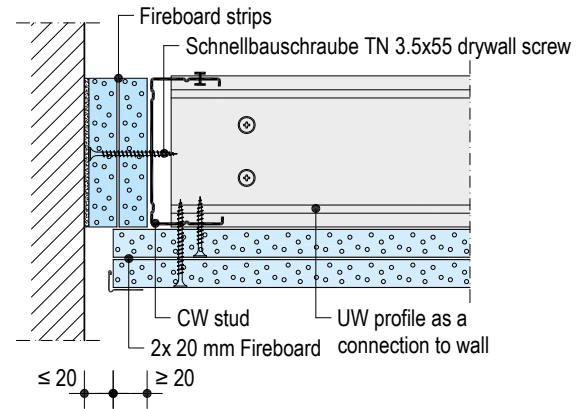
Details

**K219.de-vu-D4 Connection to solid wall with shadow gap**



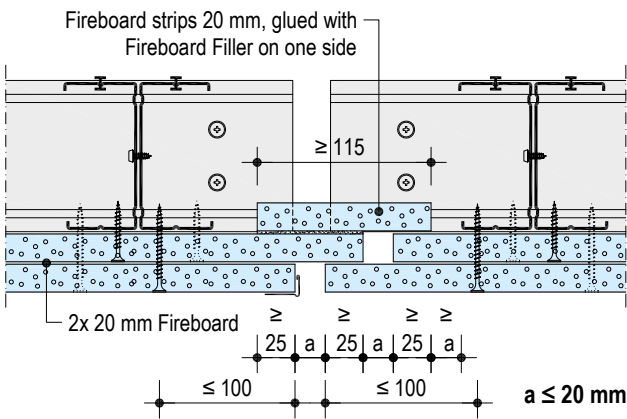
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

**K219.de-vu-A4 Connection to solid wall with shadow gap**



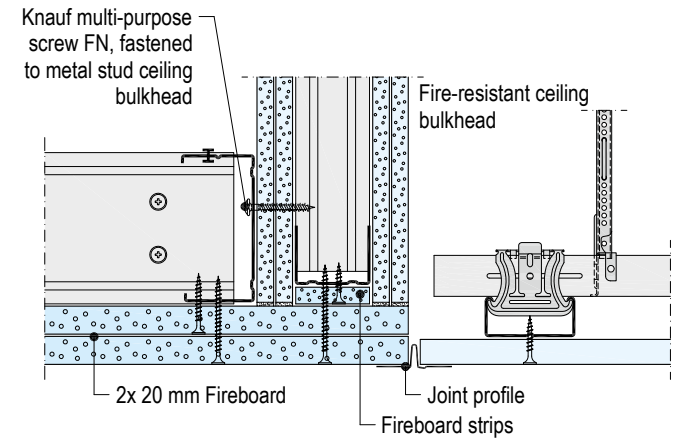
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

**K219.de-vu-C4 Movement joint**



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

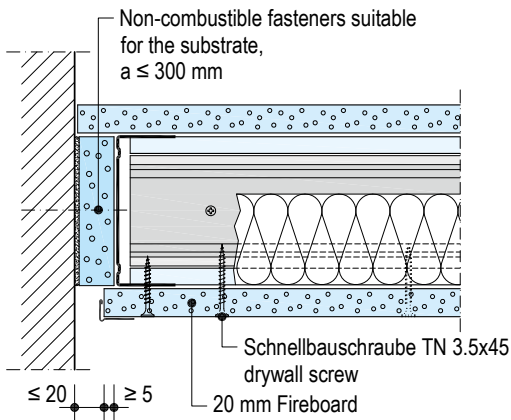
**K219.de-vu-A5 Ceiling bulkhead**



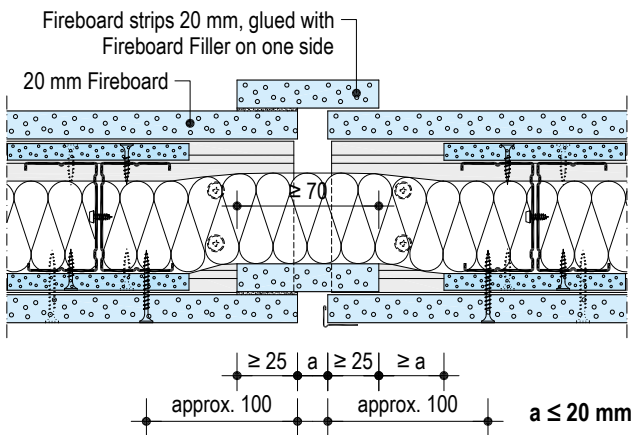
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

Details

K219.de-vuvo-D4 Connection to wall with shadow gap



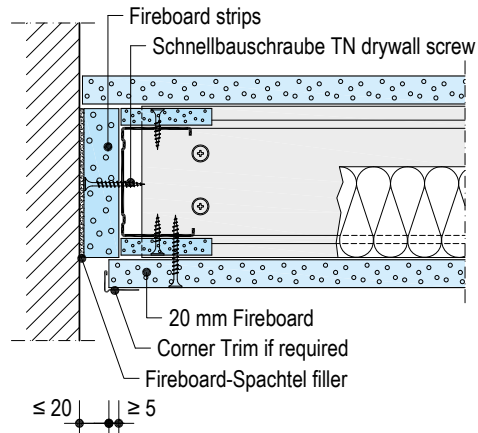
K219.de-vuvo-C4 Movement joint



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

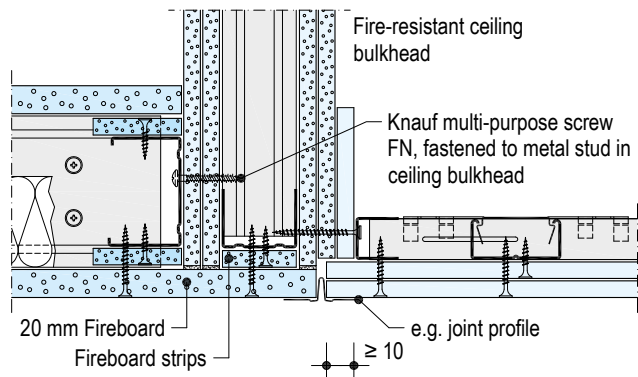
Scale 1:5 | All dimensions in mm

K219.de-vuvo-A4 Connection to wall with shadow gap



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

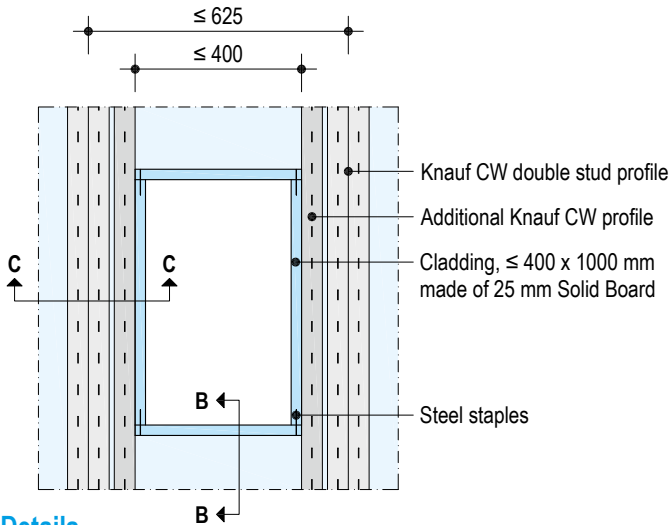
K219.de-vuvo-A5 Ceiling bulkhead



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

**Fire protection encasement for built-in lighting**

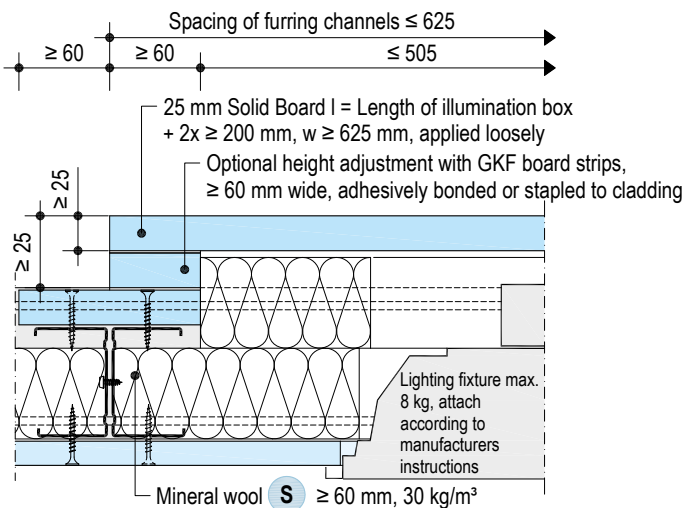
Fire resistance F30 solely from below and from above



**Details**

**D131.de-SO-C11 Lateral section of built-in lighting**

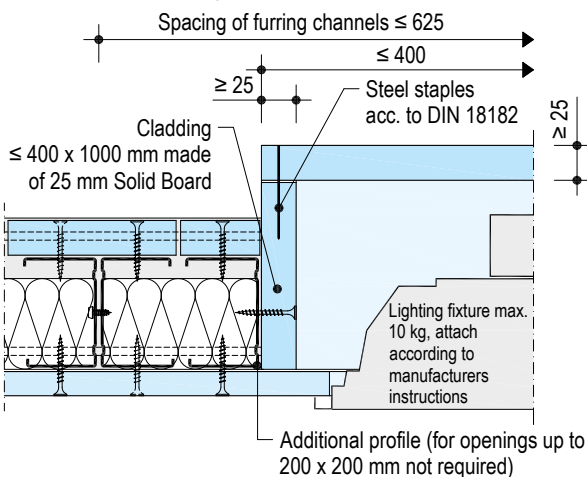
Fire resistance F30 solely from below and from above



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

**D131.de-SO-C5 Lateral section of built-in lighting**

Fire resistance F30 solely from below and from above



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

**Front side stapling of the cladding**

Cladding mm	Staple lengths mm	Maximum spacings mm
20	50	100
25	64	

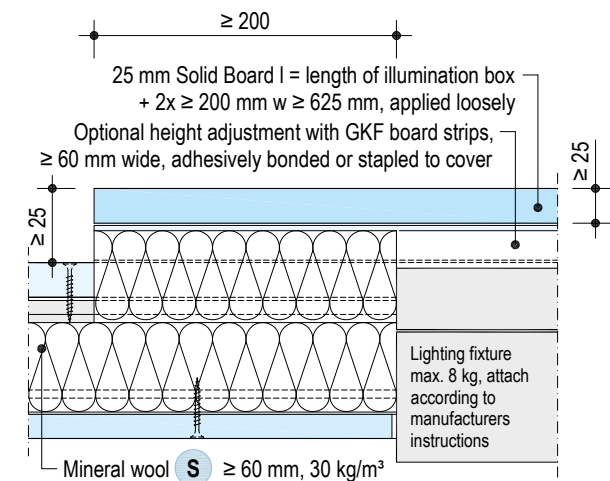
Stapling of the front side cladding with steel staples acc. to DIN 18182-2 or EN 14566 (e.g. Haubold or Poppers-Senco).

Scheme drawings | All dimensions in mm

Scale 1:5 | All dimensions in mm

**D131.de-SO-B11 Longitudinal section of built-in lighting**

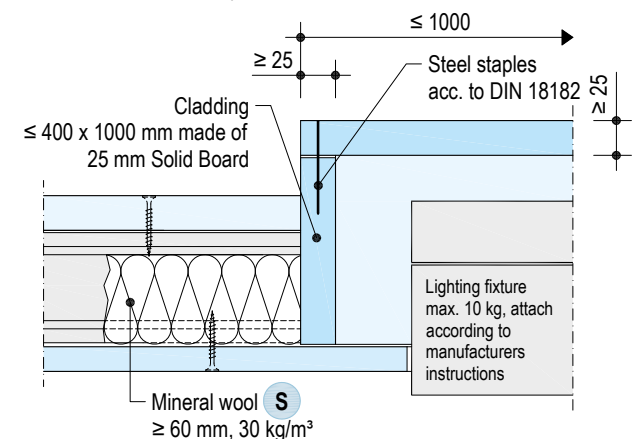
Fire resistance F30 solely from below and from above



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

**D131.de-SO-B5 Longitudinal section of built-in lighting**

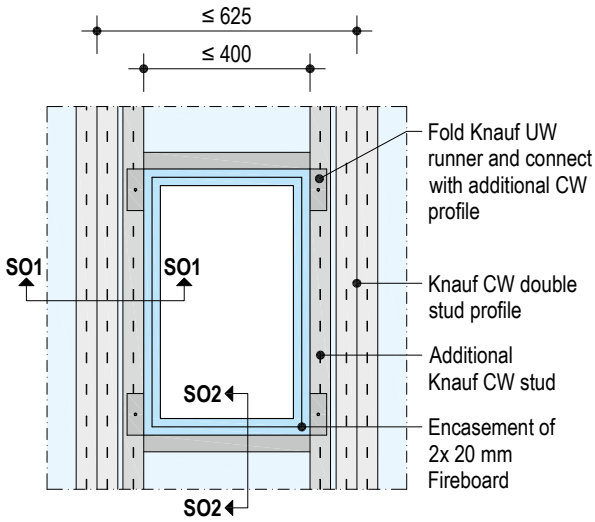
Fire resistance F30 solely from below and from above



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

Fire protection encasement for built-in lighting

Fire resistance F90 solely from below

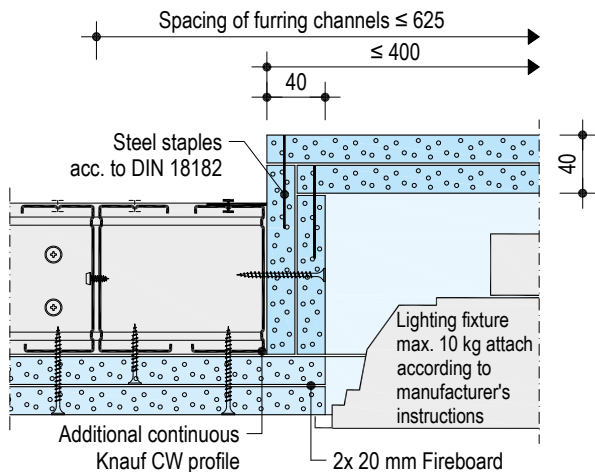


■ Front side stapling of the cladding, see table on page 39

Details

K219.de-vu-SO1 Lateral section of built-in lighting

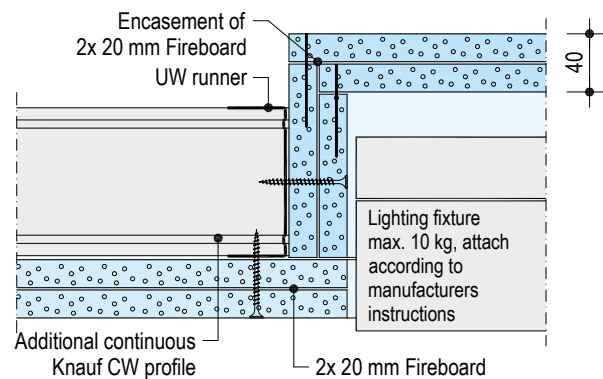
Fire resistance F90 solely from below



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

K219.de-vu-SO2 Longitudinal section of built-in lighting

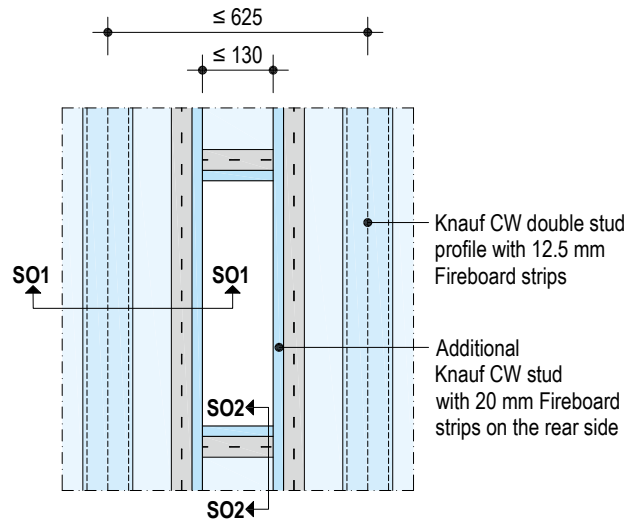
Fire resistance F90 solely from below



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

Scheme drawings | All dimensions in mm

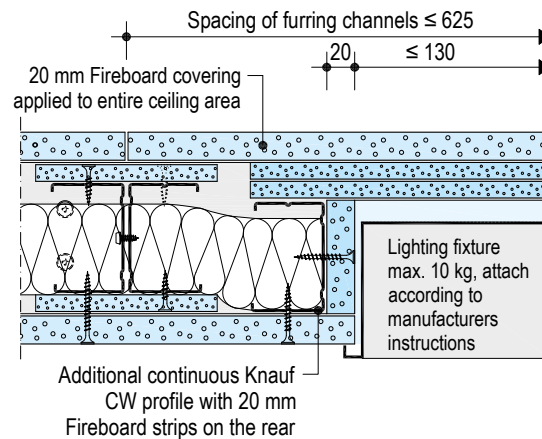
Fire resistance F90 solely from below and from above



Scale 1:5 | All dimensions in mm

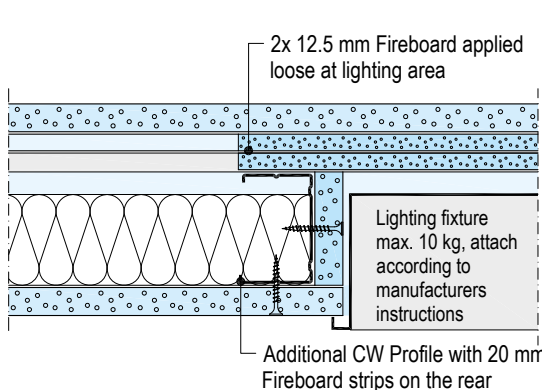
K219.de-vuvo-SO1 Lateral section of built-in lighting

Fire resistance F90 solely from below and from above



K219.de-vuvo-SO2 Longitudinal section of built-in lighting

Fire resistance F90 solely from below and from above

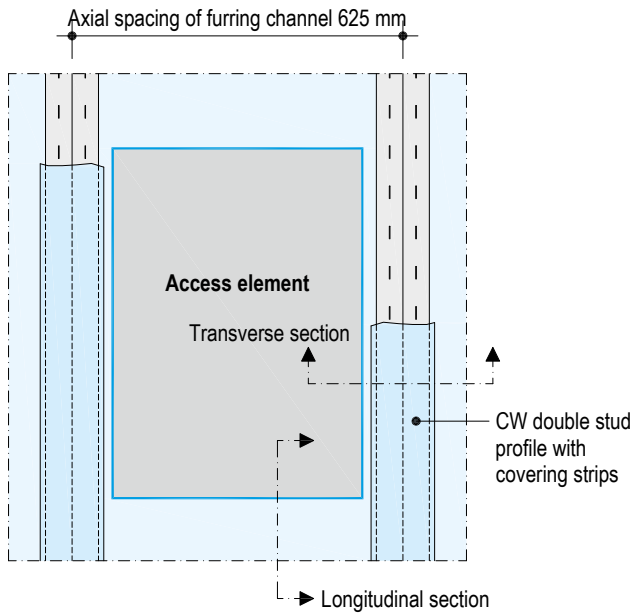




**Knauf access panel SYSTEM D131 BS 30**

Scheme drawing

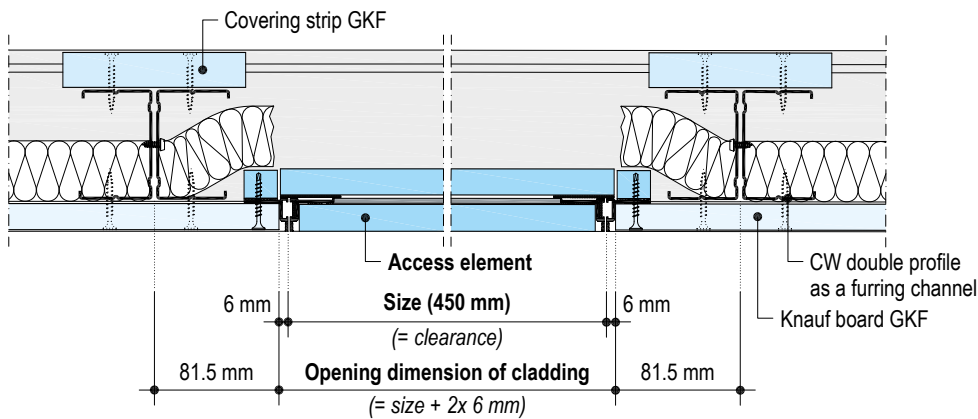
**Top view**



**Cross-section**

■ Solely from below and from above

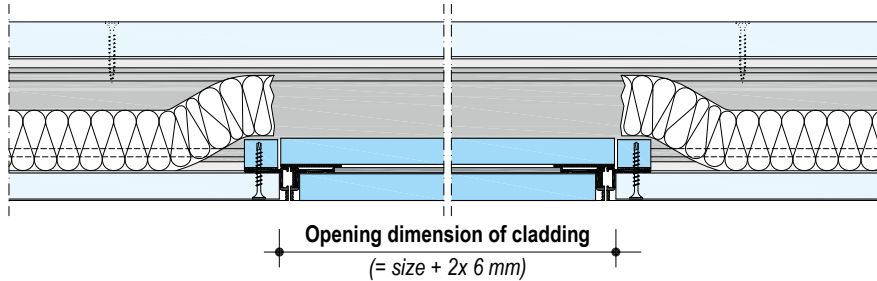
■ Solely from below



**Longitudinal section**

■ Solely from below and from above

■ Solely from below



**Notes**

Cladding thickness, dimensions, available options and further information, see Product Data Sheet E131.de.  
Observe the enclosed installation instructions of the access panels.



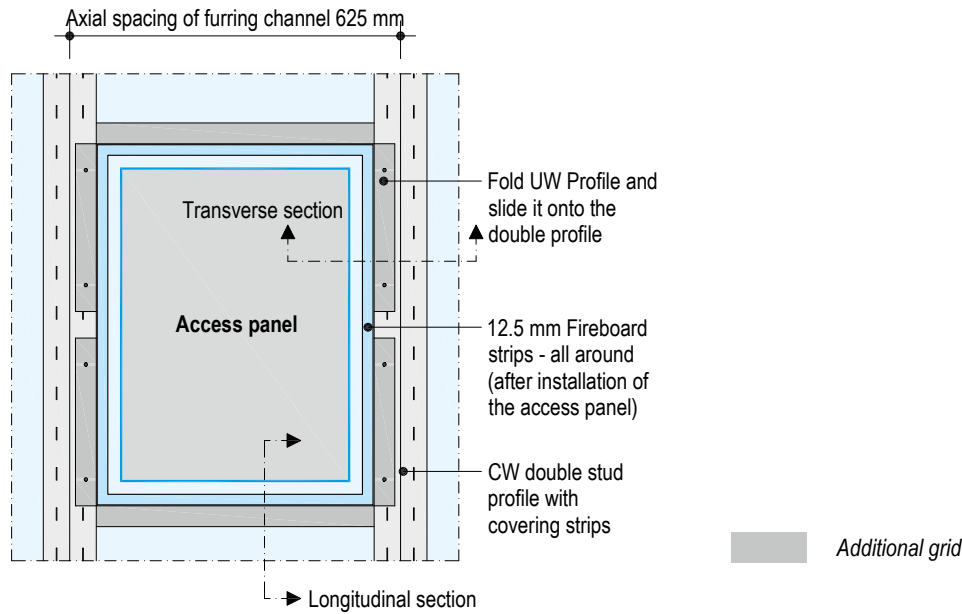
**Extension of the fire resistance Certificate of Usability**

- Installation of access panel seals
- Prior consultation in acc. to page 5 is recommended.

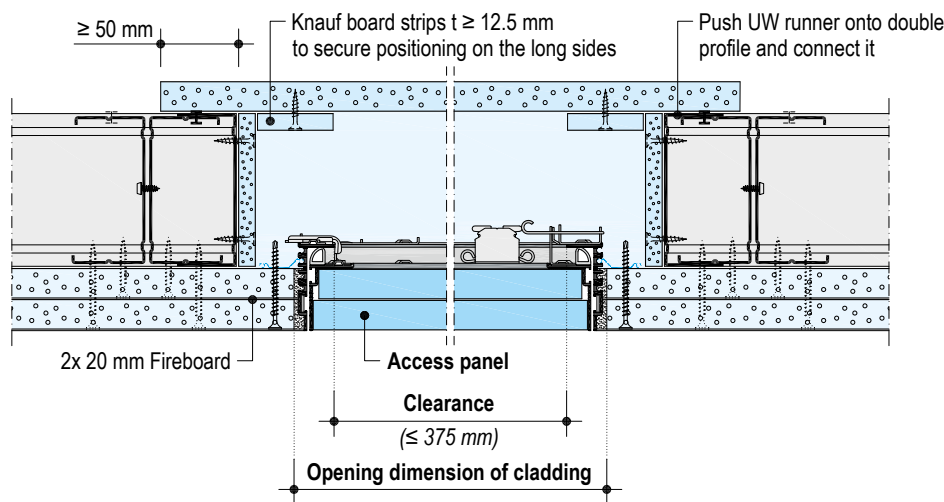
Knauf access panel SYSTEM K219 BS90 solely from below

Scheme drawing

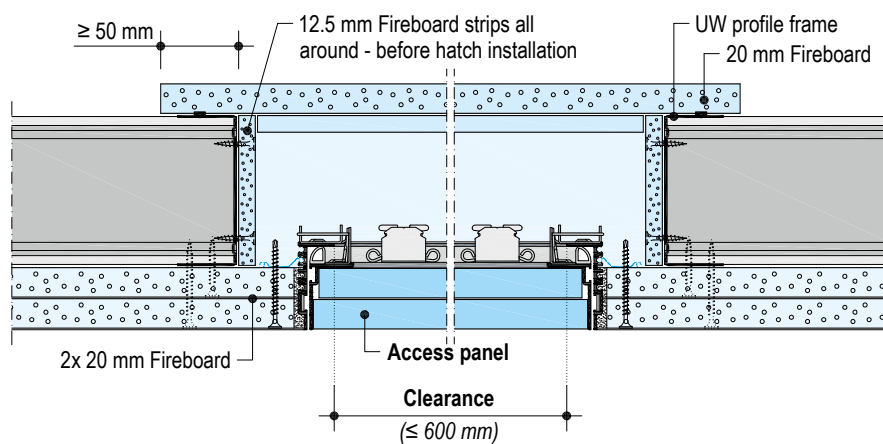
Top view



Cross-section



Longitudinal section



Notes

For further information see Product Data Sheet E219.de  
Observe the enclosed installation instructions of the access panels.



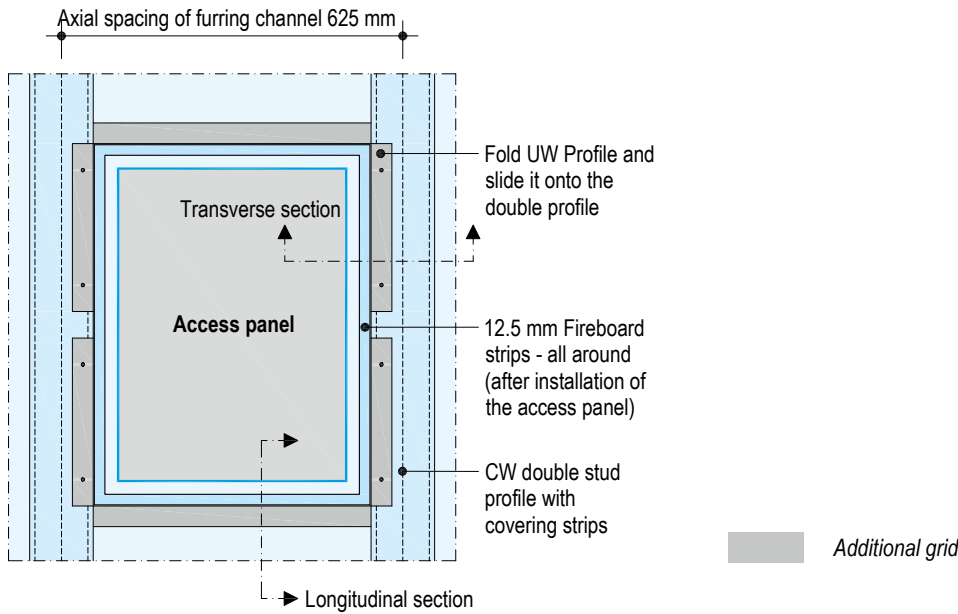
Extension of the fire resistance Certificate of Usability

- Installation of access panel seals
- Prior consultation in acc. to page 5 is recommended.

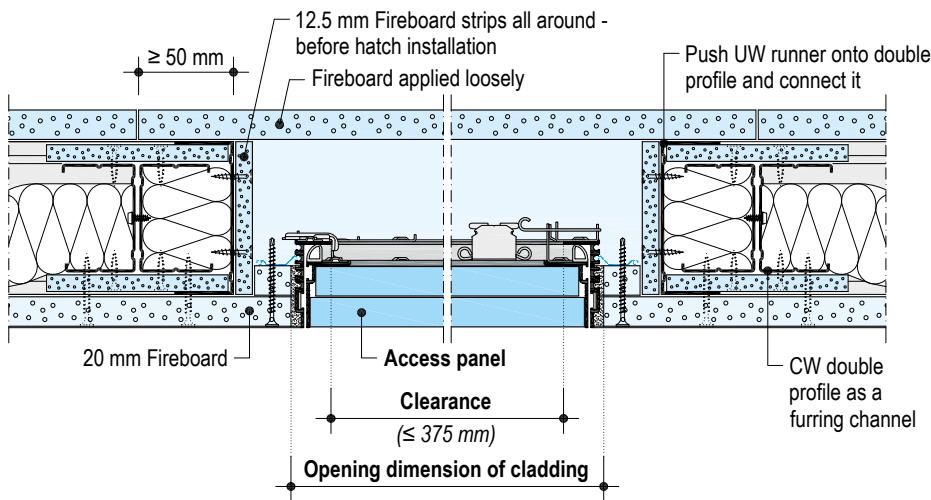
**Knauf access panel SYSTEM K219 BS90 solely from below and from above**

Scheme drawing

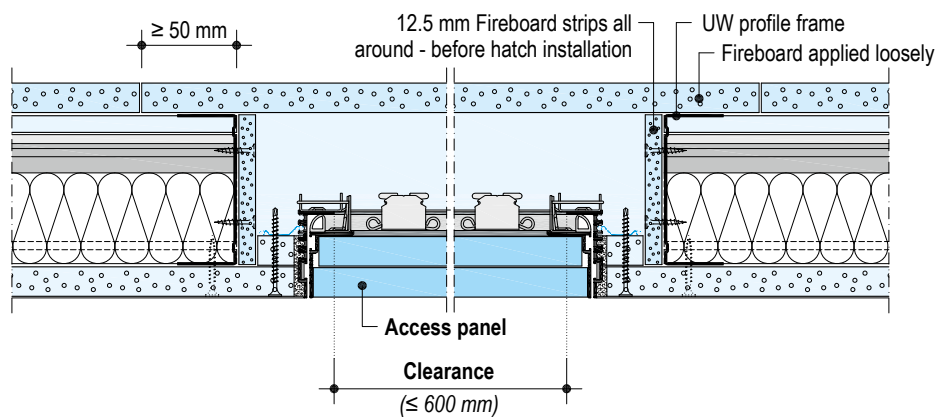
**Top view**



**Cross-section**



**Longitudinal section**



**Notes**

For further information see Product Data Sheet E219.de  
Observe the enclosed installation instructions of the access panels.



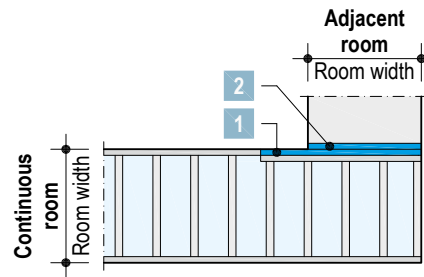
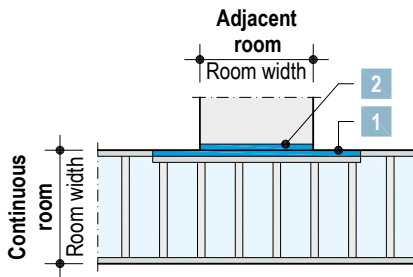
**Extension of the fire resistance Certificate of Usability**

- Installation of access panel seals
- Prior consultation in acc. to page 5 is recommended.

### Dimensioning of supporting profiles

Top views | Scheme drawings

#### T connection and L connection



#### Simplified procedure

##### T connection and L connection

Without determination of weight - necessary profile size of the Knauf UA supporting profile **1** + **2** for room widths up to 3.50 m

Continuous room Max. room width (m) <sup>1)</sup>	Adjacent room Max. room width (m) <sup>1)</sup>	Profile size
2.00	2.00	2x UA 75
2.50	<b>2.50</b>	2x UA 100
<b>3.00</b>	3.00	<b>2x UA 125</b>
3.50	3.50	2x UA 150

1) Use the appropriate table for the respective system for determination of the max. room width, see pages 8 to 13 and pages 16 to 19.

#### Example for the determination of the necessary profile size of the Knauf UA supporting profiles:

D131.de F30 solely from below and from above

Assuming:

- Continuous room: Knauf double profile CW 75 with a max. room width **3.00 m** (see page 13)
- Adjacent room: Knauf double profile CW 50 with a max. room width **2.25 m** (see page 13)

Necessary profile size of the Knauf UA supporting profile **1** + **2** :

Room width of continuous room **3.00 m** → table value **3.00 m** (from the table above) → **2x UA 125**  
 Room width of continuous room **2.25 m** → table value **2.50 m** (from the table above) → **2x UA 100** → **≥ 2x UA 125** (higher profile decisive)

→ resulting in the profile size of 2x UA 125 for the Knauf UA supporting profile **1** and **2**

#### T connection and L connection possible with system:

D131.de Knauf Free-Spanning Ceiling without fire resistance

Note



D131.de Knauf Free-Spanning Ceiling fire resistance F30 solely from below  
 D131.de Knauf Free-Spanning Ceiling fire resistance F30 solely from below and from above  
 K219.de Knauf Free-Spanning Fireboard Ceiling A1 fire resistance F90 solely from below  
 K219.de Knauf Free-Spanning Fireboard Ceiling A1 fire resistance F90 solely from below and from above

Note

"Multi-Level Ceiling System" not considered



#### Extension of the fire resistance Certificate of Usability

- Application of T connection and L connection with fire resistance. Prior consultation in acc. to page 5 is recommended.

**Exact procedure**
**T connection and L connection**
**1. Self-weight of the ceiling** The self-weight of the ceiling is used as the basis for the determination of the required profile size of the UA supporting profiles

- The continuous room is decisive for determination of the weight


**Cladding weight**

**Grid weight kg/m<sup>2</sup>**

**any additional load kg/m<sup>2</sup>**

Type	kg/m <sup>3</sup>	Knauf Profile	Single profile Axial spacing 500 mm	Double profile Axial spacing		
				400 mm	500 mm	625 mm
Assumed load for structural rating						
Wallboard	750	CW 50	1.50	3.75	3.00	2.40
		UA 50	3.80	9.50	7.60	6.08
Knauf Piano fire-resistant board, Knauf fire-resistant board, Massivbauplatte Solid Board	<b>880</b>	CW 75	1.75	4.35	3.50	2.80
		UA 75	4.60	11.50	9.20	7.36
		CW 100	2.00	4.95	4.00	3.20
		UA 100	5.40	13.50	10.80	8.64
Silentboard	1472	CW 125	2.25	5.55	4.50	<b>3.60</b>
		UA 125	6.10	15.25	12.20	9.76
Fireboard	820	CW 150	2.50	6.15	5.00	4.00
Diamant	1040	UA 150	7.00	17.50	14.00	11.20

e.g.

- Insulation material
- Lighting fixtures
- Multi-Level Ceiling System (15 kg/m<sup>2</sup>)
- ...

**Calculation example:** D131.de F30 solely from below and from above

+	Knauf fire-resistant board 18 mm	0.018 m x 880 kg/m <sup>3</sup>	=	15.84 kg/m <sup>2</sup>
+	Covering strip: Solid Board (GKF) 25 mm, 120 mm wide, axial clearance 625 mm	0.025 m x 0.12 m x 880 kg/m <sup>3</sup> / 0.625 m	=	4.22 kg/m <sup>2</sup>
+	CW double profile 125, axial clearance 625 mm			<b>3.60 kg/m<sup>2</sup></b>
+	Insulation layer 60 mm, 30 kg/m <sup>3</sup>	0.06 m x 30 kg/m <sup>3</sup>	=	1.80 kg/m <sup>2</sup>

**Self-weight 25.46 kg/m<sup>2</sup> → 0.255 kN/m<sup>2</sup> → Load class: ≤ 0.30 kN/m<sup>2</sup>**
**2. Necessary profile size of the Knauf UA supporting profile 1 + 2**

Continuous room Load class kN/m <sup>2</sup>	Max. room width (m) <sup>1)</sup>	Adjacent room Max. room width (m) <sup>1)</sup>								
		2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	
≤ 0.15	2.50			2x UA 75		2x UA 100	2x UA 100	2x UA 100	2x UA 125	2x UA 125
	3.50	2x UA 50			2x UA 100		2x UA 125			2x UA 150
	4.50		2x UA 75				2x UA 150			
	5.50	2x UA 75		2x UA 100		2x UA 125		2x UA 150		
≤ 0.30	2.50		2x UA 75				2x UA 125		2x UA 150	
	3.50			2x UA 100	2x UA 125					
	4.50	2x UA 75				2x UA 150				
	5.50		2x UA 100	2x UA 125	2x UA 150					
≤ 0.50	2.50	2x UA 75				2x UA 150				
	3.50		2x UA 100	2x UA 125	2x UA 150					
	4.50	2x UA 100		2x UA 125						
≤ 0.65 Multi-Level Ceiling System	2.50			2x UA 125	2x UA 150					
	3.50	2x UA 100	2x UA 125	2x UA 125	2x UA 150					

1) Use the appropriate table for the respective system for determination of the max. room width, see pages 8 to 13 and pages 16 to 19.

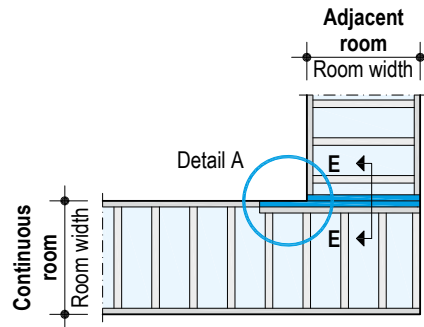
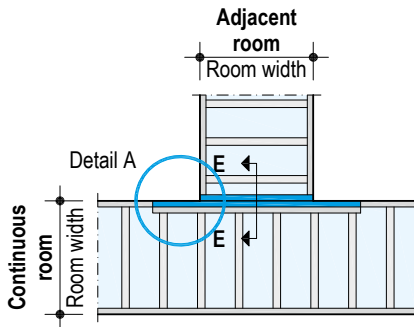
Edge fixing

T connection

Top view | Scheme drawing

L connection

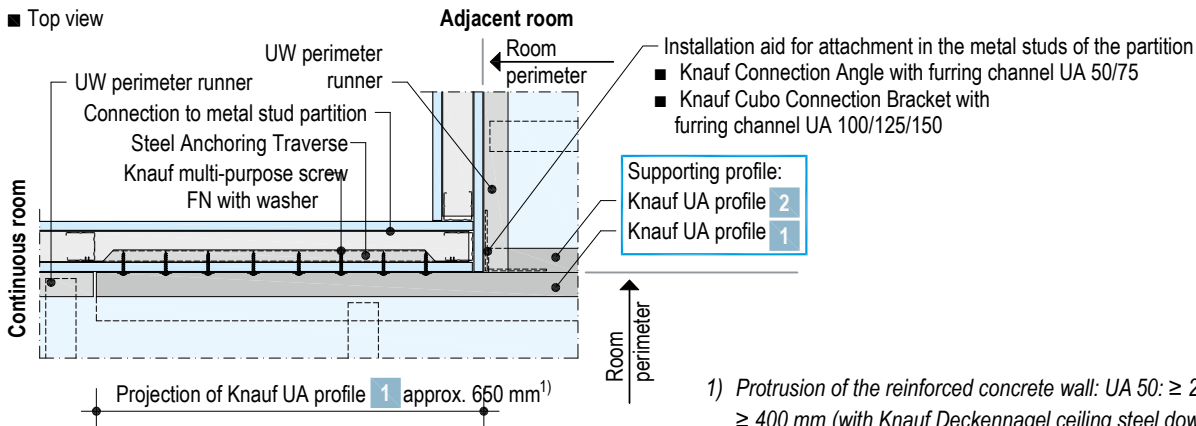
Top view | Scheme drawing



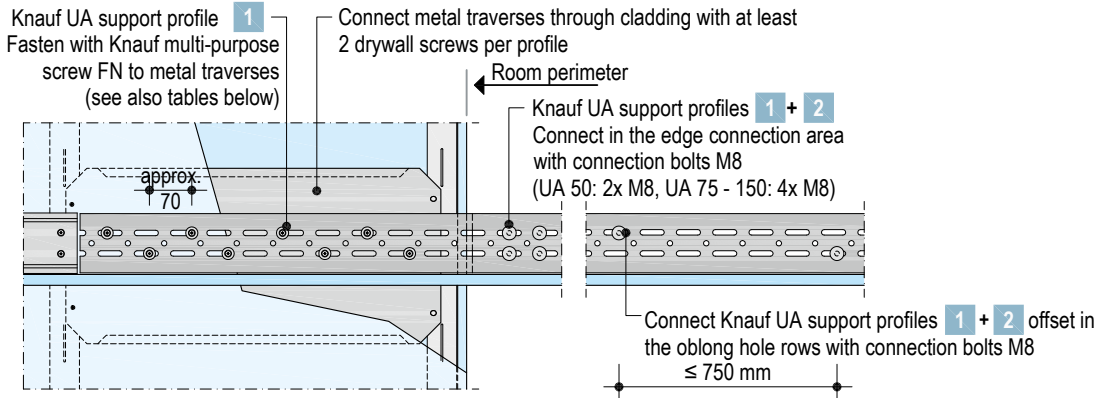
“Detail A” Direct fastening Knauf UA support profile 1 to wall

Representation of metal stud partition

■ Top view



■ View



Fastening Knauf UA support profile 1 to wall

Anchoring substrate	Fastener Knauf profiles UA 50	Knauf profiles UA 75 – 150 Alternating in oblong holes	Fastening spacing	Spacing to room edge First fastener
Connection to metal stud partition with metal traverse	4x Knauf Universalschraube multi-purpose screws FN 4.3x35 (cladding $\leq 20$ mm) / FN 4.3x65 with suitable washer, d = 2 mm, $\varnothing$ 30 mm	8x Knauf Universalschraube multi-purpose screws	approx. 70 mm	Thickness of partition cladding in adjacent room
Reinforced concrete wall	3x Knauf Deckennagel ceiling steel dowels with suitable washer, d = 2 mm, $\varnothing$ 30 mm	6x Knauf Deckennagel ceiling steel dowels	50 – 80 mm	50 – 80 mm
Other substrates	Suitable fastener, permissible total load: $\geq 1$ kN		Observe the manufacturer's specifications	

**Note** Configuration / attachment of the UW runners and the Knauf CW/UA profiles (supporting profiles), see pages 50, 51.

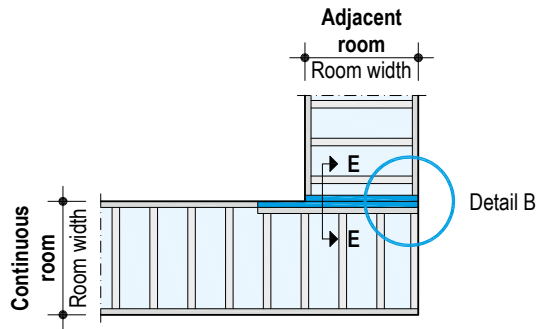
**plus** Extension of the fire resistance Certificate of Usability

- Application of T connection or L connection

Prior consultation in acc. to page 5 is recommended.

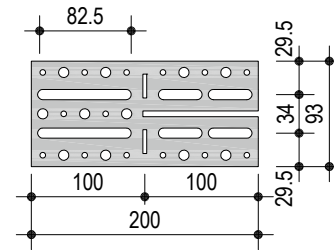
Edge fixing

L connection

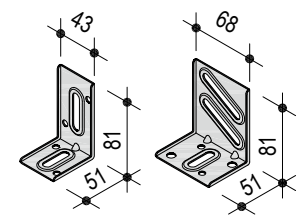


Top view I Scheme drawing

Knauf Cubo Connection Bracket, straight



Knauf Connection Angle  
For UA 50 For UA 75

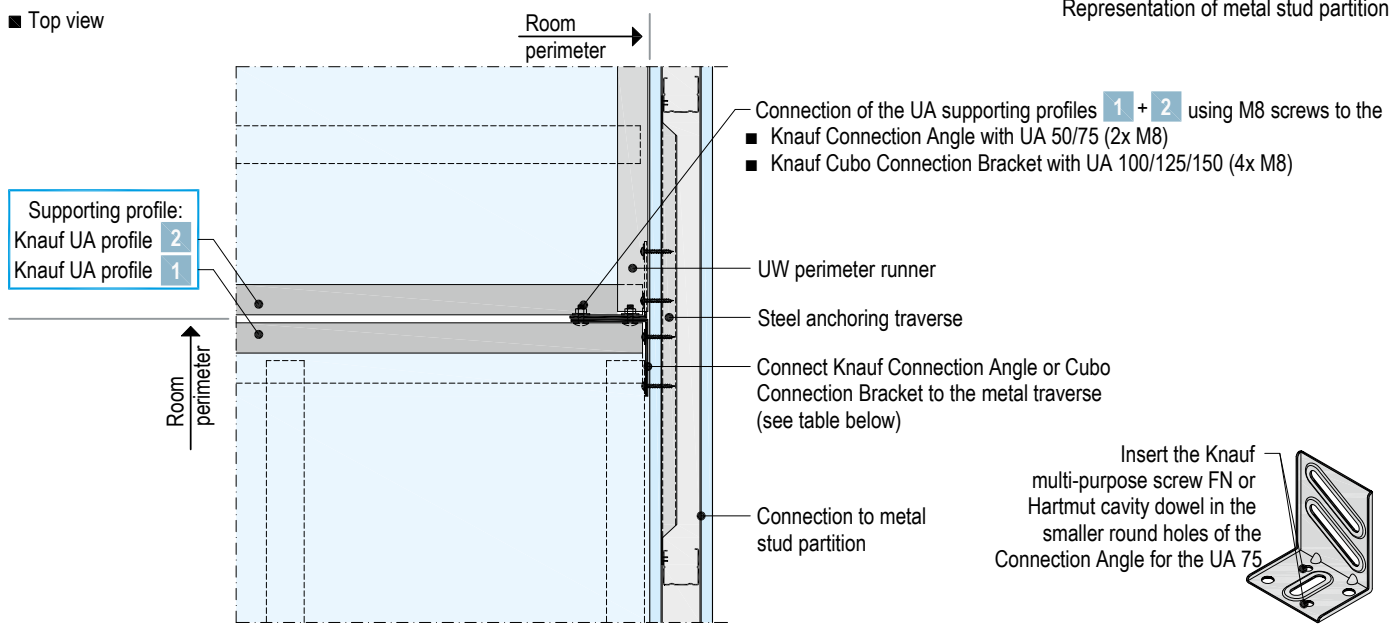


All dimensions in mm

“Detail B” Anchoring of Knauf UA supporting profile 1 + 2 using 2x Knauf Cubo Connection Brackets to the wall

■ Top view

Representation of metal stud partition



Anchoring of Knauf UA supporting profiles 1 + 2 using Knauf Connection Angle or 2x Cubo Connection and Brackets to the wall All dimensions in mm

Fastening substrate	Fastener Knauf profiles UA 50/75 Knauf Connection Angle	Knauf profiles UA 100/125/150 2x Knauf Cubo Connection Bracket, curved	
Metal stud partition with metal traverse	2x Knauf Universalschraube multi-purpose screw FN 4.3x35 (cladding ≤ 20 mm) / FN 4.3x65 Screw into the small round holes of the connection angle	8x Knauf Universalschraube multi-purpose screw FN 4.3x35 (cladding ≤ 20 mm) / FN 4.3x65 with a suitable washer, d = 2 mm Ø 30 mm	
Reinforced concrete wall	2x Knauf Deckennagel ceiling steel dowels	6x Knauf Deckennagel ceiling steel dowels with suitable washer, d = 2 mm Ø 30 mm	
Other substrate	Suitable fastener, permissible total load: ≥ 1 kN	≥ 2 kN	Observe the manufacturer's specifications

Note

Configuration / attachment of the UW runners and the Knauf CW/UA profiles (supporting profiles), see pages 50, 51.



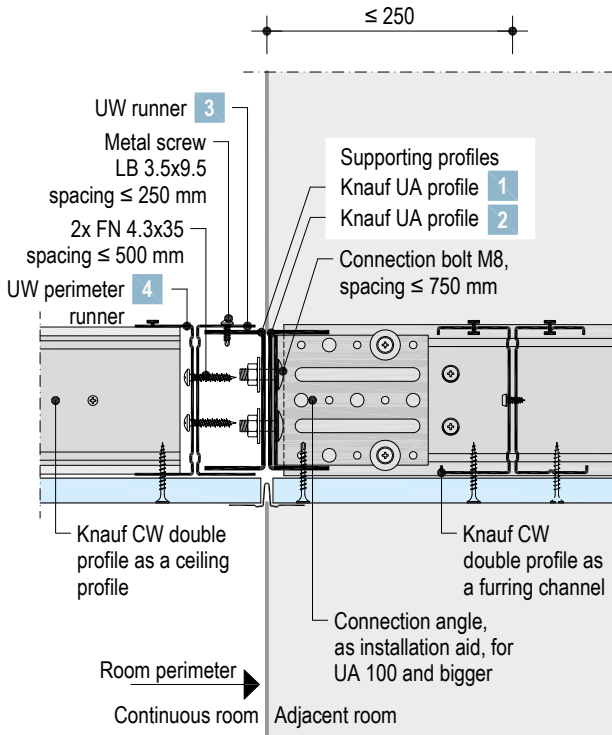
Extension of the fire resistance Certificate of Usability

■ Application of T connection or L connection  
Prior consultation in acc. to page 5 is recommended.

Details

D131.de-E1 Supporting profiles for T and L connection

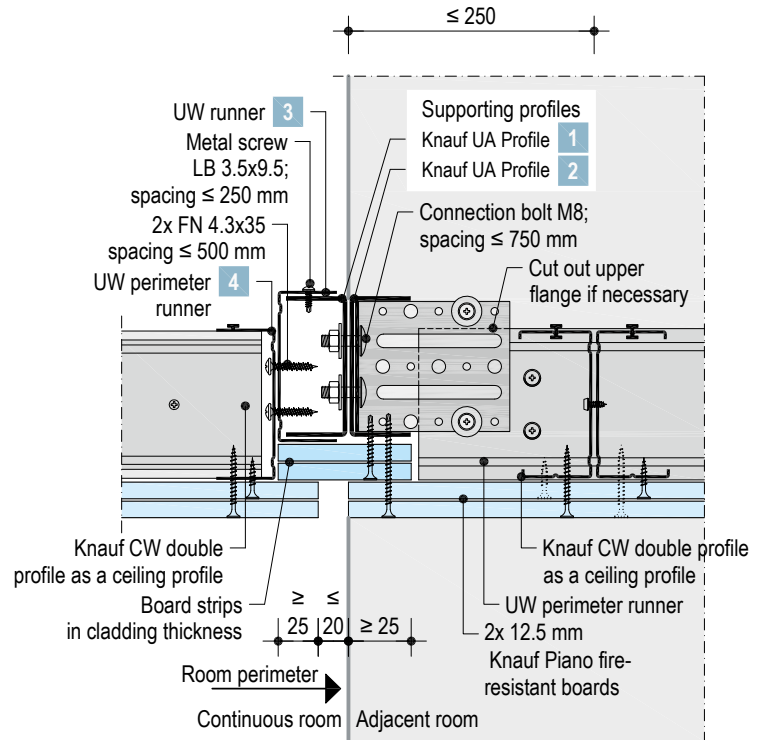
Without fire resistance



Scale 1:5 | All dimensions in mm

D131.de-vu-E1 Supporting profiles for T and L connection

Fire resistance F30 solely from below

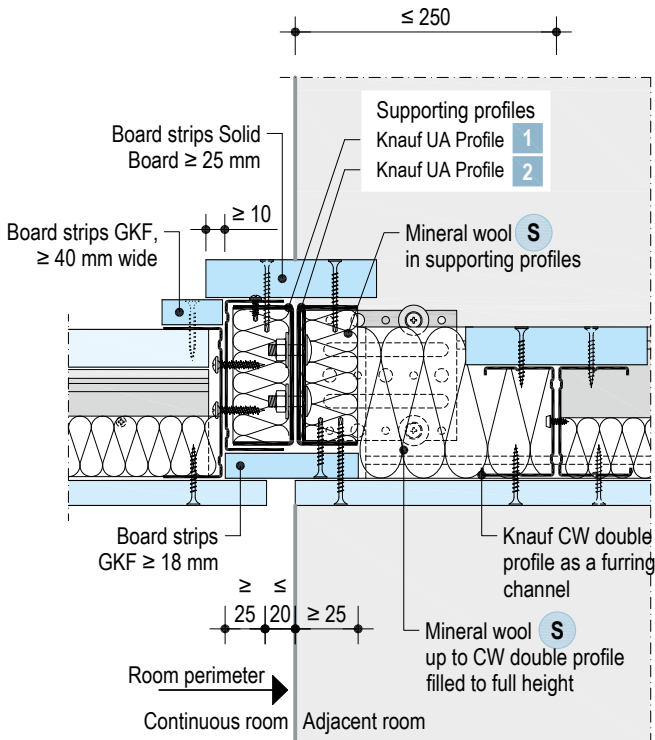


Extension of the fire resistance Certificate of Usability

Prior consultation in acc. to page 5 recommended

D131.de-vuvo-E1 Supporting profiles for T and L connection

Fire resistance F30 solely from below and from above

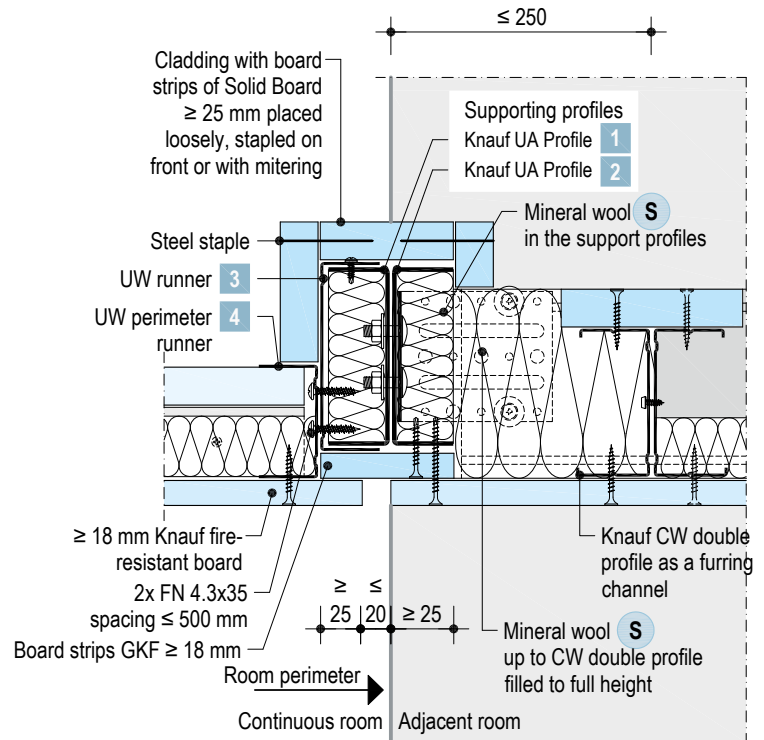


Extension of the fire resistance Certificate of Usability

Prior consultation in acc. to page 5 recommended

D131.de-vuvo-E2 Supporting profiles for T and L connection

Fire resistance F30 solely from below and from above



Extension of the fire resistance Certificate of Usability

Prior consultation in acc. to page 5 recommended

**Note** Observe the respective free-spanning ceiling design type: (see pages 8 to 13 and pages 16 to 19)

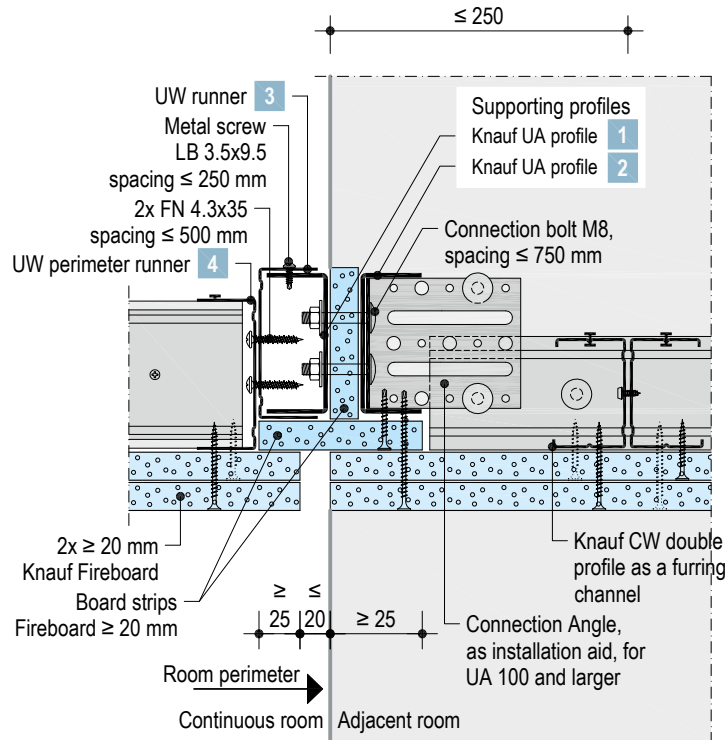


Details

Scale 1:5 | All dimensions in mm

**K219.de-vu-E1 Supporting profiles for T and L connection**

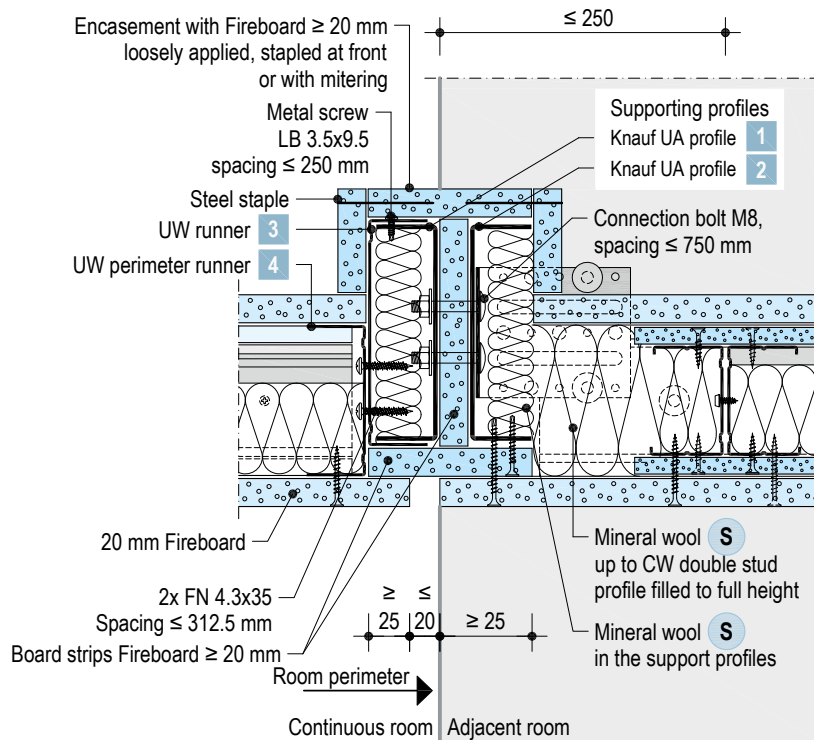
Fire resistance F90 solely from below



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

**K219.de-vuvo-E1 Supporting profiles for T and L connection**

Fire resistance F90 solely from below and from above



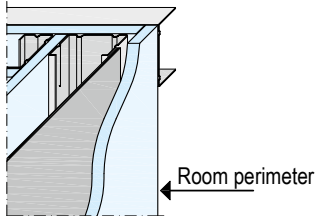
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 5 recommended

**Note** Observe the respective free-spanning ceiling design type: (see pages 8 to 13 and pages 16 to 19)

“Detail A” installation T connection and L connection

**Metal traverse**

Metal traverse installation<sup>1)</sup> in metal stud partition for attachment of Knauf UA supporting profile **1**



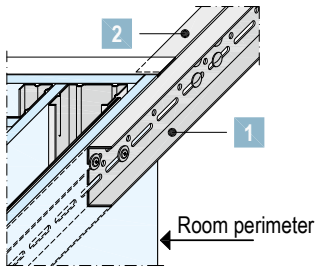
**Supporting profiles**

Anchoring Knauf UA supporting profile **1** on metal traverse with Knauf Universalschraube multi-purpose screws FN (see page 46)

Knauf UA support profiles **1 + 2**

Connect in the oblong hole rows with connection bolts M8, spacing ≤ 750 mm.

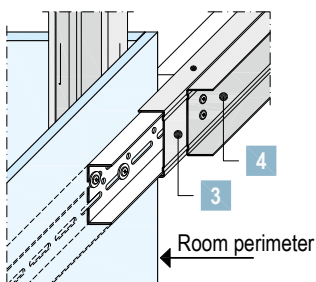
Connect additionally in the support profile edge connection area with M8 connection bolts (UA 50: 2x M8, UA 75 - 150: 4x M8).



**UW profiles**

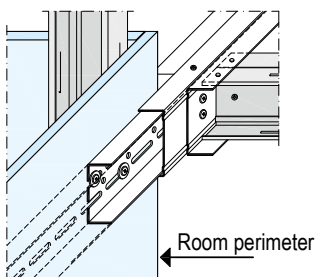
Nest UW Profiles **3** with the supporting Knauf **1** UA profile, and connect them with Metal Screws LB 3.5x9.5 mm on the upper flange at a spacing of ≤ 250 mm

Connect UW perimeter runner **4** with the UW profile **3** with 2x Knauf Universalschraube multi-purpose screws FN in the web at a spacing of ≤ 500 mm.



**Knauf CW profiles**

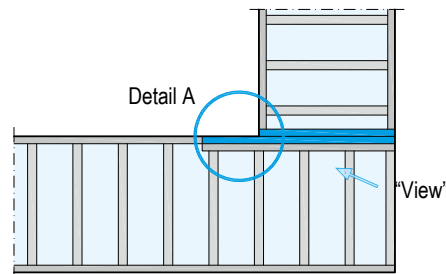
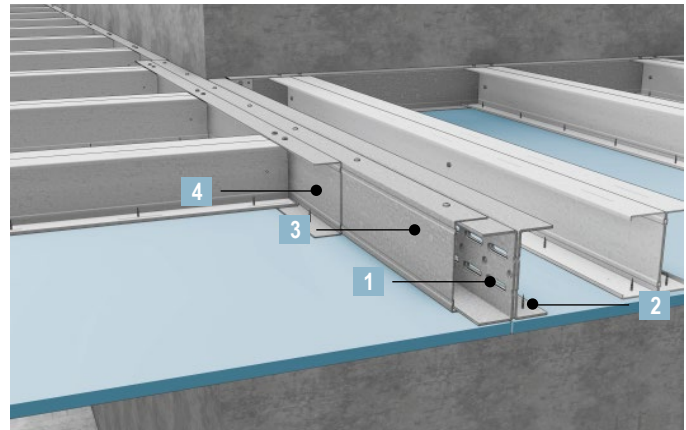
Insert ceiling profiles of the continuous room in the UW perimeter runner (see corresponding system)



1) For installation of the metal traverse see page 52

Scheme drawings | Representation of metal stud partition

“View”



**Note**

**Washers:** (d = 2 mm, Ø 30 mm)

The connection bolts M8 included with the Cubo Connection Brackets should be installed using 1 washer on the same side as the nut. Apply standard commercially available hexagon screws M8 (strength class 8.8) with 2 washers (one on each side)

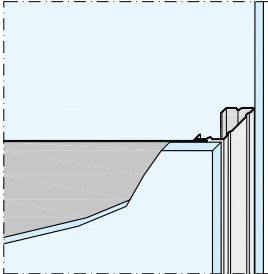
**plus Extension of the fire resistance Certificate of Usability**

- Application of T connection or L connection
- Prior consultation in acc. to page 5 is recommended.

“Detail B” installation L connection, e.g. for UA 100

**Metal traverse**

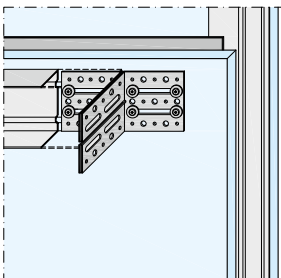
Metal traverse installation<sup>1)</sup> in metal stud partition for attachment of Knauf Cubo Connection Bracket or Connection Angle.



**Knauf Cubo Connection Bracket or Connection Angle**

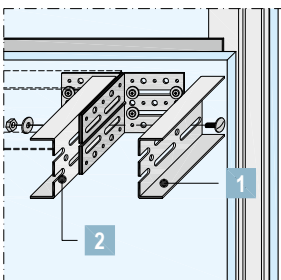
Anchoring of both curved Knauf Cubo Connection Brackets or of the Connection Angle to the metal traverse with Knauf multi-purpose screws FN (see page 47)

Insert the bracket into the UW perimeter runner of the adjacent room (if necessary, cut out the upper flange in the vicinity of the bracket).



**Supporting profiles**

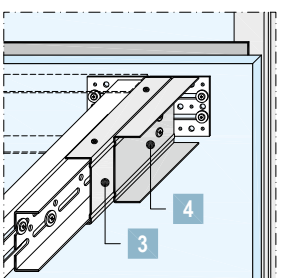
Connect the Knauf UA supporting profiles **1** + **2** and the Cubo Connection Bracket or connection angle with the connection bolts M8 (UA 50 - 75: 2x M8, UA 100 - 150: 4x M8).



**UW profiles**

Nest UW Profiles **3** with the supporting Knauf **1** UA profile, and connect them with Metal Screws LB 3.5x9.5 mm on the upper flange at a spacing of ≤ 250 mm

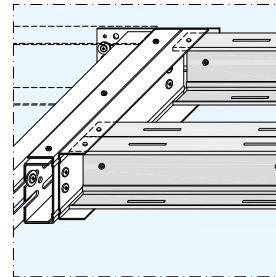
Connect UW perimeter runner **4** with the UW profile **3** with 2x Knauf multi-purpose screws FN in the web at a spacing of ≤ 500 mm.



Scheme drawings | Representation of metal stud partition

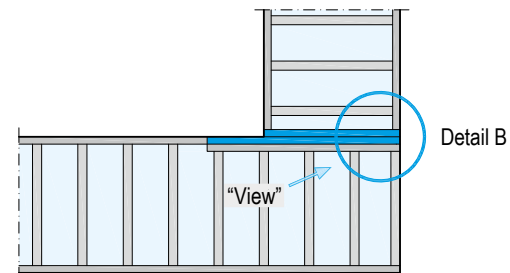
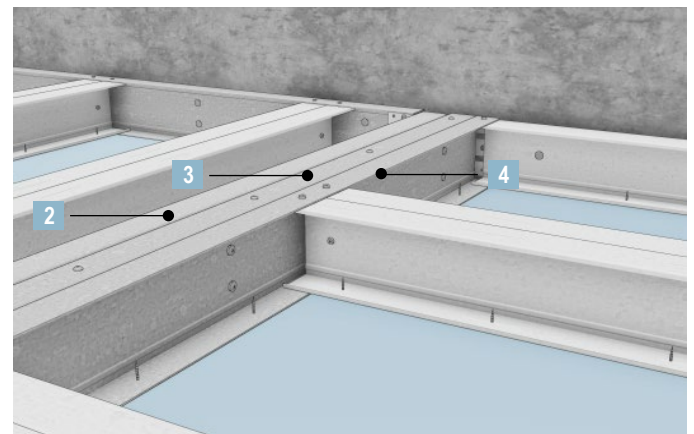
**Knauf CW profiles**

Insert ceiling profiles of the continuous room in the UW perimeter runner (see corresponding system)



1) For installation of the metal traverse see page 52

“View”



**Note**

**Washers:** (d = 2 mm, Ø 30 mm)

The connection bolts M8 included with the Cubo Connection Brackets should be installed using 1 washer on the same side as the nut. Apply standard commercially available hexagon screws M8 (strength class 8.8) with 2 washers (one on each side)



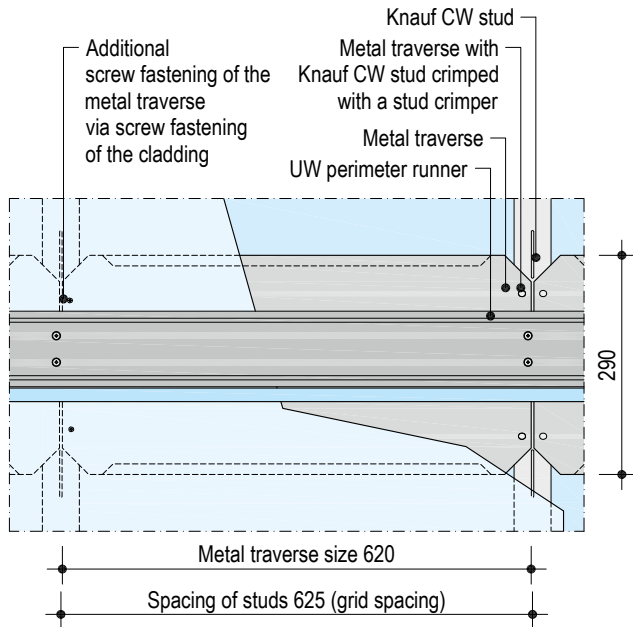
**Extension of the fire resistance Certificate of Usability**

■ Application of T connection or L connection

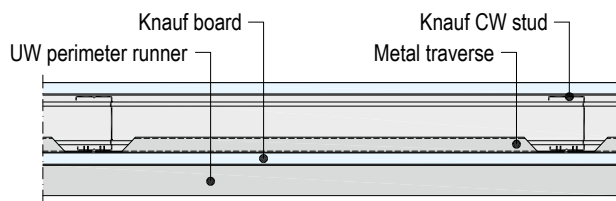
Prior consultation in acc. to page 5 is recommended.

Installation of the metal traverse with connection of furring channel UA to metal stud partition or with an L/T connection

View Scheme drawings | All dimensions in mm



Horizontal sections

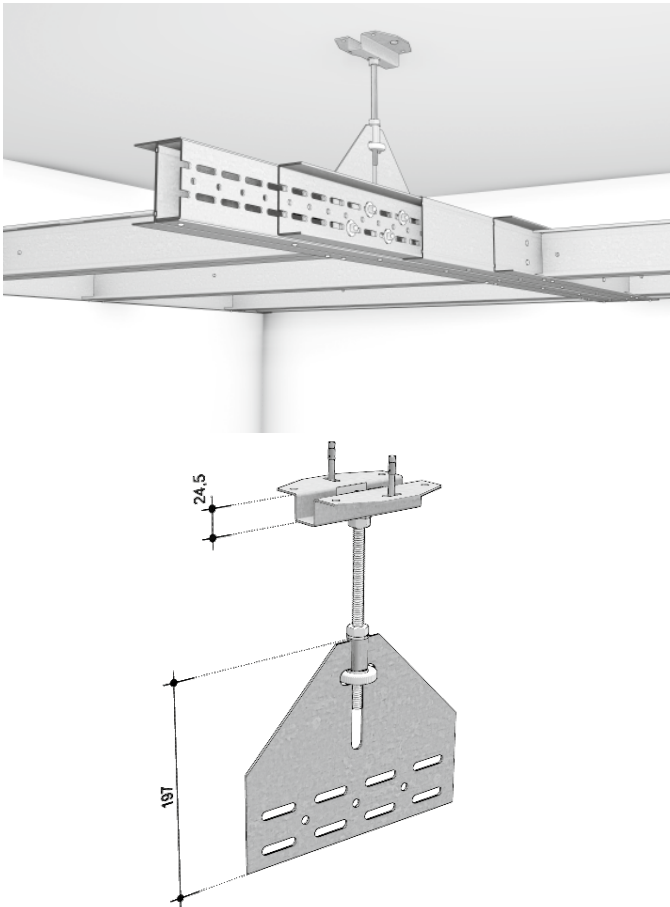


Installation

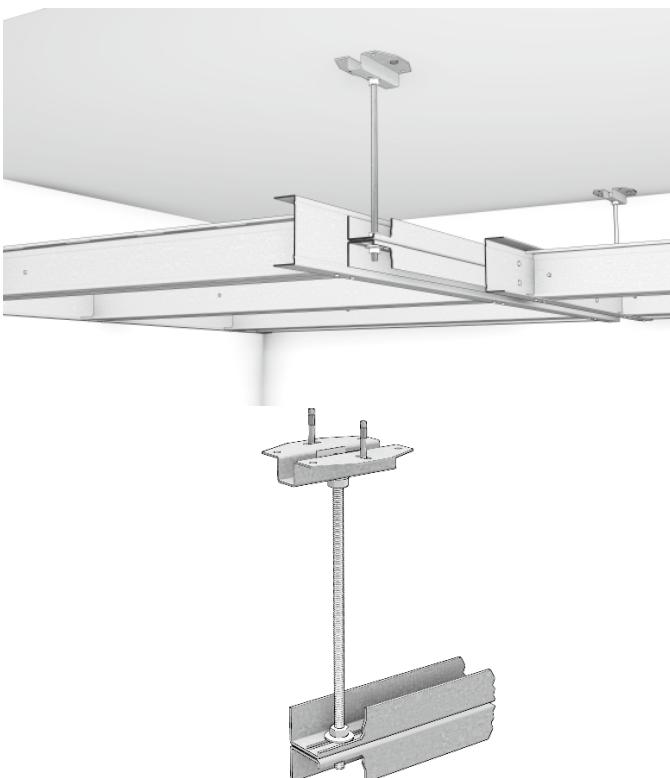
Crimp the metal traverse made of galvanized sheet metal on the side to the CW studs using the stud crimper.

Additional screw fastening of the metal traverse using the screw fastening of the cladding (min. 2 to 3 screw fastening connections). Reduction of the screw spacing for the cladding may be prudent.

Centre suspension with UA centre suspension



Centre suspension with threaded rod



- Centre suspensions facilitate larger ceiling span widths.
- Further information on request.

Exposed ceiling under free-spanning ceiling

**Notes**

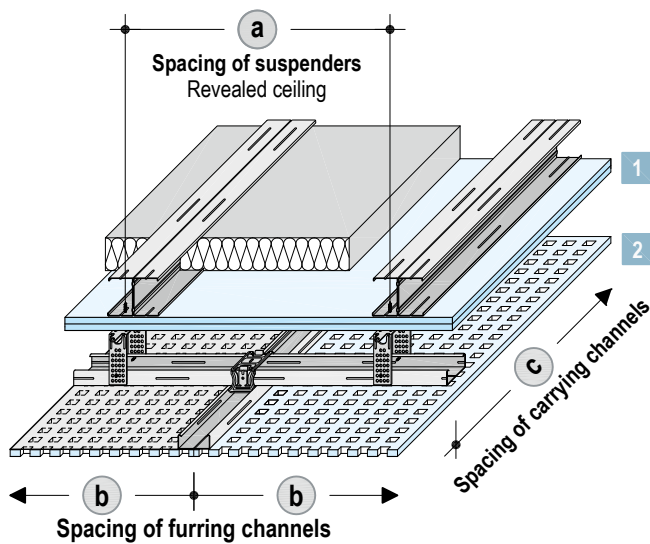
The anchoring of exposed ceilings such as D127.de Acoustic Board Ceilings with a max. area weight of 15 kg/m<sup>2</sup> or max. 10 kg per suspender to the free-spanning ceiling is permissible. Anchoring of the suspenders on the exposed ceiling is undertaken with suitable fasteners directly into the furring channel of the free-spanning ceiling.

Always apply suspended channels of exposed ceiling lateral to furring channel of the fire resistance ceiling.

Anchoring of suspenders in ceiling channels of the free-spanning ceiling with Knauf multi-purpose screws FN 4.3x35 / FN 4.3x65.

With exposed metal ceiling suspension height min. 150 mm.

Heavy loads must be anchored directly on load-bearing building elements (basic ceiling) or on auxiliary constructions.



**Legend**

1 Knauf Free-Spanning Ceiling  
 2 Exposed ceiling (e.g. Knauf Cleaneo Acoustic Board Ceilings)

All dimensions in mm

**1 Freely-suspended ceiling**  
 The additional weight of the exposed ceiling ( $\leq 15 \text{ kg/m}^2$ ) has been taken into consideration with the max. permissible room widths of the free-spanning ceiling on the following page.

**2 Maximum spacings of exposed ceiling**

Axial spacings carrying channel (c)	Spacings suspender <sup>1)</sup> Load class in kN/m <sup>2</sup> Up to 0.15	Axial spacings Furring channel (b)	
		Knauf Board Ceilings	Knauf Cleaneo Acoustic Board Ceilings
1000	625	500	Dependent on the perforation design
1200	500		333.5

1) Suspension must be fastened to the furring channels of the fire resistance ceiling.

**Attachment of loads to exposed ceilings under Free-Spanning Ceilings**

The maximum permissible weight per anchoring point with a Knauf Acoustic Board Ceiling is 0.5 kg per attachment point to the cladding and 3 kg when attached to the grid.

Furthermore, the following conditions apply:

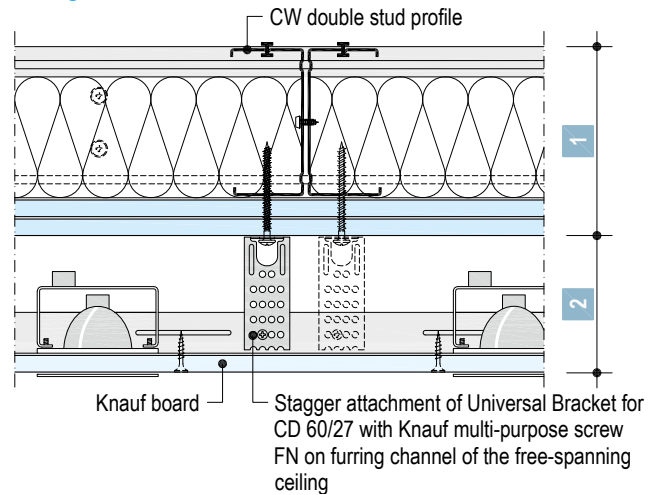
The minimum spacings of the individual fixing loads can be taken from the diagram on page 23 using the grey curve for 3 kg/m<sup>2</sup> additional loads.

The total weight of the exposed ceiling incl. weight of all the parts attached to it may not exceed 15 kg/m<sup>2</sup>.

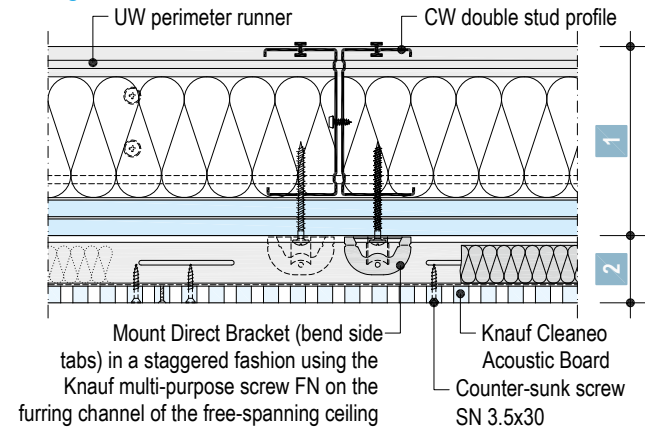
**Details**

Scale 1:5

**D131.de-D112.de-C1 Exposed ceiling under free-spanning ceiling**



**D131.de-D127.de-C1 Exposed ceiling under free-spanning ceiling**



### Metal – grid free-spanning for multi-level ceiling

#### D131.de Knauf Free-Spanning Ceiling without fire resistance

Scheme drawing	Knauf profiles	Maximum room width <sup>1)</sup>					Silentboard	Silentboard + Diamant
		Knauf Wallboard	Diamant					
1 Knauf Free-Spanning Ceiling	12.5 mm	12.5 mm	15 mm	2x 12.5 mm	12.5 mm	12.5 + 12.5 mm		
2 Exposed ceiling	m	m	m	m	m	m	m	
	<b>Knauf CW double profile metal gauge 0.6 mm</b>							
	2x CW 50	2.45	2.40	2.35	2.20	2.40	2.25	
	2x CW 75	3.05	3.00	2.95	2.75	3.00	2.80	
	2x CW 100	3.60	3.50	3.45	3.25 <sup>2)</sup>	3.55	3.30 <sup>2)</sup>	
	2x CW 125	4.05	3.95	3.90	3.65 <sup>2)</sup>	4.00 <sup>2)</sup>	3.75 <sup>2)</sup>	
	2x CW 150	4.50	4.40 <sup>2)</sup>	4.30 <sup>2)</sup>	4.05 <sup>2)</sup>	4.45 <sup>2)</sup>	4.15 <sup>3)</sup>	
	<b>Knauf UA double profile metal gauge 2.0 mm</b>							
	2x UA 50	2.95	2.85	2.80	2.65	2.90	2.70 <sup>2)</sup>	
	2x UA 75	3.65	3.55	3.50	3.30 <sup>2)</sup>	3.60 <sup>2)</sup>	3.40 <sup>2)</sup>	
	2x UA 100	4.30 <sup>2)</sup>	4.20 <sup>2)</sup>	4.15 <sup>2)</sup>	3.90 <sup>3)</sup>	4.25 <sup>2)</sup>	4.00 <sup>3)</sup>	
	2x UA 125	4.85 <sup>2)</sup>	4.75 <sup>2)</sup>	4.70 <sup>3)</sup>	4.45 <sup>3)</sup>	4.80 <sup>3)</sup>	4.55 <sup>3)</sup>	
	2x UA 150	5.40 <sup>3)</sup>	5.25 <sup>3)</sup>	5.20 <sup>3)</sup>	4.95 <sup>3)</sup>	5.35 <sup>3)</sup>	5.05 <sup>3)</sup>	

Permissible wall connections see page 8

#### D131.de Knauf Free-Spanning Ceiling fire resistance F30 solely from below

Scheme drawing	Knauf profiles	Maximum room width <sup>1)</sup>			Silentboard + Diamant	
		Knauf Piano fire-resistant board	Knauf Feuer-schutzplatte fire-resistant board	Diamant		
1 Knauf Free-Spanning Ceiling	2x 12.5 mm	18 mm	18 mm	2x 12.5 mm	12.5 + 12.5 mm	
2 Exposed ceiling	m	m	m	m	m	
	<b>Knauf CW double profile metal gauge 0.6 mm</b>					
	2x CW 50	2.25	2.20	2.15	2.20	2.25
	2x CW 75	2.80	2.80	2.70	2.75	2.80
	2x CW 100	3.30	3.25	3.20	3.25 <sup>2)</sup>	3.30 <sup>2)</sup>
	2x CW 125	3.75 <sup>2)</sup>	3.70	3.65	3.65 <sup>2)</sup>	3.75 <sup>2)</sup>
	2x CW 150	4.15 <sup>2)</sup>	4.10 <sup>2)</sup>	4.05 <sup>2)</sup>	4.05 <sup>2)</sup>	4.15 <sup>3)</sup>
	<b>Knauf UA double profile metal gauge 2.0 mm</b>					
	2x UA 50	2.70	2.70	2.65	2.65	2.70 <sup>2)</sup>
	2x UA 75	3.40 <sup>2)</sup>	3.35	3.30	3.30 <sup>2)</sup>	3.40 <sup>2)</sup>
	2x UA 100	4.00 <sup>2)</sup>	3.95 <sup>2)</sup>	3.90 <sup>2)</sup>	3.90 <sup>3)</sup>	4.00 <sup>3)</sup>
	2x UA 125	4.55 <sup>3)</sup>	4.50 <sup>2)</sup>	4.40 <sup>2)</sup>	4.45 <sup>3)</sup>	4.55 <sup>3)</sup>
	2x UA 150	5.05 <sup>3)</sup>	5.00 <sup>3)</sup>	4.90 <sup>3)</sup>	4.95 <sup>3)</sup>	5.05 <sup>3)</sup>

Permissible wall connections see page 10

- 1) Maximum room widths: Including additional loads (3 kg/m<sup>2</sup>) for insulation layers necessary for fire resistance and sound insulation measures or fixing loads as well as 15 kg/m<sup>2</sup> for the entire load of the multi-level ceiling system.
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
 ≥ 18 mm Knauf Boards /  
 ≥ 15 mm Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.



#### Extension of the fire resistance Certificate of Usability

■ Multi-Level Ceiling System design

Prior consultation in acc. to page 5 is recommended.

Metal – grid free-spanning for multi-level ceiling

D131.de Knauf free-spanning ceiling fire resistance F30 solely from below and from above

Scheme drawing	Knauf profiles	Maximum room width <sup>1)</sup>				
		Knauf Piano fire-resistant board	Knauf Feuer-schutzplatte fire-resistant board	Diamant		Silentboard + Diamant
1 Knauf Free-Spanning Ceiling		2x 12.5 mm	18 mm	18 mm	2x 12.5 mm	12.5 + 12.5 mm
2 Exposed ceiling		m	m	m	m	m
<b>Knauf CW double profile metal gauge 0.6 mm</b>						
	2x CW 50	1.90	1.85	1.80	1.80	1.90
	2x CW 75	2.40	2.35	2.25	2.30	2.40
	2x CW 100	2.85	2.80	2.70	2.75	2.90 <sup>2)</sup>
	2x CW 125	3.30 <sup>2)</sup>	3.20	3.10	3.15 <sup>2)</sup>	3.30 <sup>2)</sup>
	<b>Knauf UA double profile metal gauge 2.0 mm</b>					
2x UA 50	2.65	2.60	2.60	2.60	2.65 <sup>2)</sup>	
2x UA 75	3.30 <sup>2)</sup>	3.25	3.20 <sup>2)</sup>	3.25 <sup>2)</sup>	3.30 <sup>3)</sup>	
2x UA 100	3.90 <sup>3)</sup>	3.85 <sup>2)</sup>	3.80 <sup>2)</sup>	3.85 <sup>3)</sup>	3.90 <sup>3)</sup>	
2x UA 125	4.45 <sup>3)</sup>	4.40 <sup>2)</sup>	4.30 <sup>3)</sup>	4.35 <sup>3)</sup>	4.45 <sup>3)</sup>	

Permissible wall connections see page 12

D131.de Knauf free-spanning ceiling fire resistance F60 solely from below and from above

Scheme drawing	Knauf profiles	Maximum room width <sup>1)</sup>	
		Knauf Piano fire-resistant board	Diamant
1 Knauf Free-Spanning Ceiling		2x 12.5 mm	2x 12.5 mm
2 Exposed ceiling		m	m
<b>Knauf CW double profile metal gauge 0.6 mm</b>			
	2x CW 50	2.10	2.05
	2x CW 75	2.65	2.55 <sup>2)</sup>
	2x CW 100	3.10 <sup>2)</sup>	3.00 <sup>2)</sup>
	2x CW 125	3.50 <sup>2)</sup>	3.40 <sup>3)</sup>
	2x CW 150	3.90 <sup>2)</sup>	3.80 <sup>3)</sup>
<b>Knauf UA double profile metal gauge 2.0 mm</b>			
2x UA 50	2.55 <sup>2)</sup>	2.50 <sup>2)</sup>	
2x UA 75	3.20 <sup>2)</sup>	3.10 <sup>2)</sup>	
2x UA 100	3.75 <sup>3)</sup>	3.70 <sup>2)</sup>	
2x UA 125	4.30 <sup>3)</sup>	4.20 <sup>2)</sup>	
2x UA 150	4.75 <sup>3)</sup>	4.65 <sup>3)</sup>	

Permissible wall connections see page 14

- 1) Maximum room widths: Including additional loads (3 kg/m<sup>2</sup>) for insulation layers necessary for fire resistance and sound insulation measures or fixing loads as well as 15 kg/m<sup>2</sup> for the entire load of the multi-level ceiling system.
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
 ≥ 18 mm Knauf Boards /  
 ≥ 15 mm Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.

**plus** Extension of the fire resistance Certificate of Usability  
 ■ Multi-Level Ceiling System design  
 Prior consultation in acc. to page 5 is recommended.



### Metal – grid free-spanning for multi-level ceiling

#### K219.de Knauf Free-Spanning Fireboard Ceiling A1 fire protection F90 solely from below

Scheme drawing	Knauf profiles	Maximum room width <sup>1)</sup>
1 Knauf Free-Spanning Ceiling		Fireboard
2 Exposed ceiling		2x 20 mm m
	<b>Knauf CW double profile metal gauge 0.6 mm</b>	
	2x CW 50	2.00
	2x CW 75	2.50
	2x CW 100	2.95 <sup>2)</sup>
	2x CW 125	3.35 <sup>2)</sup>
	2x CW 150	3.75 <sup>2)</sup>
	<b>Knauf UA double profile metal gauge 2.0 mm</b>	
	2x UA 50	2.45
	2x UA 75	3.05 <sup>2)</sup>
	2x UA 100	3.65 <sup>3)</sup>
	2x UA 125	4.15 <sup>3)</sup>
	2x UA 150	4.60 <sup>3)</sup>

Permissible wall connections see page 16

#### K219.de Knauf Free-Spanning Fireboard ceiling A1 fire resistance F90 solely from below and from above

Scheme drawing	Knauf profiles	Maximum room width <sup>1)</sup>
1 Knauf Free-Spanning Ceiling		Fireboard
2 Exposed ceiling		20 mm m
	<b>Knauf CW double profile metal gauge 0.6 mm</b>	
	2x CW 50	1.95
	2x CW 75	2.50
	2x CW 100	2.90 <sup>2)</sup>
	2x CW 125	3.30 <sup>2)</sup>
	<b>Knauf UA double profile metal gauge 2.0 mm</b>	
	2x UA 50	2.40
	2x UA 75	3.00 <sup>2)</sup>
	2x UA 100	3.55 <sup>3)</sup>
	2x UA 125	4.05 <sup>3)</sup>

Permissible wall connections see page 18

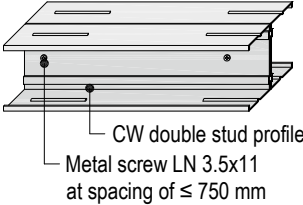
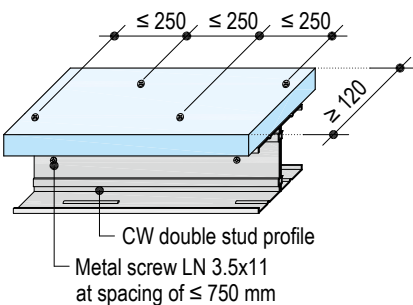
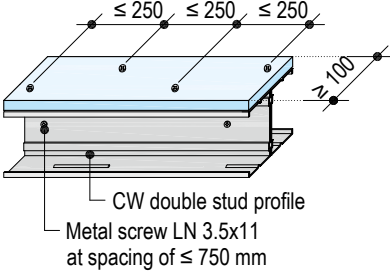
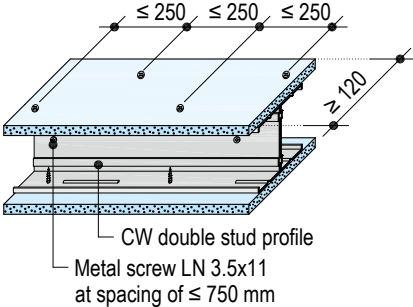
- 1) Maximum room widths: Including additional loads (3 kg/m<sup>2</sup>) for insulation layers necessary for fire resistance and sound insulation measures or fixing loads as well as 15 kg/m<sup>2</sup> for the entire load of the multi-level ceiling system.
- 2) Required cladding thickness with flanking metal stud partitions on the side of the supporting connection:  
 ≥ 18 mm Knauf Boards /  
 ≥ 15 mm Diamant
- 3) Metal traverse required with flanking metal stud partitions. See page 52 for installation.

**Extension of the fire resistance Certificate of Usability**  
 ■ Multi-Level Ceiling System design  
 Prior consultation in acc. to page 5 is recommended.

### CW furring channels

All dimensions in mm

- Furring channels made of Knauf CW Profiles as single or double profiles. In case of fire resistance requirements, only double profiles permissible.

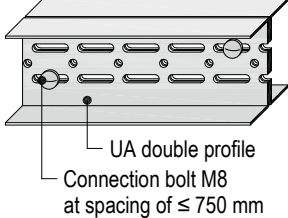
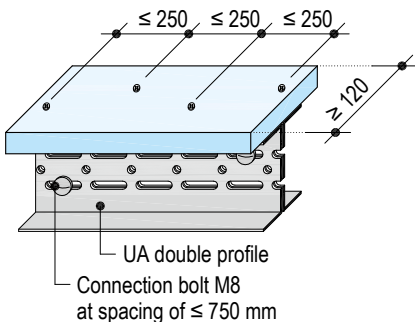
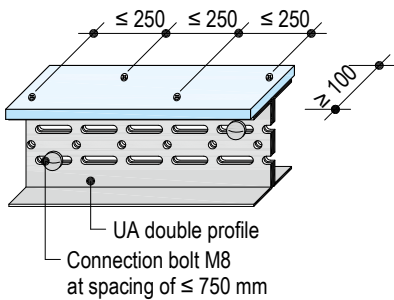
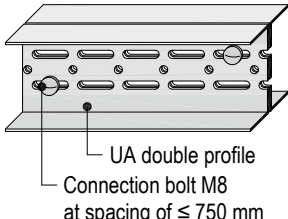
Description	CW double stud profile
<p><b>D131.de Knauf Free-Spanning Ceilings</b> without fire resistance / fire resistance F30 solely from below  <b>K219.de Knauf Free-Spanning Fireboard Ceiling A1</b> fire resistance F90 solely from below</p> <ul style="list-style-type: none"> <li>■ Screw fastening with metal screws LN 3.5x11 at spacings of <math>\leq 750</math> mm.</li> </ul>	 <p>CW double stud profile  Metal screw LN 3.5x11  at spacing of <math>\leq 750</math> mm</p>
<p><b>D131.de Knauf Free-Spanning Ceilings</b> Fire resistance F30 solely from below and from above</p> <ul style="list-style-type: none"> <li>■ Screw fastening with metal screws LN 3.5x11 at spacings of <math>\leq 750</math> mm.</li> <li>■ Covering strips: Stagger the fastening of the 25 mm Solid Board GKF in the double profile using drywall screws TN 3.5x35. Prefabricated board strips are available.</li> </ul>	 <p>CW double stud profile  Metal screw LN 3.5x11  at spacing of <math>\leq 750</math> mm</p>
<p><b>D131.de Knauf Free-Spanning Ceilings</b> Fire resistance F60 solely from below and from above</p> <ul style="list-style-type: none"> <li>■ Screw fastening with metal screws LN 3.5x11 at spacings of <math>\leq 750</math> mm.</li> <li>■ Covering strips: Stagger the fastening of 12.5 mm Knauf Piano fire-resistant board with drywall screws TN 3.5x25 or 12.5 mm Diamant with Diamant screws XTN 3.9x23 in CW double profiles. Prefabricated board strips are available.</li> </ul>	 <p>CW double stud profile  Metal screw LN 3.5x11  at spacing of <math>\leq 750</math> mm</p>
<p><b>K219.de Knauf free-spanning Fireboard ceilings A1</b> Fire resistance F90 solely from below and from above</p> <ul style="list-style-type: none"> <li>■ Screw fastening with metal screws LN 3.5x11 at spacings of <math>\leq 750</math> mm.</li> <li>■ Covering strips: Screw fix 12.5 mm Fireboard with Drywall Screws TN 3.5x25 staggered in the CW double profile. Prefabricated board strips are available.</li> </ul>	 <p>CW double stud profile  Metal screw LN 3.5x11  at spacing of <math>\leq 750</math> mm</p>

**Note** Construction details observing the building physical requirements and Certificate of Usability.

### UA furring channels

All dimensions in mm

- Furring channels made of Knauf UA profiles as single or double profiles. In case of fire protection requirements, only double profiles permissible.

Description	UA double profile
<p><b>D131.de Knauf Free-Spanning Ceilings</b> without fire resistance / fire resistance F30 solely from below</p> <p><b>K219.de Knauf Free-Spanning Fireboard Ceiling A1</b> Fire resistance F90 solely from below</p> <ul style="list-style-type: none"> <li>■ Screw fastening with connection bolt M8 at spacings of <math>\leq 750</math> mm.</li> </ul>	 <p>UA double profile Connection bolt M8 at spacing of <math>\leq 750</math> mm</p>
<p><b>D131.de Knauf Free-Spanning Ceilings</b> Fire resistance F30 solely from below and from above</p> <ul style="list-style-type: none"> <li>■ Screw fastening with connection bolt M8 at spacings of <math>\leq 750</math> mm.</li> <li>■ Covering strips: Stagger the fastening of the 25 mm Solid Board GKF in the double profile using dry-wall screws TB 3.5x35. Prefabricated board strips are available.</li> </ul>	 <p>UA double profile Connection bolt M8 at spacing of <math>\leq 750</math> mm</p>
<p><b>D131.de Knauf Free-Spanning Ceilings</b> Fire resistance F60 solely from below and from above</p> <ul style="list-style-type: none"> <li>■ Screw fastening with connection bolt M8 at spacings of <math>\leq 750</math> mm.</li> <li>■ Covering strips: Stagger the fastening of 12.5 mm Knauf Piano fire-resistant board with drywall screws TB 3.5x25 or 12.5 mm Diamant with Diamant screws XTB 3.9x38 in CW double profiles. Prefabricated board strips are available.</li> </ul>	 <p>UA double profile Connection bolt M8 at spacing of <math>\leq 750</math> mm</p>
<p><b>K219.de Knauf Free-Spanning Fireboard Ceilings A1</b> Fire resistance F90 solely from below and from above</p> <ul style="list-style-type: none"> <li>■ Screw fastening with connection bolt M8 at spacings of <math>\leq 750</math> mm.</li> </ul>	 <p>UA double profile Connection bolt M8 at spacing of <math>\leq 750</math> mm</p>

#### Note

Construction details observing the building physical requirements and Certificate of Usability.

### Connection to wall with furring channels CW

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

#### Load-bearing connection to wall

Apply a load-bearing perimeter connection made of UW profiles. Anchoring acc. to table below. Connect CW profiles as double profiles at the web with metal screws LN 3.5x11 at a spacing of max. 750 mm. Support of the CW profiles in the UW runners  $\geq 30$  mm. Connect upper flanges of UW/CW profiles (with double profiles both upper flanges) by riveting, screwing or crimping, if no covering strips are required.

#### Structural connection to wall

Apply a structural perimeter connection made of UW runners or CW profiles. Max. fastening spacing 625 mm. Fasten to solid walls with Knauf available plugs, on lightweight partitions with multi-purpose screws FN 4.3x65 in every stud of the partition.

#### Additional measures with the grid for systems with fire resistance

*System D131.de F30 solely from below and from above*

- The UW perimeter runner must feature a web height that is 25 mm larger than the CW double profile.

*System D131.de F60 solely from below and from above*

- Screw fasten 50 mm wide covering strips made of 12.5 mm Knauf Piano fire-resistant board with drywall screws TN 3.5x25 or 12.5 mm Diamant with Diamant screws XTN 3.9x23 on the UW profile and CW perimeter runner. Distance between screw centres  $\leq 250$  mm. Prefabricated board strips are available.

*System K219.de*

- If the free-spanning ceiling is connected (anchored) to a lightweight partition (F90), an additional,  $\geq 18$  mm thick Knauf Feuerschutzplatte fire-resistant board or Fireboard cladding layer is necessary for the full surface wall partition doubling up on the side of the supporting connection.

*System K219.de F90 solely from below and from above*

- Behind the required double layer an additional flexible corner profile for screwing on a Flex Profile (clearance 312.5 mm) of the UW perimeter runner must be installed in the partition construction.
- The UW perimeter runner must feature a web height that is 25 mm larger than the CW double profile.

### Anchoring of the UW perimeter runners with furring channels CW

All dimensions in mm

Anchoring substrate	Fastener	Max. fastening spacing dependent on fire resistance	Max. fastening spacing dependent on fire resistance		
			■ Without fire resistance	■ F30 - F90 solely from below ■ F30 - F60 solely from below and from above	■ F90 solely from below and from above
Connection to metal stud partition (anchoring in metal studs or Flex profiles)	2x Knauf multi-purpose screws FN 4.3x35 Cladding thickness $\leq 20$ mm		625	625	312.5
	2x Knauf multi-purpose screws FN 4.3x65				
Reinforced concrete wall	Knauf Ceiling Steel Dowels		300	300	250
	Knauf Nailable Plug L 8/80		300	–	–
Stable masonry without cavities or light concrete (density $\geq 1000$ kg/m <sup>3</sup> )	Knauf Nailable Plug L 8/80		300	–	–
	Fasteners and anchors suitable for the substrate		300 <sup>1)</sup>	–	–
	Non-combustible fasteners and anchors suitable for the substrate		–	300 <sup>1)</sup>	300 <sup>2)</sup>
Other substrates	Fasteners and anchors suitable for the substrate		300 <sup>1)</sup>	–	–
	Non-combustible fasteners and anchors suitable for the substrate		–	300 <sup>1)</sup>	300 <sup>2)</sup>

- Minimum load-bearing capacity:

1) Shear 0.35 kN

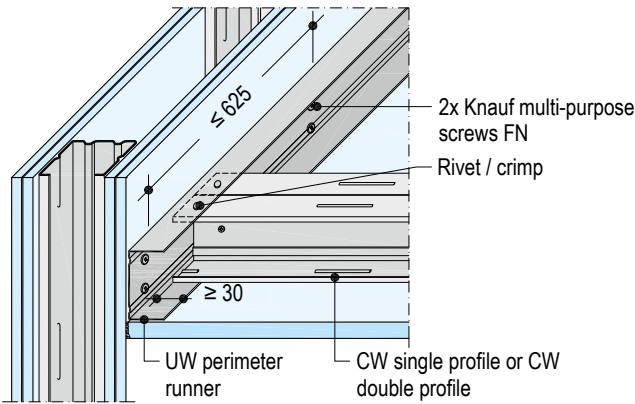
2) Shear 0.35 kN and withdrawal 0.5 kN

- With fire protection up to F30 and a room width  $\leq 2.25$  m the number of screws can be halved or the spacing of the fastener can be doubled (does not apply for the multi-level ceiling system)

### Connection to wall with furring channels CW

#### D131.de Knauf Free-Spanning Ceilings

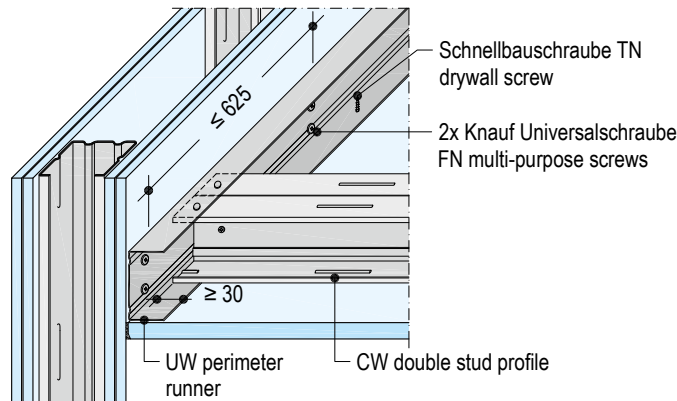
Without fire resistance



- Connect Knauf CW profiles as single or double profiles (per flange) with UW runner by riveting, crimping or screwing with Knauf Metal Screws LN 3.5x11 mm.

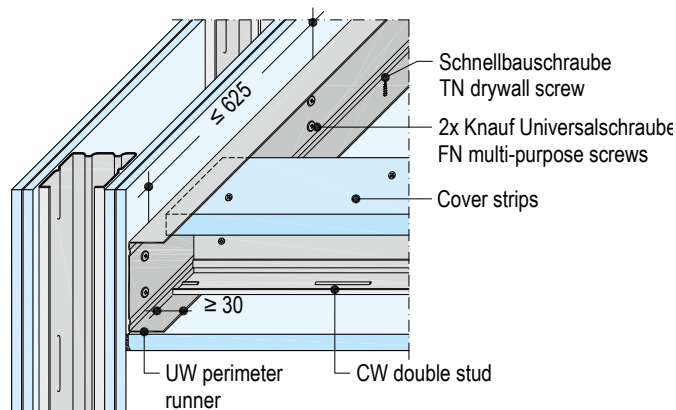
#### plus D131.de Knauf Free-Spanning Ceiling

Fire resistance F30 solely from below



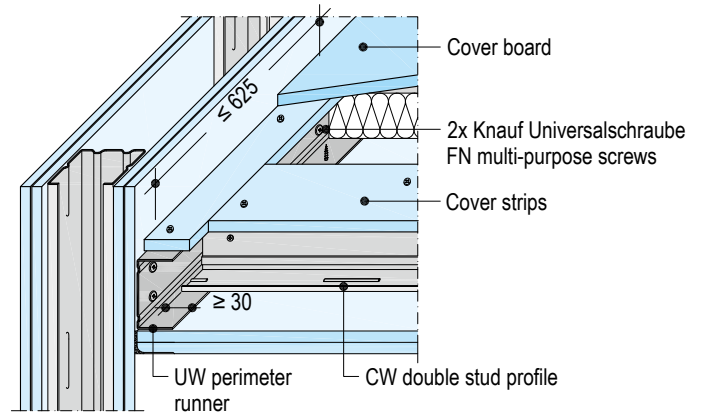
#### plus D131.de Knauf Free-Spanning Ceilings

Fire resistance F30 solely from below and from above



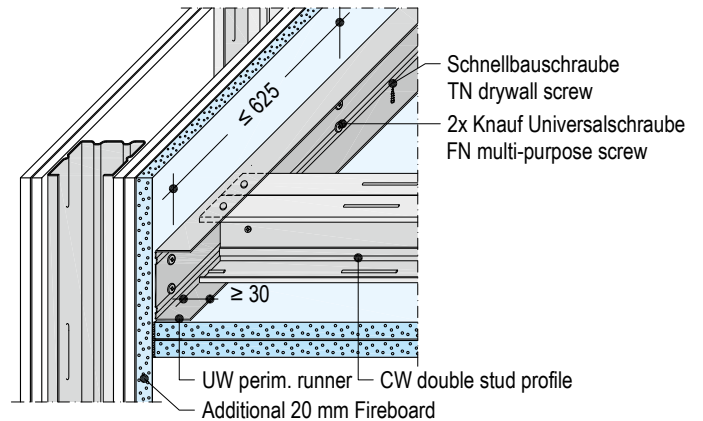
#### plus D131.de Knauf Free-Spanning Ceilings

Fire resistance F60 solely from below / solely from below and from above



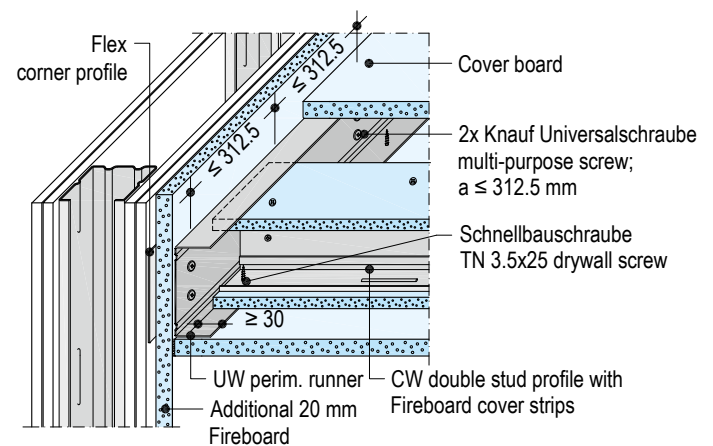
#### plus K219.de Knauf Free-Spanning Fireboard Ceiling A1

Fire resistance F90 solely from below



#### K219.de Knauf Free-Spanning Fireboard Ceiling A1

Fire resistance F90 solely from below and from above



#### Note

For anchoring of connection to wall with furring channel CW, see page 60

#### plus

#### Extension of the fire resistance Certificate of Usability

- Connection to lightweight partition
- Prior consultation in acc. to page 5 is recommended.

### Connection to wall with furring channels UA

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

#### Load-bearing connection to wall

Apply the load-bearing connection to wall using perimeter runners made of UW runners as backing as well as with Knauf Connection Angle or Cubo Connection Bracket. Anchoring acc. to table below.

Insert the UA furring channel into the UW runner and anchor to the wall with Knauf Connection Angle or Knauf Cubo Connection Bracket in accordance with the table below.

#### Structural connection to wall

Apply a structural perimeter connection made of UA Profiles. Max. fastening spacing 625 mm. Fasten to solid walls with fasteners that are suitable for the substrate, on lightweight partitions with multi-purpose screws FN 4.3x65 in every stud of the partition.

### Additional measures with the grid for systems with fire resistance

*System D131.de F30 solely from below and from above*

- The UW perimeter runner must feature a web height that is 25 mm larger than the UA double profile.

*System D131.de F60 solely from below and from above*

- Screw fasten 50 mm wide covering strips made of 12.5 mm Knauf Piano fire-resistant board with drywall screws TB 3.5x25 or 12.5 mm Diamant with Diamant screws XTB 3.9x38 on the UW profile and UA perimeter runner. Distance between screw centres  $\leq$  250 mm. Prefabricated board strips are available.

*System K219.de*

- If the free-spanning ceiling is connected (anchored) to a lightweight partition (F90), an additional,  $\geq$  18 mm thick Knauf Feuerschutzplatte fire-resistant board or Fireboard cladding layer is necessary for the full surface wall partition doubling up on the side of the supporting connection.
- *With fire resistance from above:* Behind the required double layer an additional flexible corner profile for screwing on a Flex Profile (clearance 312.5 mm) of the UW perimeter runner must be installed in the partition construction.

### Connection of the UW perimeter runners of the UA furring channels (backing of the load-bearing connection)

All dimensions in mm

Anchoring substrate	Fasteners for UW perimeter runners	Max. fastening spacing
Metal stud partitions (anchoring in metal studs or Flex Profiles)	1x Knauf multi-purpose screws FN 4.3x35 Cladding thickness $\leq$ 20 mm	625
	1x Knauf multi-purpose screws FN 4.3x65	
Reinforced concrete wall or stable masonry without cavities or light concrete (density $\geq$ 1000 kg/m <sup>3</sup> )	1x Knauf Ceiling Steel Dowels	625
	1x Knauf Nailable Plug L 8/80	

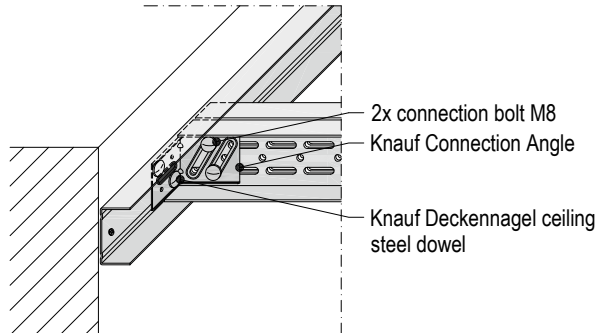
*This profile serves only for fastening as well as backing of the perimeter connection of the cladding and does not have a load-bearing function.*

### Connection of the Knauf Connection Angle or Cubo Connection Bracket to the load-bearing connection

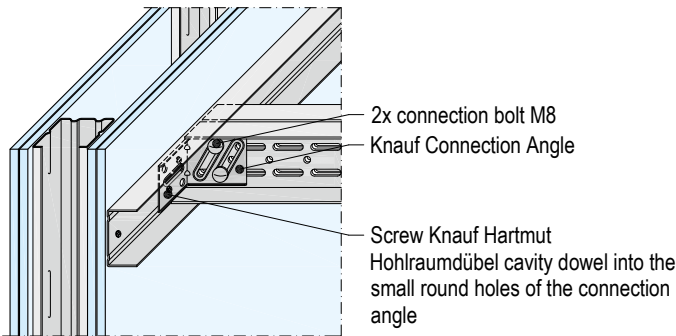
Fastening substrate	Fasteners		Fasteners	
	Knauf Connection Angle with UA 50/75		Knauf Cubo Connection Brackets with UA 100/125/150	
	Furring channel connection	Perimeter profile connection	Furring channel connection	Perimeter profile connection
Metal stud partition				
	2x Knauf Hartmut cavity dowel (cladding thickness $\leq$ 40 mm) Screw fastening through two small circular holes	2x Knauf Hartmut cavity dowel (cladding thickness $\leq$ 40 mm) Screw fastening through two small circular holes	4x Knauf Hartmut cavity dowel (cladding thickness $\leq$ 40 mm) With suitable washer, d = 2 mm, $\varnothing$ 30 mm	2x Knauf Hartmut cavity dowel (cladding thickness $\leq$ 40 mm) With suitable washer, d = 2 mm, $\varnothing$ 30 mm
	or		or	
	2x Knauf multi-purpose screw FN 4.3x65 mm with metal traverse Screw fastening through two small circular holes	2x Knauf multi-purpose screw FN 4.3x65 mm with metal traverse Screw fastening through two small circular holes	4x Knauf multi-purpose screw FN 4.3x65 mm with metal traverse With suitable washer, d = 2 mm, $\varnothing$ 30 mm	2x Knauf multi-purpose screw FN 4.3x65 mm with metal traverse With suitable washer, d = 2 mm, $\varnothing$ 30 mm
Reinforced concrete wall				
	2x Knauf Ceiling Steel Dowels	2x Knauf Ceiling Steel Dowels	4x Knauf Ceiling Steel Dowels With suitable washer, d = 2 mm, $\varnothing$ 30 mm	2x Knauf Ceiling Steel Dowels With suitable washer, d = 2 mm, $\varnothing$ 30 mm
Other substrate	Non-combustible fasteners suitable for the substrate featuring a minimum load-bearing capacity of 0.5 kN against shear and withdrawal. Observe the manufacturer's specifications.			

**Connection to wall with furring channels UA 50/75 with Knauf Connection Angle**

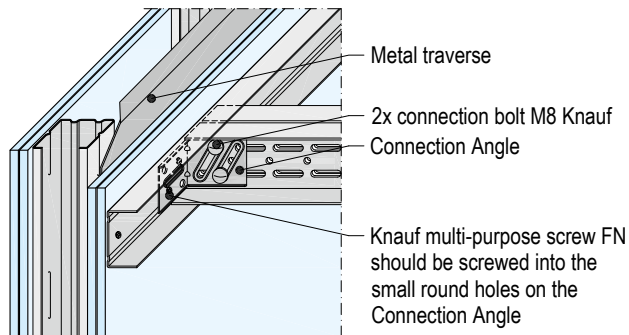
**Connection to solid wall**



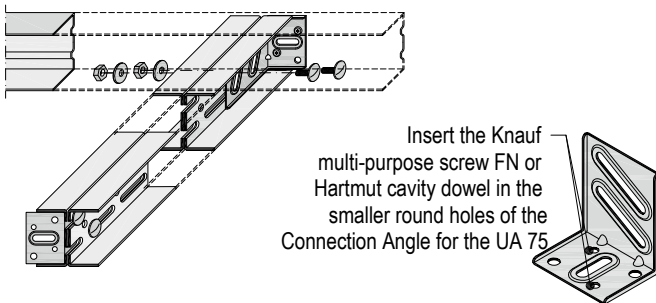
**Connection to metal stud partition with Knauf Hartmut cavity dowel**



**Connection to metal stud partition with metal traverse**

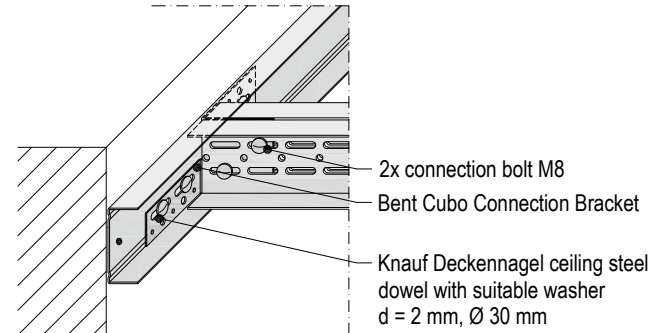


- Install Knauf Connection Angle staggered on UA double profile

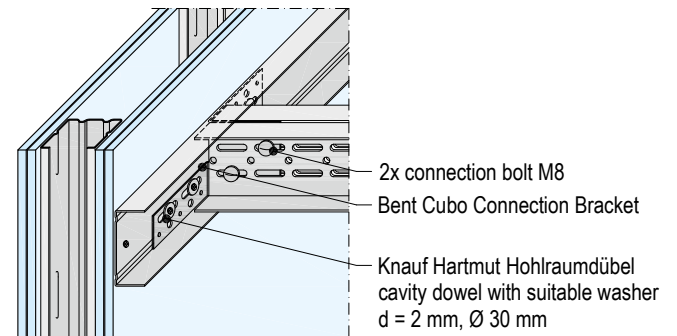


**Connection to wall with furring channels UA 100/125/150 with Knauf Cubo Connection Bracket**

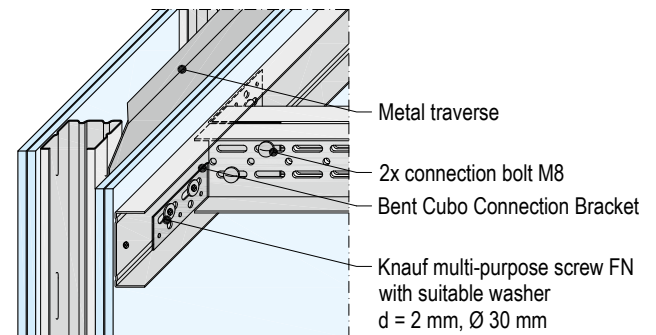
**Connection to solid wall**



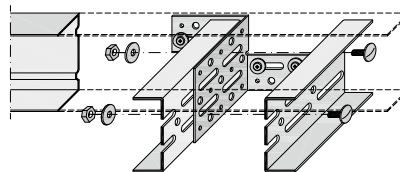
**Connection to metal stud partition with Knauf Hartmut cavity dowel**



**Connection to metal stud partition with metal traverse**



- Install the bent Knauf Cubo Connection Bracket between the UA profiles



**Notes**

Attach the UW profile using suitable fasteners  $\leq 625$  mm (e.g. ceiling steel dowels or multi-purpose screws FN). This profile serves only for fastening the cladding and does not have a load-bearing function.

For anchoring of connection to wall with furring channel UA, see page 62.

Shown without covering strips.

### Insulation layer

Lay insulation material required for sound insulation and fire resistance purposes to the full surface and butt jointed between the furring channels (on the cladding).

### Top side covering layer

*System D131.de F60 solely from below and from above*

Apply a loose top covering layer on the double profiles made of Knauf Piano fire-resistant board 12.5 mm or Diamant and overlap the longitudinal joints by at least 50 mm. Arrange the front edge joints at the centre of the double profiles.

*System K219.de F90 solely from below and from above*

- Apply a loose top covering layer made of double profiles made of Fireboard 20 mm with tight joints.

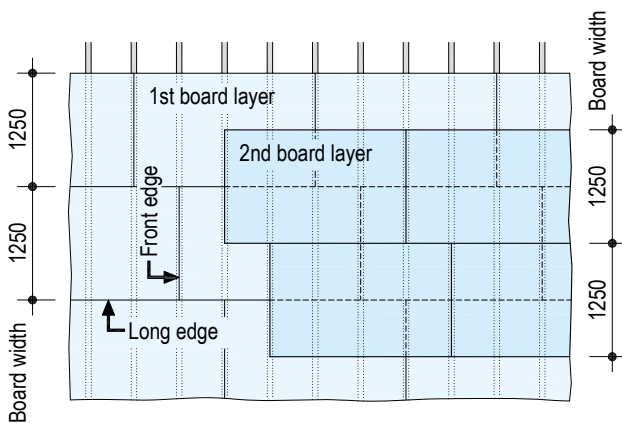
### Cladding installation

- Commence with the fixing of the boards in the board centre or on the board corner to avoid buckling.
- Every board layer should be pushed firmly onto the grid and attached as an independent layer.

### Installation schemes

#### Knauf boards – lateral cladding application

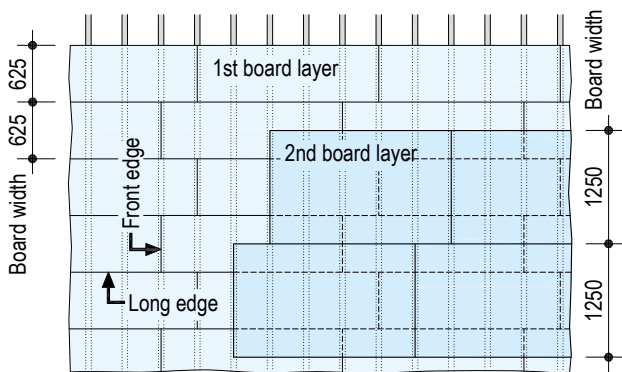
Scheme drawings | All dimensions in mm



#### Board width

- 1st layer: **1250 mm** e.g. Knauf Piano fire-resistant board GKF 12.5
- 2nd layer: **1250 mm** e.g. Knauf Piano fire-resistant board GKF 12.5

- Apply Knauf boards lateral to the furring channels (e.g. double profiles).
- Arrange the board joints on the furring channels (stagger by at least 400 mm, with fire resistance class F60 min. 1000 mm within a layer and min. 500 mm between the first and second layer).
- Stagger the front edge joints between board layers.
- Stagger the long joints between the board layers by at least half a board width.

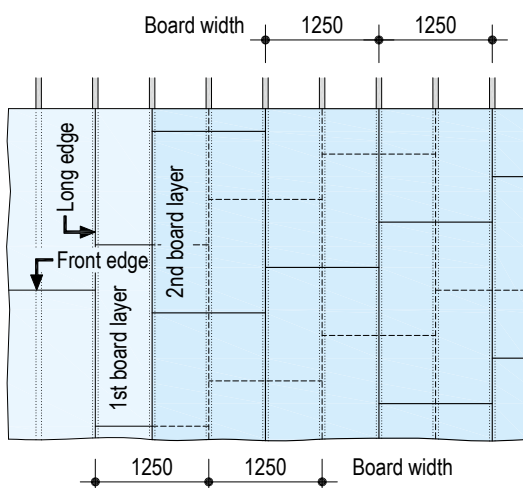


#### Board width

- 1st layer: **625 mm** e.g. Silentboard GKF 12.5
- 2nd layer: **1250 mm** e.g. Diamant GKF 12.5

- Apply Knauf boards lateral to the furring channels (e.g. double profiles).
- Arrange the board joints on the furring channels (stagger by at least 400 mm).
- Stagger the front edge joints between board layers.
- Stagger the long joints between the board layers by at least half a board width to the 1st layer

#### Knauf Fireboard – parallel cladding



#### Board width

- 1st layer: **1250 mm** Fireboard 20
- 2nd layer: **1250 mm** Fireboard 20

- Apply Fireboard longitudinally to the furring channel profiles (e.g. double profiles).
- Arrange the long edge joints on the furring channel.
- Stagger the board joints by at least 400 mm.
- Long edge joints between the board layers must be staggered by a half board width between the furring channel profiles.
- Stagger the front edge joints between board layers.



### Fastening of the cladding

Cladding Thickness in mm	Metal stud frame (penetration ≥ 10 mm) Metal gauge $s \leq 0.7$ mm		Metal gauge $0.7$ mm $< s \leq 2.25$ mm	
	Drywall Screws TN	Diamant screws XTN	Drywall Screws Drywalling TB	Diamant screws XTB
12.5	TN 3.5x25	XTN 3.9x23	TB 3.5x25	XTN 3.9x38
15	–	XTN 3.9x33	–	XTN 3.9x38
18	TN 3.5x35	XTN 3.9x33	TN 3.5x35	XTN 3.9x38
25	TN 3.5x35	–	TB 3.5x45	–
2x 12.5	TN 3.5x25 + TN 3.5x35	XTN 3.9x23 + XTN 3.9x38	TB 3.5x25 + TB 3.5x45	XTB 3.9x38 + XTB 3.9x55
20	TN 3.5x45	–	TB 3.5x45	–
2x 20	TN 3.5x35 + TN 3.5x55	–	TB 3.5x35 + TB 3.5x55	–

Always use Diamant Screws when cladding Diamant or Silentboard.

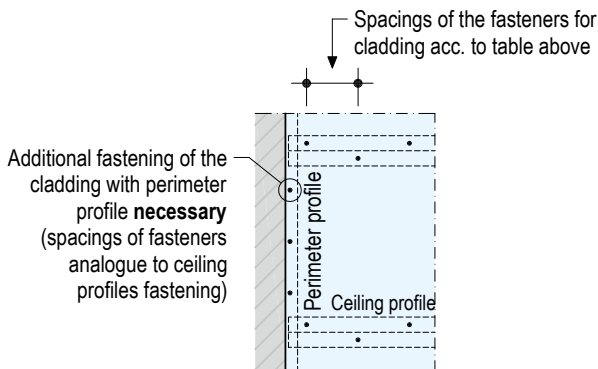
### Maximum fastener spacings $x$ – Knauf board cladding

All dimensions in mm

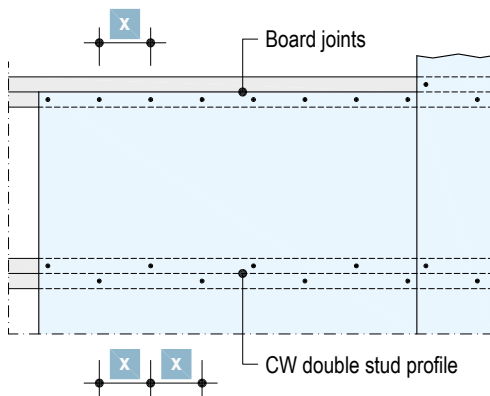
Cladding	1st layer		2nd layer	
	Board width 1250	Board width 625	Board width 1250	Board width 625
1-layer	170	150	–	–
2-layer	500 <sup>1)</sup>	300 <sup>1)</sup>	170	150

1) Fasten the second board layer within a working day, otherwise the spacing for fastening of single layer cladding must be used.

### Additional screw fastening of the perimeter Scheme drawing



### Knauf Fireboard – parallel cladding



■ Screw fasten the Knauf Fireboards staggered in the CW/UA double profile.

### 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"<sup>1)</sup>.

With Fireboard, a skim coating of the entire surface with Knauf Fireboard Spachtel filler is additionally required before application of direct coatings or linings.

#### 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
- Fireboard Spachtel filler: Hand filling of Fireboard *with* Fibre Glass Joint Tape

#### Suitable finish filling compounds

- Q2, application by hand: Uniflott, Uniflott imprägniert, Readygips, Fill & Finish or SuperFinish
- Q3/Q4, application by hand: Readygips, SuperFinish, Fill & Finish or ProSpray Light
- Q3/Q4, machine application: Readygips, ProSpray Light
- Fireboard Spachtel filler for full surface skimming of Fireboard

#### Filling of the gypsum boards

- 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 provide technical fire resistance and sound insulation properties as well as the structural properties!
- *Recommendation:* Front edge and cut edge joints as well as mixed joints (e.g. HRAK + cut edge) of the visible cladding layers filled using Uniflott will require the application of Fugendeckstreifen Kurt joint tape as well.
- Fill in visible screw heads.
- Lightly sand visible surfaces after drying of the filler material, if required.

#### 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 safety.
- Observe code of practice no. 3 "Gipsplattenkonstruktionen - Fugen und Anschlüsse" (German only)<sup>1)</sup>.
- Apply Trenn-Fix when filling joints to adjacent solid construction components.

#### Application temperature / climate

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

Quality levels	Joint implementation Long edges half-rounded tapered edge / half-rounded edge	Joint implementation Front edge bevelled cut edge	Description working steps
Q1			<ul style="list-style-type: none"> <li>■ Fill joints with Uniflott or Uniflott imprägniert</li> <li>■ Fill the visible parts of the fastener</li> </ul>
Q2			<ul style="list-style-type: none"> <li>■ Preliminary jointing in acc. with quality level Q1</li> <li>■ Finish (finish compound) until a smooth transition to the board surface with Uniflott, Uniflott imprägniert, Readygips, Fill &amp; Finish or SuperFinish</li> </ul> <p>No application marks or ridges may remain visible. Sand off the areas concerned if necessary.</p>
Q3			<ul style="list-style-type: none"> <li>■ Jointing in acc. with quality level Q2</li> <li>■ Wide jointing of the joints as well as clean and accurate removal of the remaining board liner filling the pores, e.g. with Readygips, Knauf SuperFinish, Fill &amp; Finish or ProSpray Light</li> </ul> <p>If necessary, i.e. physical ridges and grooves if present are not acceptable and must be sanded.</p>
Q4			<ul style="list-style-type: none"> <li>■ Jointing in acc. with quality level Q2</li> <li>■ Complete surface covering of skim coat with a layer thickness of at least 1 mm, e.g. with Readygips, ProSpray Light.</li> </ul>

1) "Building Site Conditions" issued by the Industriegruppe Gipsplatten im Bundesverband der Gipsindustrie e.V.

### Surface treatment

For direct application of a coarse texture wallpaper, the surface must at least have quality level Q2.

For direct application of a textured paint coat, the surface must at least have quality level Q3.

With Fireboard, the surface must be completely filled in both cases, e.g. with Fireboard-Spachtel filler.

#### Pretreatment

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

Ensure that the primer and the coating / paint / lining are compatible.

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.

### Suitable coatings and linings

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

- Wallpapers
  - Paper, fleece, textile and synthetic wallpapers:
    - Use only adhesives made of methyl cellulose according to Code of Practice no. 16 "Technische Richtlinien für Tapezier- und Klebearbeiten" released by the Bundesausschuss Farbe und Sachwertschutz.
- Plasters
  - Top coats (e.g. Noblo, Diamant Spritzputz spray plaster, Rotkalk Filz)
  - Full surface plaster (e.g. Knauf Readygips, Multi-Finish).

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.),
  - Multicoloured (rainbow) emulsion
  - Silicate-based emulsion paints with suitable primer.

#### Unsuitable coatings and linings

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

#### Notes

Gypsum board surfaces that have constantly been exposed to light without any protection can cause yellowing after coating. 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, such as Knauf Sperrgrund barrier coating.

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

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

### Material requirement per m<sup>2</sup> ceiling without allowance for loss and waste

Description	Unit	Amount as average value				
		1	2	3	4	5
<b>Connection to wall with furring channel CW</b>						
Knauf UW runner	m	0.8	0.8	0.8	0.8	0.8
Suitable fastener material, e.g.						
Knauf Multi-purpose screw 2x FN with metal stud partition	pcs.	2.7	2.7	2.7	2.7	2.7
Alternative Knauf Deckennagel ceiling steel dowel with reinforced concrete	pcs.	2.8	2.8	2.8	2.8	2.8
Knauf CW profile	m	0.2	0.2	0.2	0.2	0.2
Suitable fastener material, e.g.						
Knauf Multi-purpose screw FN with metal stud partition	pcs.	as req.	as req.	as req.	as req.	as req.
Alternative Knauf Deckennagel ceiling steel dowel with reinforced concrete	pcs.	as req.	as req.	as req.	as req.	as req.
Covering strips 50 mm wide: Knauf Piano fire-resistant board or Diamant; 12.5 mm	m <sup>2</sup>	–	–	–	–	0.05
<b>Connection to wall with furring channel UA</b>						
Knauf UW runner	m	0.8	0.8	0.8	0.8	0.8
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	1.4	1.4	1.4	1.4	1.4
Knauf Connection Angle with UA 50/75	pcs.	1.5	1.9	1.5	1.2	1.5
Connection bolt M8,	pcs.	3.0	3.8	3.0	2.4	3.0
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	3.0	3.8	3.0	2.4	3.0
Alternative Knauf Cubo connection brackets with UA 100/125/150	pcs.	1.5	1.9	1.5	1.4	1.5
Connection bolt M8,	pcs.	3.0	3.8	3.0	2.4	3.0
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	6.0	7.6	6.0	4.8	6.0
Knauf UA profile	m	0.2	0.2	0.2	0.2	0.2
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	as req.	as req.	as req.	as req.	as req.
Knauf Connection Angle with UA 50/75	pcs.	0.2	0.2	0.2	0.2	0.2
Connection bolt M8,	pcs.	0.3	0.3	0.3	0.3	0.3
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	0.3	0.3	0.3	0.3	0.3
Alternative Knauf Cubo Connection Brackets with UA 100/125/150	pcs.	0.2	0.2	0.2	0.2	0.2
Connection bolt M8,	pcs.	0.3	0.3	0.3	0.3	0.3
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	0.3	0.3	0.3	0.3	0.3
<b>Grid</b>						
Knauf CW single profile	m	1.9	–	–	–	–
Connection of Knauf CW profile with lateral Knauf UW perimeter runner: e.g. steel rivet	pcs.	1.7	–	–	–	–
Alternative Knauf UA single profile	m	1.9	–	–	–	–
Knauf CW double profile	m	–	4.8	3.8	3.0	3.8
Knauf Metal Screw LN 3.5x11 mm (Knauf CW profiles screwed at flange)	pcs.	–	4.0	3.0	2.4	3.0
Connection of Knauf CW profile with Knauf UW perimeter runner: e.g. 2x metal rivets	pcs.	–	4.0	3.2	2.6	–
Alternative Knauf UA double profile	m	–	4.8	3.8	3.0	3.8
Bolts M8 (Knauf UA profiles screwed at flange)	pcs.	–	4.0	3.0	2.4	3.0
Covering strips 120 mm wide: Solid Board; 25 mm	m <sup>2</sup>	–	–	–	0.2	–
Covering strips 100 mm wide: Knauf Piano fire-resistant board or Diamant; 12.5 mm	m <sup>2</sup>	–	–	–	–	0.2
Fastening of covering strips: Knauf drywall screws, see pages 58, 59	pcs.	–	–	–	8	13
Insulation layer e.g. Knauf Insulation (observe fire resistance and/or sound insulation)	m <sup>2</sup>	as req.	1.0	1.0	1.0	1.0

**Material requirement per m<sup>2</sup> ceiling without allowance for loss and waste, continued**

Description	Unit	Amount as average value				
		1	2	3	4	5
<b>Knauf boards (select type and thickness to suit the respective systems)</b>						
1st layer	m <sup>2</sup>	1.0	1.0	1.0	1.0	1.0
2nd layer	m <sup>2</sup>	–	1.0	1.0	–	1.0
Cover board: Knauf Piano fire-resistant board or Diamant; 12.5 mm	m <sup>2</sup>	–	–	–	–	1.05
<b>Fastening (Fastening of the boards Knauf fasteners see page 65)</b>						
1st layer	pcs.	19	19	14	17	14
2nd layer	pcs.	–	24	19	–	19
<b>Jointing</b>						
Knauf filling compound, e.g. Uniflott	kg	0.2	0.5	0.4	0.2	0.2
Fugendeckstreifen Kurt joint tape (for front edges)	m	0.35	0.5	0.35	0.35	0.35
Trenn-Fix, 65 mm wide, self-adhesive	m	1.0	1.0	1.0	1.0	1.0
Knauf edge / corner trims; e.g. Kantenschutzprofil edge trim 23/13	m	as req.	as req.	as req.	as req.	as req.
<b>T connection / L connection (see pages 44 to 47)</b>						
Knauf UA profiles	m	as req.	as req.	as req.	as req.	as req.
Knauf UW profiles	m	as req.	as req.	as req.	as req.	as req.
Metal traverse	pcs.	as req.	as req.	as req.	as req.	as req.
Knauf Connection Angle with UA 50/75	pcs.	as req.	as req.	as req.	as req.	as req.
Knauf Cubo Connection Brackets with UA 100/125/150	pcs.	as req.	as req.	as req.	as req.	as req.
Suitable fasteners	pcs.	as req.	as req.	as req.	as req.	as req.

*Legend*

as req. = as required

Material not provided by Knauf = printed in italics

- The amounts refer to a ceiling area of 2.5 m x 10 m = 25 m<sup>2</sup>
- Data without specific building physics requirements

*Legend D131.de*

	1	2	3	4	5
Variant	Without fire resistance	F30 solely from below	F30 solely from below	F30 solely below and from above	F60 solely below and from above
Boards	GKB/GKBI GKF/GKFI	GKF/GKFI	GKF/GKFI	GKF/GKFI	GKF/GKFI
Board thickness	12.5 mm	2x 12.5 mm	2x 12.5 mm	18 mm	2x 12.5 mm + 12.5 mm
Axial spacing of furring channel	500 mm	400 mm	500 mm	625 mm	500 mm

### Material requirement per m<sup>2</sup> ceiling without allowance for loss and waste

Description	Unit	Amount as average value	
		6	7
<b>Connection to wall with furring channel CW</b>			
Knauf UW runner	m	0.8	0.8
Suitable fastener material, e.g.			
Knauf Multi-purpose Screw 2x FN with metal stud partition	pcs.	2.7	5.3
Alternative Knauf Deckennagel ceiling steel dowel with reinforced concrete	pcs.	2.8	3.3
Knauf CW profile	m	0.2	0.2
Suitable fastener material, e.g.			
Knauf Multi-purpose Screw FN with metal stud partition	pcs.	as req.	as req.
Alternative Knauf Deckennagel ceiling steel dowel with reinforced concrete	pcs.	as req.	as req.
<b>Connection to wall with furring channel UA</b>			
Knauf UW runner	m	0.8	0.8
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	1.4	1.4
Knauf Connection Angle with UA 50/75	pcs.	1.2	1.2
Connection bolt M8,	pcs.	2.4	2.4
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	2.4	2.4
Alternative Knauf Cubo Connection Brackets with UA 100/125/150	pcs.	1.2	1.2
Connection bolt M8,	pcs.	2.4	2.4
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	4.8	4.8
Knauf UA profile	m	0.2	0.2
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	as req.	as req.
Knauf Connection Angle with UA 50/75	pcs.	0.2	0.2
Connection bolt M8,	pcs.	0.3	0.3
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	0.3	0.3
Alternative Knauf Cubo connection brackets with UA 100/125/150	pcs.	0.2	0.2
Connection bolt M8,	pcs.	0.3	0.3
Suitable anchors, e.g. Knauf Deckennagel ceiling steel dowels with reinforced concrete	pcs.	0.3	0.3
<b>Grid</b>			
Knauf CW double profile	m	3.0	3.0
Knauf Metal Screw LN 3.5x11 mm (Knauf CW profiles screwed at flange)	pcs.	3.0	3.0
Alternative Knauf UA double profile	m	3.0	3.0
Bolts M8 (Knauf UA profiles screwed at flange)	pcs.	3.0	3.0
Covering strips 120 mm wide: Fireboard 12.5 mm	m <sup>2</sup>	–	0.4
Fastening cover strips - Knauf Schnellbauschrauben drywall screws TN 3.5x25	pcs.	–	15
Insulation layer e.g. Knauf Insulation (observe fire resistance and/or sound insulation)	m <sup>2</sup>	as req.	1.0

**Material requirement per m<sup>2</sup> ceiling without allowance for loss and waste - continued**

Description	Unit	Amount as average value K219.de	
		6	7
<b>Knauf boards</b>			
1st layer	m <sup>2</sup>	1.0	1.0
2nd layer	m <sup>2</sup>	1.0	–
Cover board: Fireboard 20 mm	m <sup>2</sup>	–	1.0
Additional board layer (doubling of layers) Fireboard; 20 mm	m <sup>2</sup>	as required	as required
<b>Fastening</b> (Fastening of the boards – Knauf fasteners page 65)			
1st layer	pcs.	10	18
2nd layer	pcs.	18	–
<b>Jointing</b>			
Knauf Fireboard filler	kg	0.65	0.55
Knauf Fibre glass joint tape	m	1.1	1.1
Trenn-Fix; 65 mm wide, self-adhesive	m	1.0	1.0
Knauf edge/corner trims; e.g. Kantenschutzprofil edge trim 23/13	m	as required	as required
<b>T connection / L connection</b> (see pages 44 to 47)			
Knauf UA profiles	m	as required	as required
Knauf UW profiles	m	as required	as required
Metal traverse	pcs.	as required	as required
Knauf connection angle with UA 50/75	pcs.	as required	as required
Knauf Cubo connection brackets with UA 100/125/150	pcs.	as required	as required
Suitable fasteners	pcs.	as required	as required

*Legend*

as req. = as required

Material not provided by Knauf = printed in italics

■ The amounts refer to a ceiling area of 2.5 m x 10 m = 25 m<sup>2</sup>

■ Data without specific building physics requirements

*Legend K219.de*

	6	7
Variant	F90 solely from below	F90 solely below and from above
Boards	GM-F Fireboard	GM-F Fireboard
Board thickness	2x 20 mm	20 mm + 20 mm
Axial spacing of furring channel	625 mm	625 mm

### Information on sustainability of Knauf

#### Free-Spanning Ceiling systems

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

In Germany, the following certification systems are of particular relevance:

- DGNB System  
German seal of approval for environmentally sustainable building from the DGNB (German association for environmentally sustainable building)
- BNB  
(Bewertungssystem Nachhaltiges Bauen - Quality rating system for environmentally sustainable building)
- LEED  
(Leadership in Energy and Environmental Design).

Knauf products and free-spanning ceiling systems can positively influence many of these criteria.

#### DGNB/BNB

##### *Ecological quality*

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

##### *Economic quality*

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

##### *Sociocultural and functional quality*

- Criterion: Suitability for conversion  
Flexible Knauf Drywalling

##### *Technical quality*

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

#### LEED

##### *Materials and resources*

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

Detailed information on request and online at:

[www.knauf-blue.de](http://www.knauf-blue.de)



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](mailto:knauf-direkt@knauf.de)

▶ [www.knauf.de](http://www.knauf.de)

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