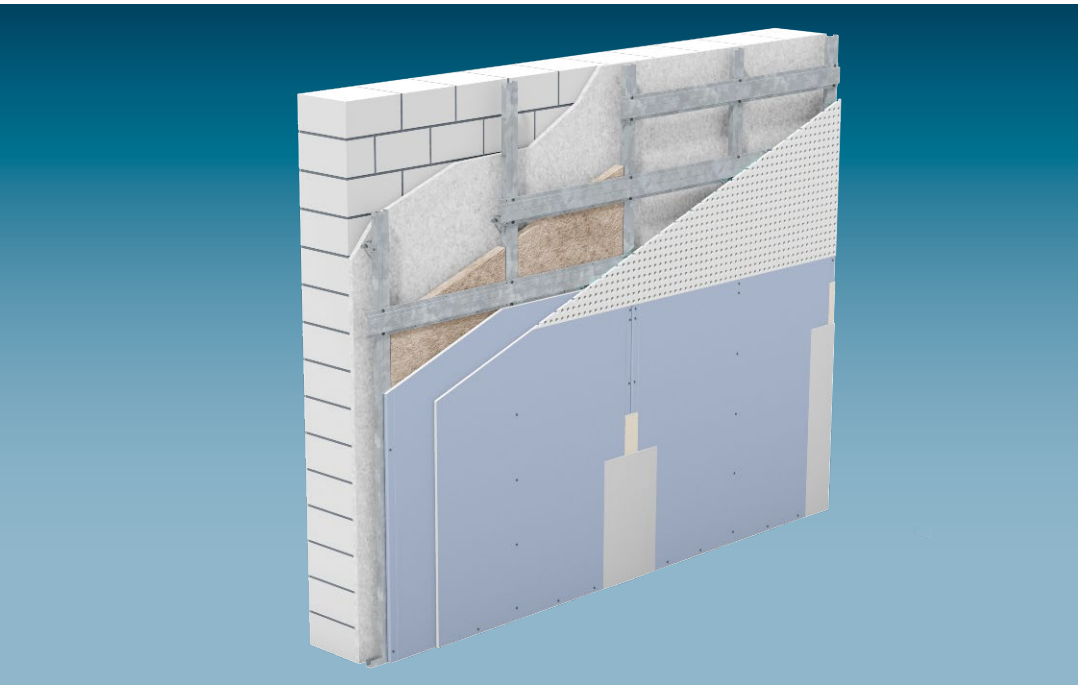
Note on English translation / Hinweise zur englischen Fassung
This is a translation of the Technical Brochure valid in Germany.
All stated details and properties are in compliance with the regulations of the German standards and building regulations. They are only applicable for the specified products, system components, application rules, and construction details in connection with the specifications of the respective certificates and approvals.
Knauf Gips KG denies any liability for applications outside of Germany as this requires changes acc. to the respective national standards and building regulations.



Drywall Systems

AK04.de

Technical Brochure 2018-04

Knauf Cleaneo Acoustic Wall Systems

W112C.de Cleaneo Acoustic Wall
W623C.de Cleaneo Acoustic Wall Lining with board strips
W623D.de Cleaneo Acoustic Wall Lining with Hat-Shaped Channel
W629C.de Cleaneo Acoustic Furring

Contents

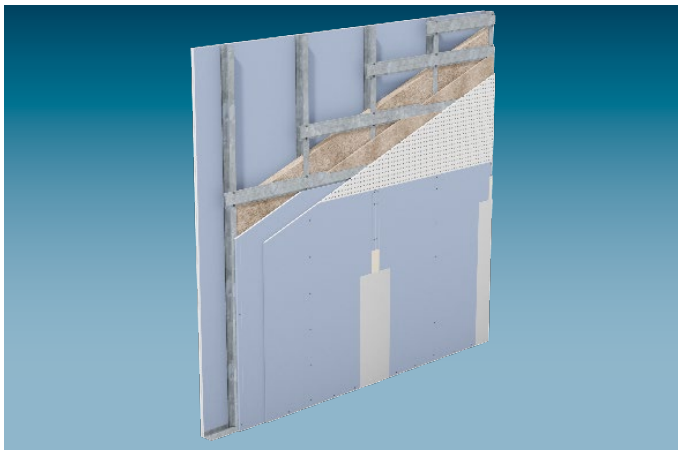
Introduction

System overview

Acoustic wall systems

Cleaneo Acoustic wall systems consist of a metal grid that is clad in areas subject to impacts with robust Diamant boards and in the absorber area with Cleaneo Classic to improve the room acoustical quality.

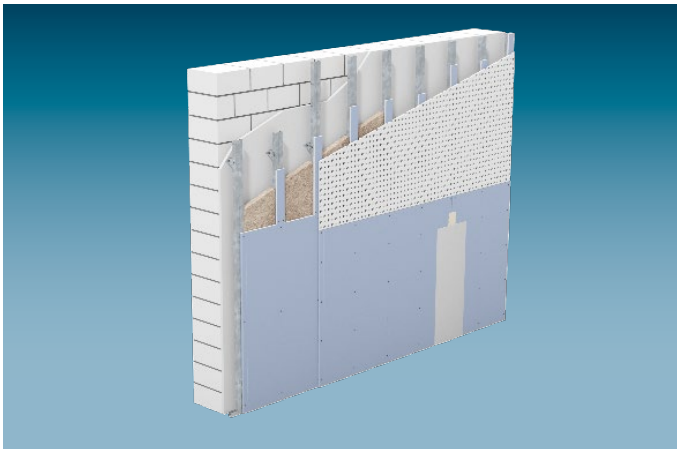
W112C.de Cleaneo Acoustic Wall



The Cleaneo Acoustic Wall **W112C.de** is an absorber partition implemented as a hybrid construction that meets the sound insulation requirements while improving the acoustic quality of the room thanks to its sound absorbing properties.
The metal stud partition system W112C.de is clad on one side with two layers of Diamant GKFI, and on the other side in the upper area with Cleaneo Classic as well as two layers of Diamant GKFI in the lower area.

- Stud spacing ≤ 625 mm
- Partition height up to 4.00 m
- Ball impact safety possible

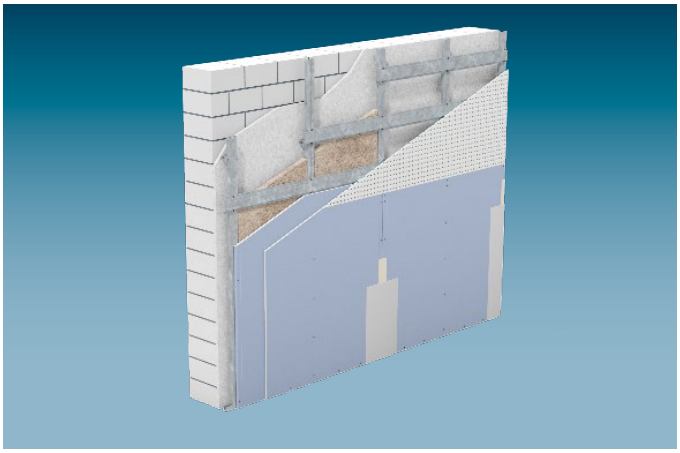
W623C.de Cleaneo Acoustic Wall Lining with board strips



The Cleaneo Acoustic Wall Lining with board strips **W623C.de** is implemented with a grid made of sheet metal profiles CD 60/27, that are fixed to the basic wall with Universal Brackets. Thus a slim construction method is assured. The cladding in the Cleaneo Classic area is backed on the studs with additional Diamant board strips. In the non-perforated area two layers of Diamant GKFI 12.5 are to be applied.

- Stud spacing ≤ 312.5 mm
- Partition height up to 10.00 m
- Ball impact safety possible

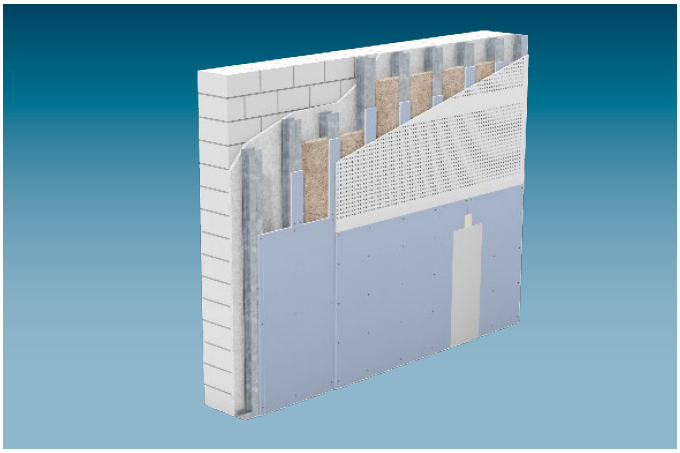
W623D.de Knauf Cleaneo Acoustic Wall Lining with Hat-Shaped Channel



The Cleaneo Acoustic Wall Lining with Hat-Shaped Channel **W623D.de** is implemented with a grid made of sheet metal profiles CD 60/27, that are fixed to the basic wall with Universal Brackets. Thus a slim construction method is assured. The cladding in the Cleaneo Classic area is backed with additional Hat-shaped channels. In the non-perforated area two cladding layers of Diamant GKFI (15 + 12.5) to be applied.

- Stud spacing ≤ 625 mm
- Partition height up to 10.00 m
- Ball impact safety possible

W629C.de Cleaneo Acoustic Furring

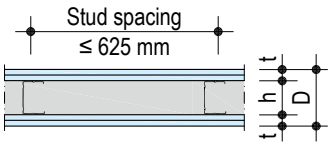
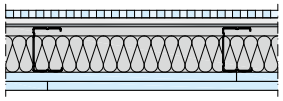
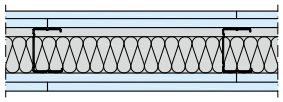


The Cleaneo Acoustic Furring **W629C.de** is implemented with a grid made of CW sheet metal studs as a double stud frame as a free-detached arrangement in front of the basic wall. Due to the free-detached arrangement there is no dependence on the strength of the basic wall. The cladding in the Cleaneo Classic area is backed on the studs with additional Diamant board strips. In the non-perforated area two layers of Diamant GKFI 12.5 are to be applied.

- Stud spacing ≤ 312.5 mm
- Partition height up to 6.50 m
- Ball impact safety possible

Data for planning

System variants

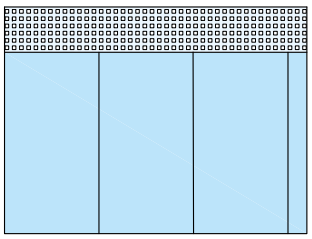
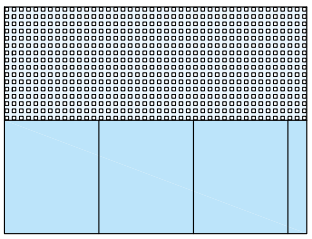
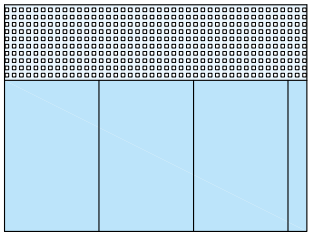
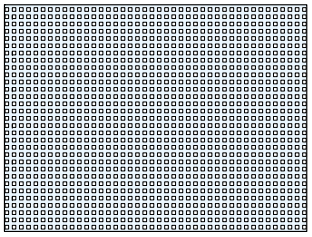
Knauf system	Fire resistance class	Cladding Partition side 1			Partition side 2		Weight	Wall thickness	Knauf profiles	Perf. ratio	Sound insulation		
Scheme drawings 		Cleaneo Classic	Diamant	Min. thickness t mm	Diamant	Min. thickness t mm	Without insulation layer approx. kg/m²	D mm	Cavity h mm	Cleaneo Classic 12/25 Q %	Knauf CW stud R_w dB	$R_{w,R}$ dB	Insulation layer min. thickness mm
W112C.de Cleaneo Acoustic Wall													Single metal stud frame – double-layer cladding
Perforated area Partition side 1  Partition side 2	F30	•		12.5	•	2x 15	59	132.5	CW 75 + Hat-Shaped Channel 98/15	0	61.3	59	60 mm [1] Partition cavity + 20 mm [2] Hat-Shaped Channel cavity
										20	56.7	54	
										33	55.2	53	
Non-perforated area Partition side 1  Partition side 2			•	15 + 12.5	•	2x 15			CW 75	50	53.8	51	
										100	50.6	48	

1) *Insulation layer G (mineral wool insulation layer acc. to DIN EN 13162, building material class A), airflow resistivity acc. to DIN EN 29053; r ≥ 5 kPa s/m², insulation layer fill level 80 %; e.g. Knauf Insulation Trennwand-Dämmplatte TI 140 T*

2) *Insulation layer G (mineral wool insulation layer acc. to DIN EN 13162, building material class A), airflow resistivity acc. to DIN EN 29053; r ≥ 10 kPa s/m²; e.g. Knauf Insulation Trennwand-Dämmplatte TP 120 A*

- The perforated surface of the absorber partition can be implemented with all common perforations without a negative effect on the sound insulation, as the tested partition has been measured with respect to unfavourable sound insulation perforation design (12/25 Q, perforation ratio 23 %).
- Specified weights apply for 33 % perforated (12/25 Q, 12.5 mm) and 67 % non-perforated surface share (absorber side)

Surface share of perforated area Cleaneo Classic 12/25 Q

	20 % share of the surface Cleaneo Classic		50 % share of the surface Cleaneo Classic
	33 % share of the surface Cleaneo Classic		100 % share of the surface Cleaneo Classic

Extension of the fire resistance Certificate of Usability

- Due to construction design with additional grid or board lining Prior consultation in acc. to page 43 is recommended.

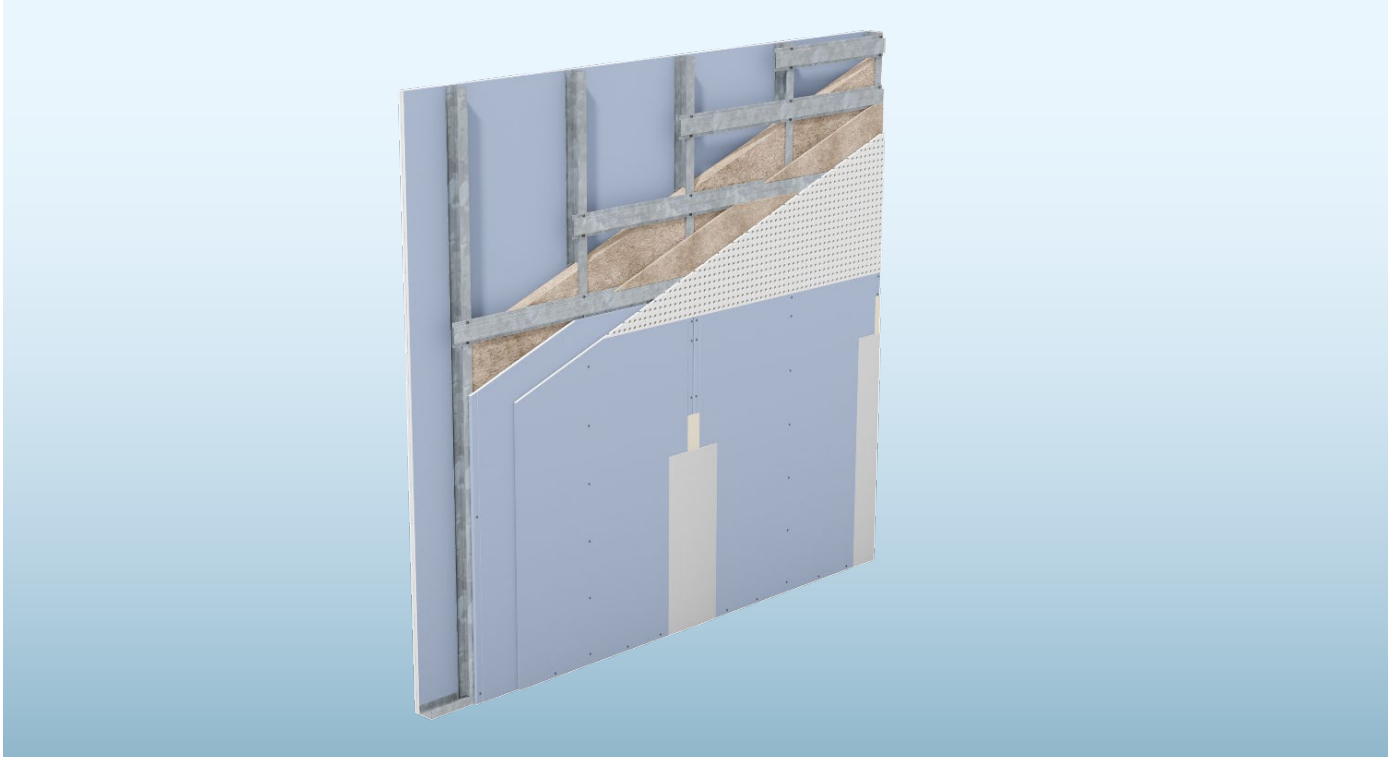
Notes

Observe the notes on page 42.

For further information on planning and design see Technical Brochures

- Room Acoustics with Knauf
  - Basics and Concepts AK01.de
  - Data for Planning AK02.de

Wall heights



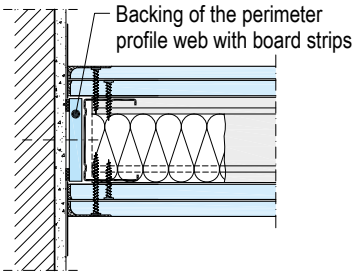
Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile Metal gauge 0.6 mm	Stud spacing **a** mm	Axial spacing Hat-Shaped Channel mm	Maximum partition height W112C.de Double-layer m
CW 75	625	≤ 333	4.00

With wall height > 3.00 m and demands on the fire resistance, backing of the CW perimeter connection profile on the web side is required.

Connection to the perimeter



Ball impact safety

Ball impact safety acc. to DIN 18032-2 (without built-ins)

Proof: 903 1260 000-7/Man/Sgm

Grid and cladding see design example page 30

Extension of the fire resistance Certificate of Usability

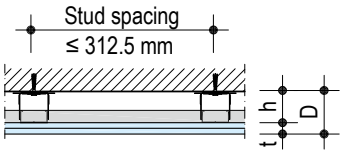
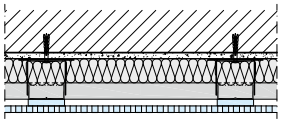
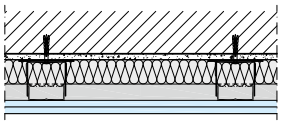
■ Due to construction design with additional grid or board lining

Prior consultation in acc. to page 43 is recommended.

Note	To provide the best possible protection against vandalism, it is recommended that the perforated area is applied only above a height of 2.00 m.

W623C.de Knauf Cleaneo Acoustic Wall Lining with board strips

System variants

Knauf system	Cladding			Weight	Minimum thickness	Knauf profile	Cavity	Insulation layer
Scheme drawings 	Cleaneo Classic	Diamant	Minimum thickness **t** mm	Without insulation layer approx. kg/m²	**D** mm		**h** mm	G mm
W623C.de Cleaneo Acoustic Wall Lining with board strips						Metal grid CD 60/27, directly anchored with Universal Brackets		
Perforated area 	•	•	**12.5** + **12.5** Board strips	25	≥ 65	CD 60/27	≥ 40	≥ 30
Non-perforated area 		•	**2x 12.5**					

Specified weights apply for 33 % perforated (12/25 Q, 12.5 mm) and 67 % non-perforated surface share

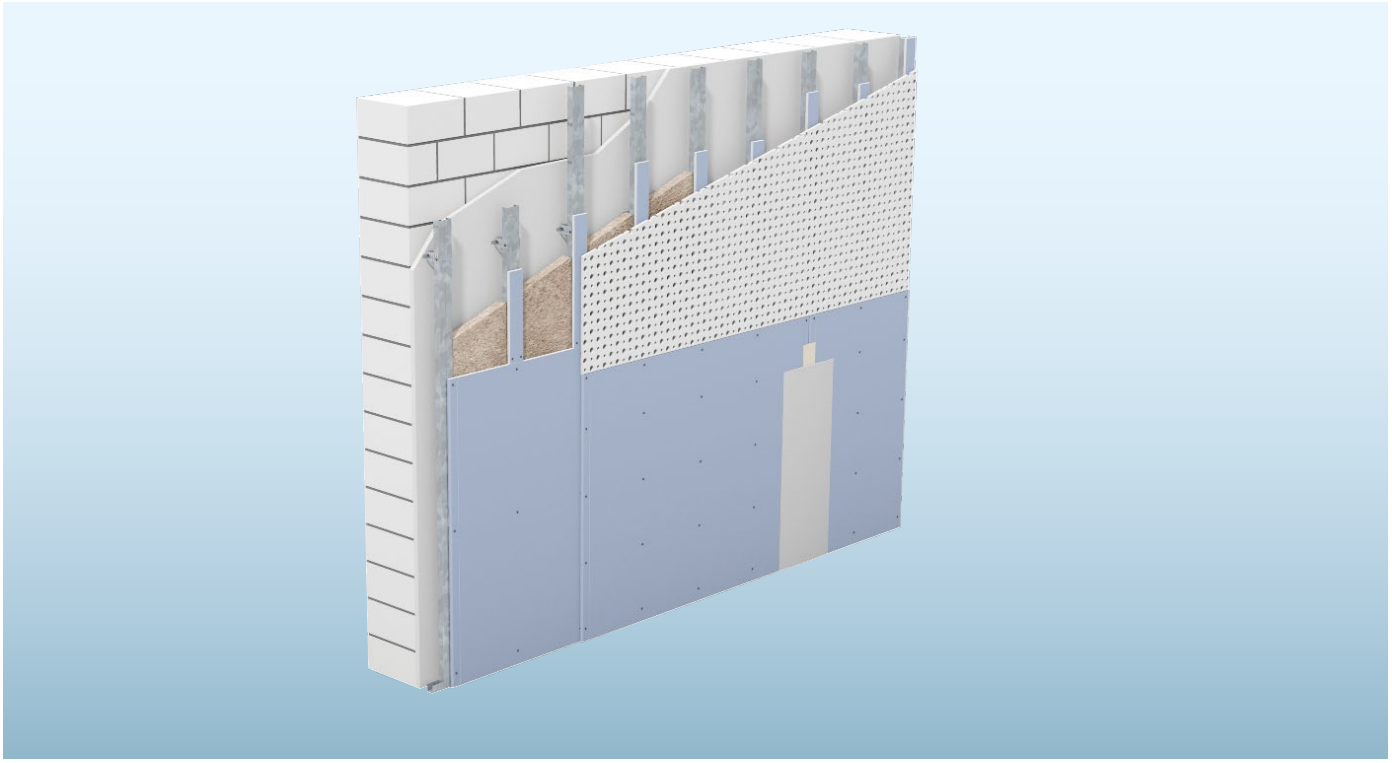
Notes

Observe the notes on page 42.

For further information on planning and design see Technical Brochures

- Room Acoustics with Knauf
  - Basics and Concepts AK01.de
  - Data for Planning AK02.de

Wall heights



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile Metal gauge 0.6 mm	Stud spacing a mm	Maximum partition height W623C.de Double-layer m
CD 60/27	312.5	10.00

- Use Universal Bracket 120 mm
- Maximum partition cavity 140 mm

Ball impact safety

Ball impact safety acc. to DIN 18032-2 (without built-ins)

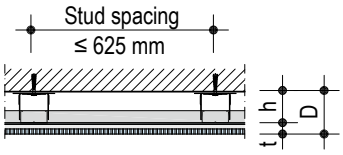
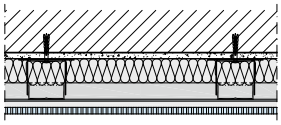
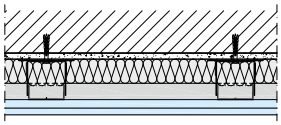
Proof: 903 1260 000-7/Man/Sgm

Grid and cladding see design example page 30

Note	To provide the best possible protection against vandalism, it is recommended that the perforated area is applied only above a height of 2.00 m.

W623D.de Knauf Cleaneo Acoustic Wall Lining with Hat-Shaped Channel

System variants

Knauf system	Cladding			Weight	Minimum thickness	Knauf profile	Cavity	Insulation layer
Scheme drawings 	Cleaneo Classic	Diamant	Minimum thickness **t** mm	Without insulation layer approx. kg/m²	**D** mm		**h** mm	G mm
W623D.de Cleaneo Acoustic Wall Lining with Hat-Shaped Channel Strips						Metal grid CD 60/27, directly anchored with Universal Brackets		
Perforated area 	•		**12.5**	26	≥ 67.5	CD 60/27 + Hat-shaped channel 98/15	≥ 40	≥ 30
Non-perforated area 		•	**15 + 12.5**			CD 60/27		

Specified weights apply for 33 % perforated (12/25 Q, 12.5 mm) and 67 % non-perforated surface share

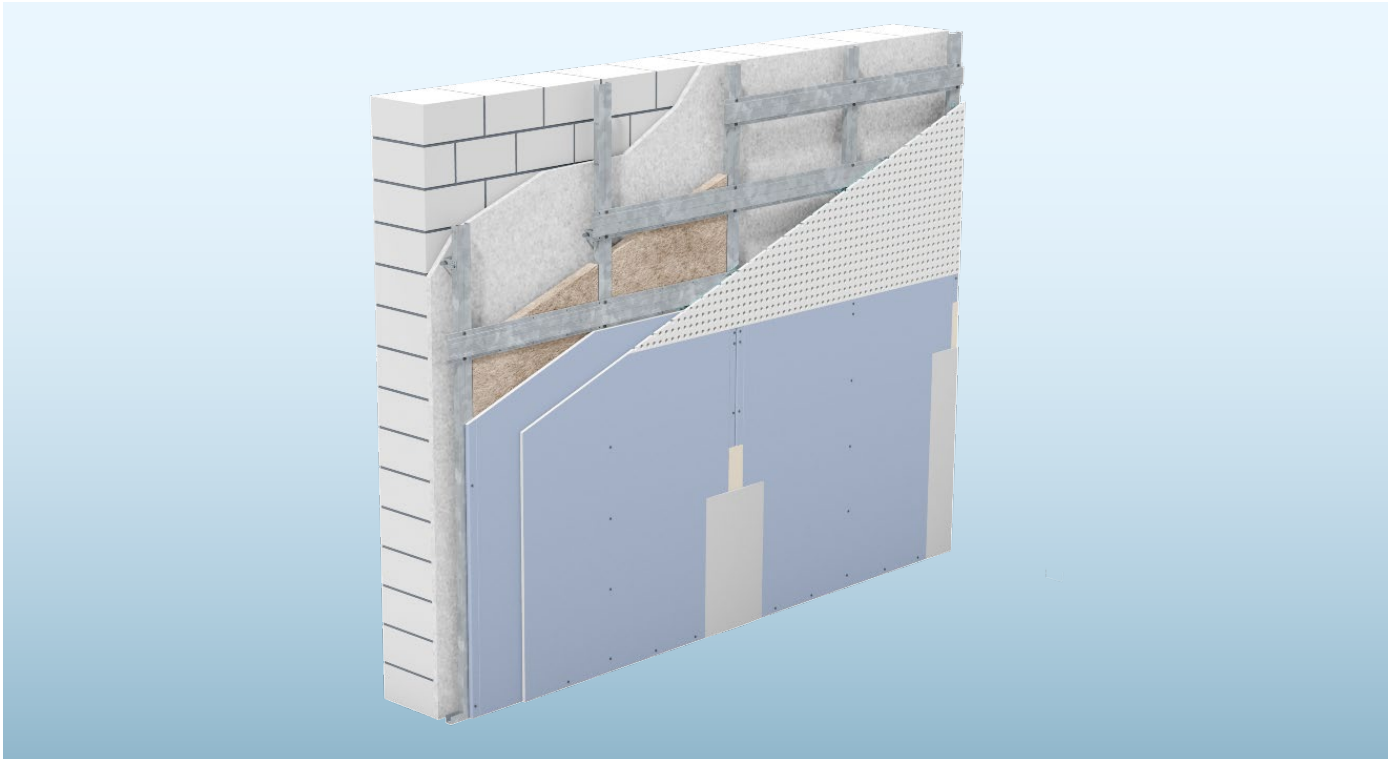
Notes

Observe the notes on page 42.

For further information on planning and design see Technical Brochures

- Room Acoustics with Knauf
  - Basics and Concepts AK01.de
  - Data for Planning AK02.de

Wall heights



Maximum permissible wall heights Installation zones 1 and 2

Knauf profile Metal gauge 0.6 mm	Stud spacing a mm	Axial spacing Hat-shaped channel mm	Maximum partition height W623D.de Double-layer m
CD 60/27	625	≤ 333	10.00

- Use Universal Bracket 120 mm
- Maximum partition cavity 140 mm

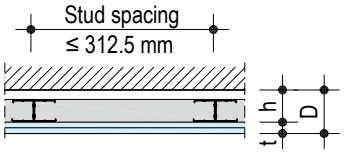
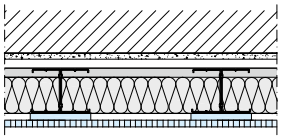
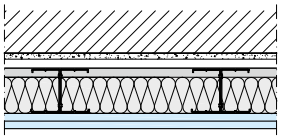
Ball impact safety

Ball impact safety acc. to DIN 18032-2 (without built-ins)
Proof: 903 1260 000-7/Man/Sgm
Grid and cladding see design example page 31

Note	To provide the best possible protection against vandalism, it is recommended that the perforated area is applied only above a height of 2.00 m.

W629C.de Cleaneo Acoustic Furring

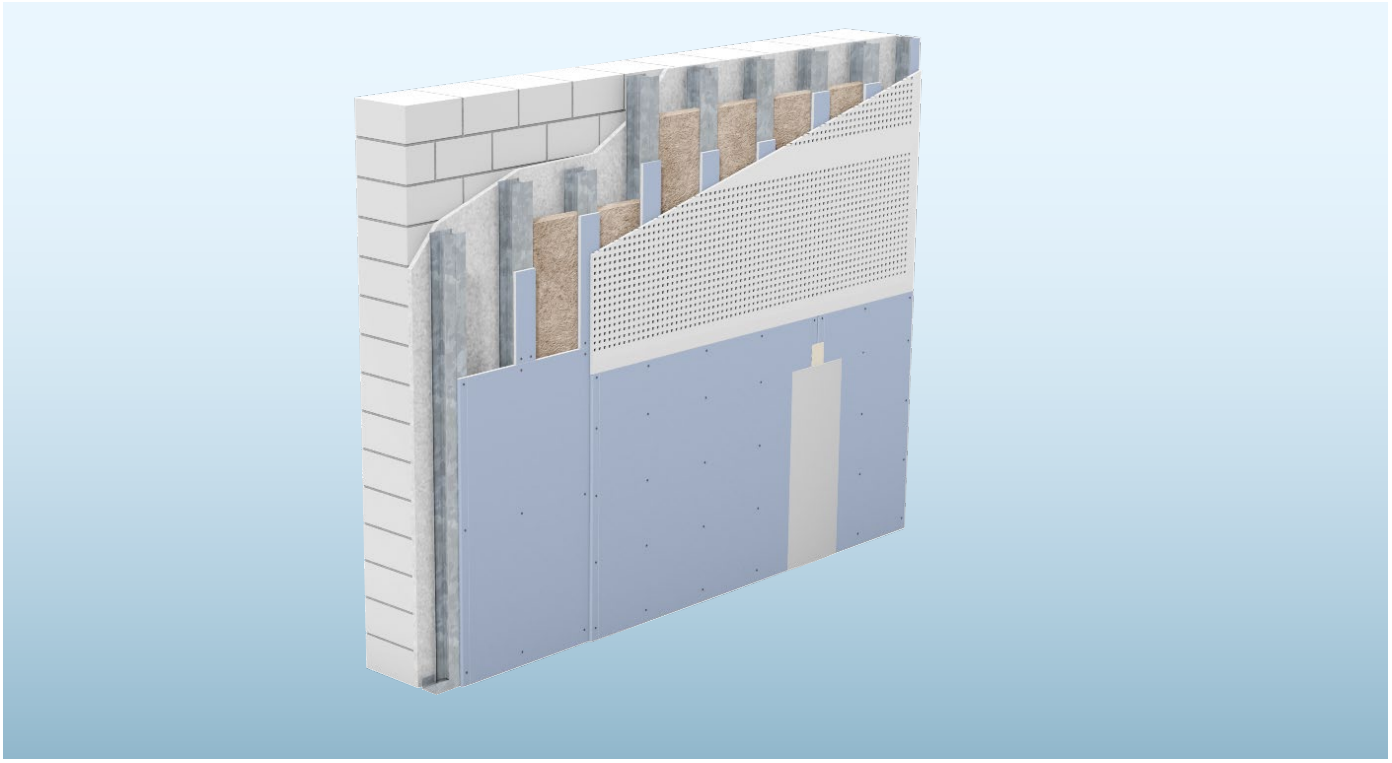
System variants

Knauf system	Cladding			Weight	Minimum thickness	Knauf profile	Cavity	Insulation layer (G)
Scheme drawings 	Cleaneo Classic	Diamant	Minimum thickness t mm	Without insulation layer approx. kg/m²	D mm		h mm	mm
W629C.de Cleaneo Acoustic Furring						Single metal stud frame with CW double profiles		
Perforated area 	•	•	**12.5** + **12.5** Board strips	28	≥ 85	CW 50	≥ 60	40
					≥ 110	CW 75	≥ 85	60
Non-perforated area 		•	**2x 12.5**		≥ 135	CW 100	≥ 110	80

Specified weights apply for 33 % perforated (12/25 Q, 12.5 mm) and 67 % non-perforated surface share

Notes	
	Observe the notes on page 42. For further information on planning and design see Technical Brochures ■ Room Acoustics with Knauf ▪ Basics and Concepts AK01.de ▪ Data for Planning AK02.de

Wall heights



Maximum permissible wall heights

Installation zones 1 and 2

Knauf profile Metal gauge 0.6 mm	Stud spacing a mm	Maximum partition height W629C.de Double-layer m
2x CW 50	312.5	4.00
2x CW 75		4.90
2x CW 100		6.50

Ball impact safety

Ball impact safety acc. to DIN 18032-2 (without built-ins)

Proof: 903 1260 000-7/Man/Sgm

Grid and cladding see design example page 31

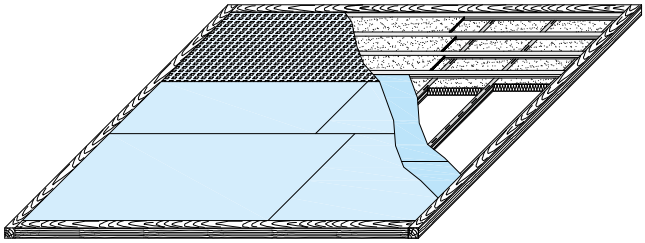
Note	To provide the best possible protection against vandalism, it is recommended that the perforated area is applied only above a height of 2.00 m.

Sound absorbing properties of the absorber partition

Acoustic wall systems

The measured test specimen consists of both a perforated area and a non-perforated area. For extensive test specimens, the specification of the frequency-dependent, practical sound absorption coefficient according to DIN EN ISO 354 is intended. The acoustically effective surface is not just limited to the perforated section of the absorber wall. The partition cavity underneath the perforation as well as underneath the non-perforated section influence the acoustic effectiveness to a degree which cannot be precisely determined. For this reason, the equivalent sound absorption surface with respect to the entire test specimen (12 m²), as well as to the weighted sound absorption coefficient are specified with respect to the perforated area share.

Test configuration



Horizontal construction (length 4.00 m / width 3.00 m)

Non-perforated area

- CW 75 stud, stud spacing ≤ 625 mm
- 60 mm mineral wool insulation layer acc. to EN 13162; length-related flow resistance acc. to EN 29053 r ≥ 5 kPa s/m²
- 1st layer 15 mm Diamant
- 2nd layer 12.5 mm Diamant

Perforated area

- CW 75 stud, stud spacing ≤ 625 mm
- 60 mm mineral wool insulation layer acc. to EN 13162; length-related flow resistance acc. to EN 29053 r ≥ 5 kPa s/m²
- Hat-shaped channel 98/15, axial spacing ≤ 333 mm
- 20 mm mineral wool insulation layer acc. to EN 13162; length-related flow resistance acc. to EN 29053 r ≥ 10 kPa s/m²
- Cleaneo Classic
  Acoustic absorption: 8/18 R, 10/23 R, 12/25 R, 8/18 Q, 12/25 Q
  Measurement airborne sound reduction index: 12/25 Q (worst case)

The exact procedure for determining the acoustic effectiveness is laid out on test report A 010-05.14 and can be requested from the Technical Advisory Service at Knauf Gips KG.

Definitions

Definitions of the sound absorption coefficients following EN ISO 11654

The building materials and substances used in a room can be sound reflective from an acoustical point of view, so that they have no or very low sound absorbing characteristics. In this case the rated sound absorption coefficient α_w is practically 0.

In contrast, there are materials that are highly sound absorbing. Should 100 % of the impinging sound energy be absorbed, i.e. the sound energy is fully converted to heat energy, the rated sound absorption coefficient α_w is practically 1.

α_p are the values of the frequency-dependent, practical sound absorption coefficient made up of three third octaves. They are frequently used for frequency-dependent prognoses.

α_w is the weighted sound absorption coefficient. It is independent of the frequency and specified as a single value quantity.

Shape indicators as suffixes to the rated sound absorption coefficient provide some indication of whether an absorbing material is particularly effective in the low, medium or high frequency range.

The following indicators are used:

- L, when the product is particularly effective in the low frequency range
  e.g. $\alpha_w = 0.60$ (L)
- M, when the product is particularly effective in the medium frequency range
  e.g. $\alpha_w = 0.70$ (M)
- H, when the product is particularly effective in the high frequency range.
  e.g. $\alpha_w = 0.85$ (H)
- Combinations are possible.
  e.g. $\alpha_w = 0.70$ (MH)

Sound absorption class and descriptive term acc. to VDI 3755

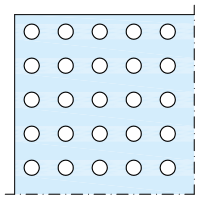
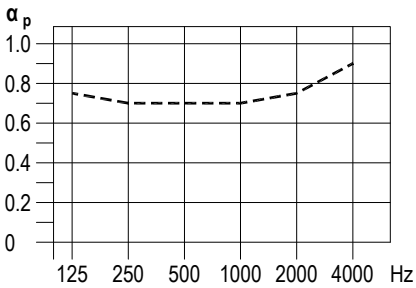
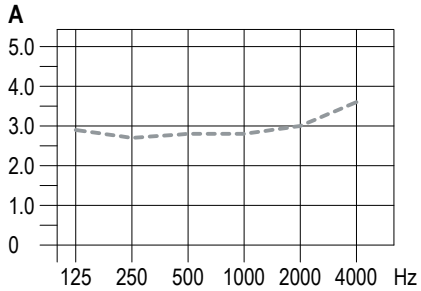
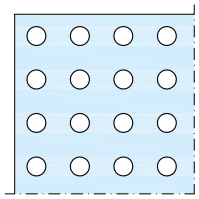
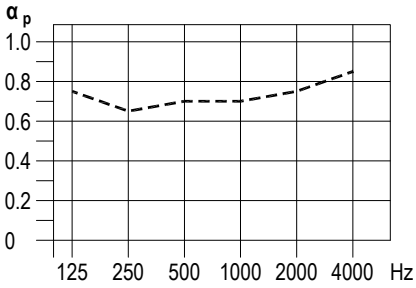
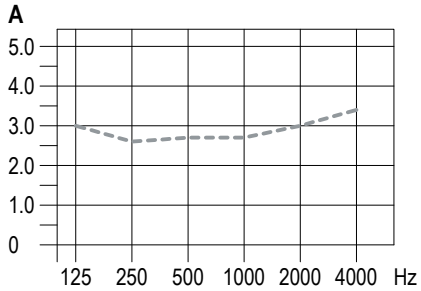
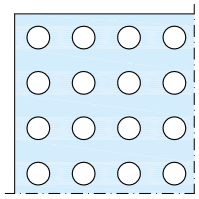
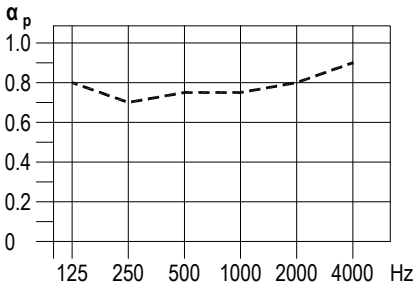
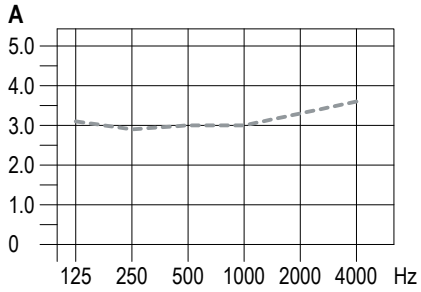
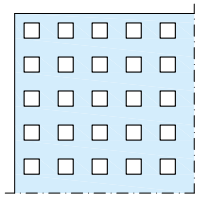
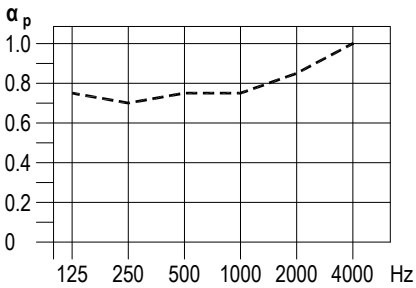
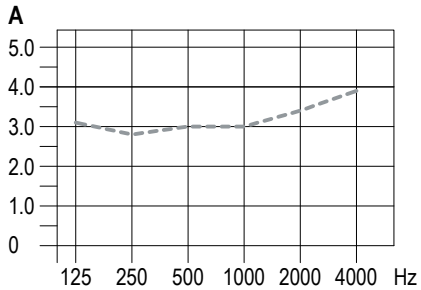
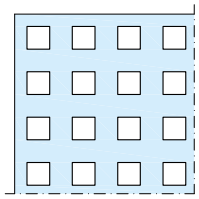
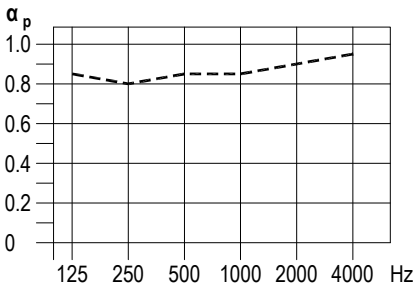
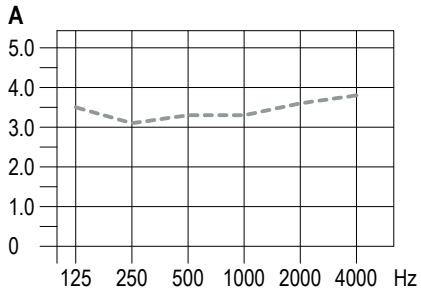
Weighted sound absorption coefficient α_w	Rating
≥ 0.80	Extremely absorbing
0.60 to 0.75	Highly absorbing
0.30 to 0.55	Absorbing
0.15 to 0.25	Hardly absorbing
≤ 0.10	Reflecting

Knauf sound absorption diagrams

For planar surfaces, the characteristic quantity for the practical sound absorption coefficient is the response between the octave frequencies of 125 Hz to 4000 Hz. Furthermore, the sound absorption coefficient α_w is specified as a single value quantity in addition to an NRC (Noise Reduction Coefficient) for the products. The American NRC quantity is determined from the α_s values as an arithmetic mean value of the third-octave frequencies 250 Hz, 500 Hz, 1000 Hz and 2000 Hz, and rounded off and expressed to the nearest multiple of 0.05.

Notes	The sound absorption coefficient or equivalent sound absorption surface of the W112C.de can be transferred with unchanging cavity depth (75 mm) to the acoustic furring and/or wall lining. For further information on planning and design see Technical Brochures ■ Room Acoustics with Knauf ▪ Basics and Concepts AK01.de ▪ Data for Planning AK02.de

Sound absorption - continuous perforation / area share 33 %

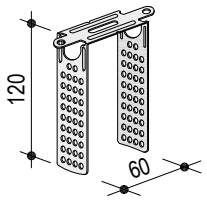
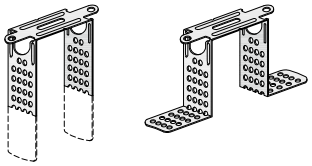
Perforation pattern	α_w	Sound absorption coefficient α_p With respect to the **perforation ratio** (4 m²)	Equivalent sound absorption area A With respect to the entire test surface area of 12 m²
Standard circular perforation 8/18 R  Perforation ratio: **15.5 %**	**0.75** (H)	 α_p: 0.75 | 0.70 | 0.70 | 0.70 | 0.75 | 0.90	 A: 2.9 | 2.7 | 2.8 | 2.8 | 3.0 | 3.6
Standard circular perforation 10/23 R  Perforation ratio: **14.8 %**	**0.75**	 α_p: 0.75 | 0.65 | 0.70 | 0.70 | 0.75 | 0.85	 A: 3.0 | 2.6 | 2.7 | 2.7 | 3.0 | 3.4
Standard circular perforation 12/25 R  Perforation ratio: **18.1 %**	**0.80**	 α_p: 0.80 | 0.70 | 0.75 | 0.75 | 0.80 | 0.90	 A: 3.1 | 2.9 | 3.0 | 3.0 | 3.3 | 3.6
Standard square perforation 8/18 Q  Perforation ratio: **19.8 %**	**0.80** (H)	 α_p: 0.75 | 0.70 | 0.75 | 0.75 | 0.85 | 1.00	 A: 3.1 | 2.8 | 3.0 | 3.0 | 3.4 | 3.9
Standard square perforation 12/25 Q  Perforation ratio: **23.0 %**	**0.90**	 α_p: 0.85 | 0.80 | 0.85 | 0.85 | 0.90 | 0.95	 A: 3.5 | 3.1 | 3.3 | 3.3 | 3.6 | 3.8

W112C.de
W623C.de
W623D.de
W629C.de

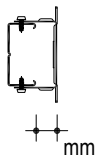
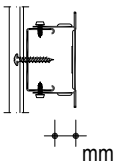
Construction depth of Cleaneo Acoustic Furring and/or Wall Lining

Direct lining / fastening system W623C.de/W623D.de

Scheme drawings I Dimensions in mm

Suspension	Drawing	Remark
Universal Bracket for CD 60/27, arm length 120 mm	  Bend or cut the universal bracket according to the required cavity depth, screw fix to CD 60/27 (2x metal screws LN 3.5 x 11).	Anchoring to the existing wall with 1x suitable fastener in the centre (observe the anchoring length) e.g. Knauf Drehstiftdübel nailable plug with masonry Maximum axial spacing 1500 mm

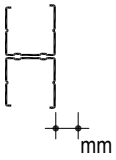
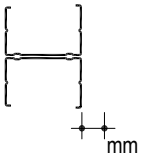
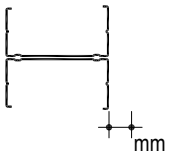
Spacing of CD Channel to existing wall systems W623C.de / W623D.de

System	Universal bracket		Stud frame Profile	
				Height Metal grid total
W623C.de	5 – 100	–	–	–
W623D.de	5 – 100	5 – 100	Hat-shaped channel 98/15	15

Calculation example, determination of the construction depths of acoustical wall lining

Steps		Dimensions in mm
1	**Spacing of studs to wall**	5
2	**Flange width of the studs** CD Channel	+ 27
3	**Sub-total cavity depth**	**= 32**
4	**Thickness of cladding** 2x 12.5 mm	+ 25
5	**Sum**	**= 57**

Minimum spacing of the CW double stud profile to existing wall system W629C.de

System	Profile 2x CW 50	2x CW 75	2x CW 100
			
W629C.de	≥ 10	≥ 10	≥ 10

Calculation example, determination of the construction depths of acoustical furring

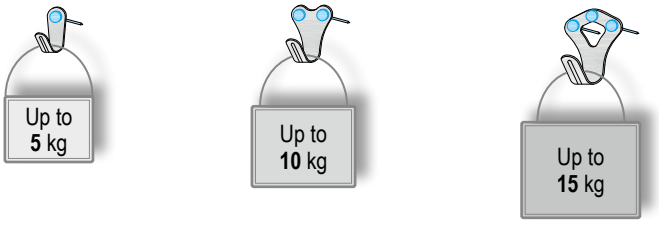
Steps		Dimensions in mm
1	**Spacing of studs to wall**	10
2	**Web width of the studs** CW stud	+ 75
3	**Sub-total cavity depth**	**= 85**
4	**Thickness of cladding** 2x 12.5 mm	+ 25
5	**Sum**	**= 110**

Fixing loads – W112C.de sealed partition side

Fixing loads

Up to 15 kg X-hooks

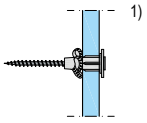
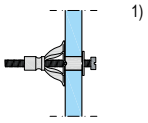
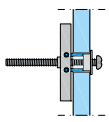
Maximum load capacity of hooks:



Up to 40 kg Knauf Multi-purpose screws FN
With direct screw fastening in the board

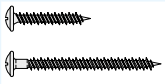
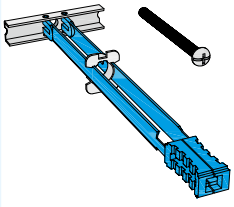
Cladding thickness	Knauf Multi-purpose screws	Maximum screw load
Diamant mm		kg
≥ 2x 12.5	FN 4.3 x 35 / FN 4.3 x 65	**40**

Up to 65 kg cavity dowels
For fixing of cantilever loads up to 0.4 kN/m or 0.7 kN/m

Cladding thickness	Maximum dowel load capacity		
	Plastic cavity dowel Ø 8 mm or 10 mm	Metal cavity dowel Screw M5 or M6	Knauf cavity dowel Hartmut Screw M5
Diamant mm	 1)	 1)	
	kg	kg	kg
2x 12.5	**45**	**55**	**60**
≥ 2x 15	**50**	**60**	**65**

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

Examples:

	Light objects: e.g. Pictures and mirrors Up to 40 kg (2x 12.5 mm Diamant) per screw using Knauf Multi-purpose screws FN.
	Higher loads: e.g. Kitchen cupboards up to 60 kg per dowel (2x 12.5 mm Diamant) using Knauf cavity dowels Hartmut.

Cantilever loads – W112C.de sealed partition side

According to DIN 18183, stud partitions can loaded at any position by cantilever loads (e.g. TV sets, cupboards).
However, the cantilever arm (cabinet height ≥ 300 mm) and eccentricity (≤ 300 mm with cabinet depth ≤ 600 mm) are to be considered.
Attach the cantilever loads with at least 2 cavity dowels made of plastic or metal, e.g. Knauf Hartmut Hohlraumdübel cavity dowels.
Determine the minimum number of dowels using the cabinet weight and loading of the selected dowel type in dependence on the cladding thickness (Calculation examples see Technical Information Tro142.de Traverses and Sanistands, German only).
Anchoring spacing of the dowel acc. to DIN 18183: ≥ 75 mm; (Knauf recommendation: ≥ 200 mm).

Up to 1.5 kN/m Traverses / Sanistands

Cantilever loads above 0.4 kN/m or 0.7 kN/m up to 1.5 kN/m wall length are to be transferred to the grid via Sanistands[2)] / traverses. In the area of the Sanistands and traverses UA/CW profiles can be fastened to the existing wall by approx 30 cm high gypsum board straps.

2) e.g. Sanistands from Glock GmbH (can be found at: www.glockgmbh.de)

► Good to know
Fixing loads up to 20% more than those compared to standard boards are permitted with direct fixing in the Diamant board.
This allows you to master many fixing tasks without drilling, noise as well as dust and dirt.

Note	For further information on Fixing loads and cantilever loads see System Data Sheet Knauf Metal Stud Partitions W11.de.

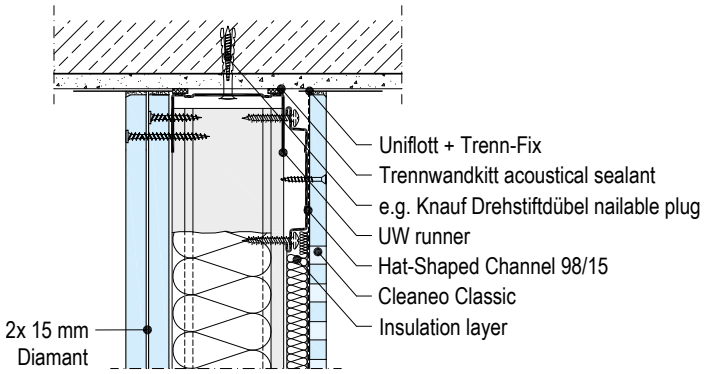
Construction details

Details

Scale 1:5 I Dimensions in mm

W112C.de-VO1 Connection to basic ceiling

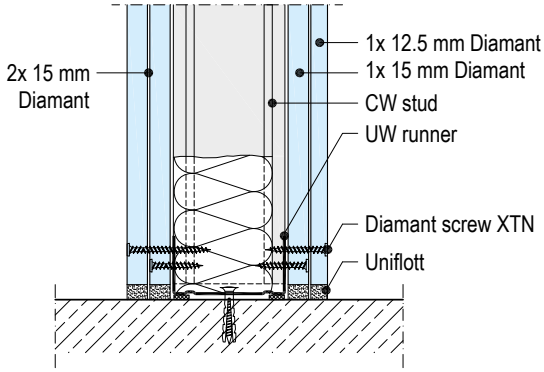
Vertical section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended.

W112C.de-VU1 Connection to basic floor slab

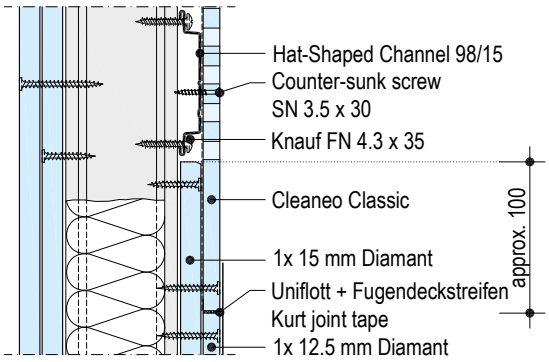
Vertical section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-VM1 Board joint

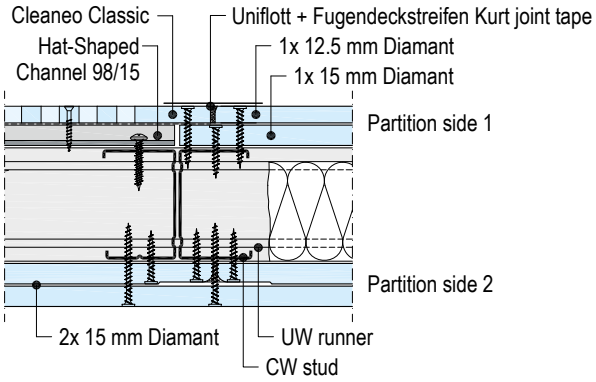
Vertical section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-B1 Board joint

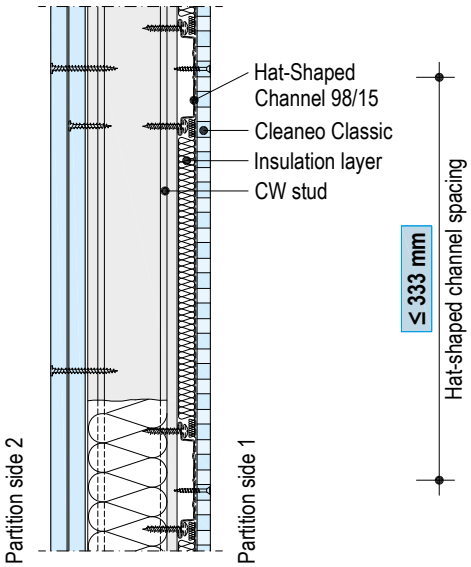
Horizontal section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

Scheme section, perforated area

Vertical section



Scheme drawing

► **System properties perforated area**
- Spacing of CW studs ≤ 625 mm
- Profile CW 75
- Hat-shaped channel stud spacing ≤ 333 mm
- Partition side 2
  2 x 15 mm Diamant
- Partition side 1
  1 x 12.5 mm Cleaneo Classic

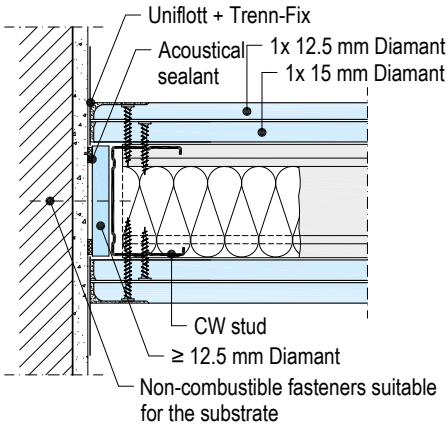
W112C.de Cleaneo Acoustic Wall

Details

Maßstab 1:5

W112C.de-A3 Connection to solid wall, non-perforated area

Horizontal section

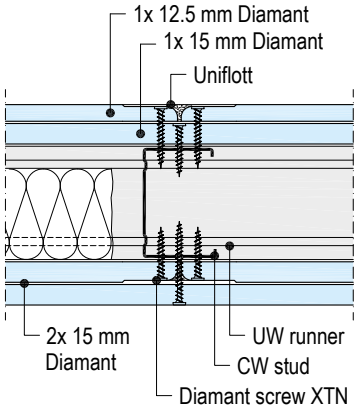


With wall height > 3.00 m and demands on the fire resistance, backing of the CW perimeter connection profile on the web side is required.

plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-B2 Board joint, non-perforated area

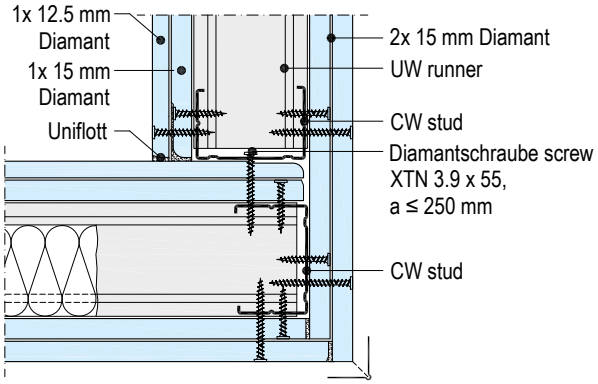
Horizontal section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-D1 Corner, non-perforated area

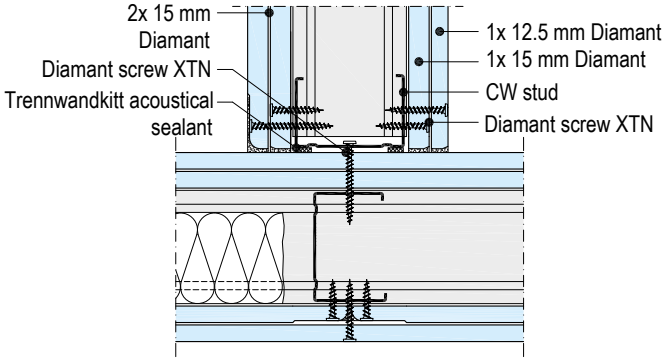
Horizontal section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-C1 T connection, non-perforated area

Horizontal section



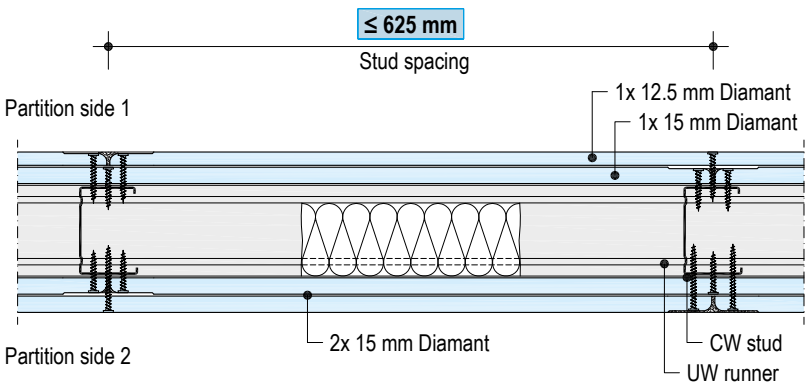
With wall height > 3.00 m and demands on the fire resistance, backing of the CW perimeter connection profile on the web side is required.

plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

Scheme section, perforated area

Horizontal section

Scheme drawing



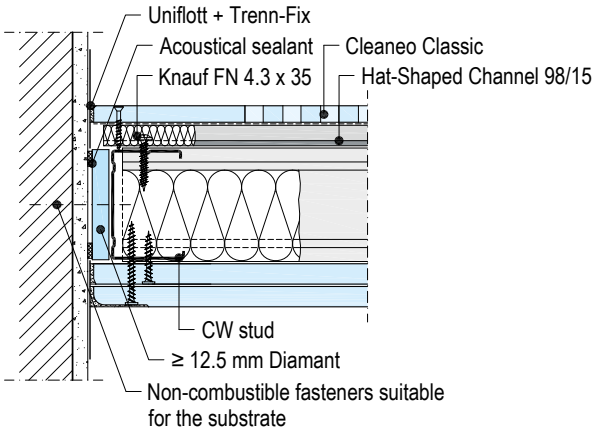
- **System properties non-perforated area**
- Spacing of CW studs ≤ 625 mm
- Profile CW 75
- Partition side 1 and 2
  1st layer 15 mm Diamant per side
- Partition side 2
  2nd layer 1x 15 mm Diamant
- Partition side 1
  2nd layer 1x 12.5 mm Diamant

Details

Maßstab 1:5

W112C.de-A4 Connection to solid wall, non-perforated area

Horizontal section

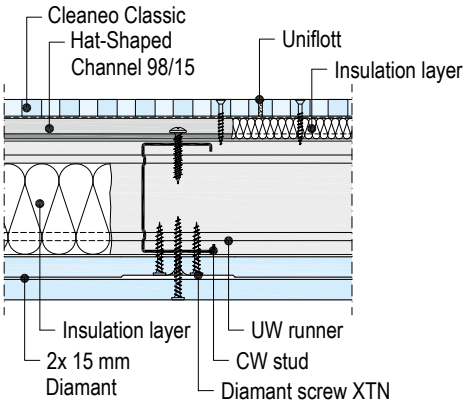


With wall height > 3.00 m and demands on the fire resistance, backing of the CW perimeter connection profile on the web side is required.

plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-B3 Board joint, perforated area

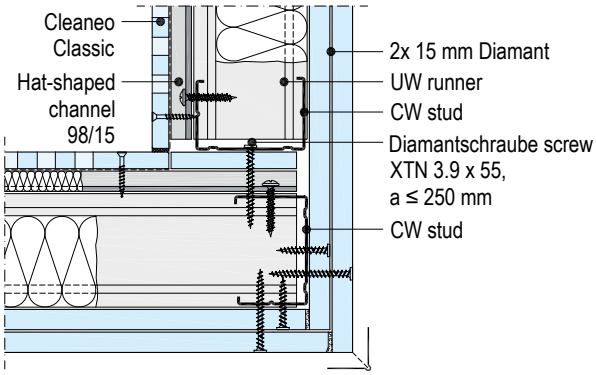
Horizontal section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-D2 Corner, perforated area

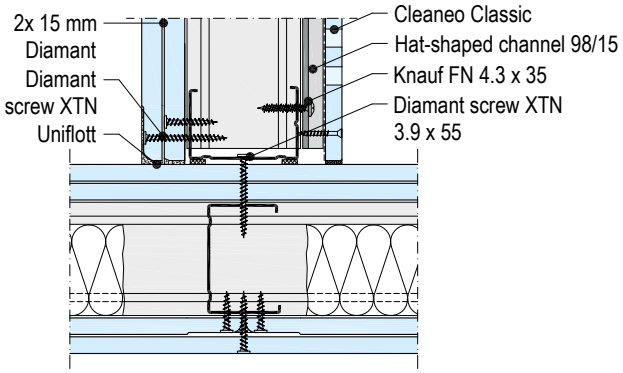
Horizontal section



plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

W112C.de-C2 T connection, perforated area

Horizontal section



With wall height > 3.00 m and demands on the fire resistance, backing of the CW perimeter connection profile on the web side is required.

plus **Extension of the fire resistance Certificate of Usability**
Prior consultation in acc. to page 43 recommended

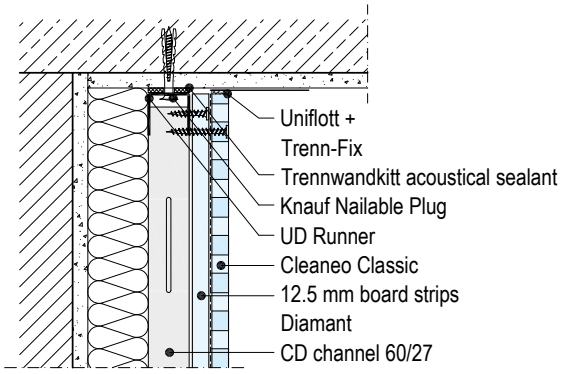
W623C.de Cleaneo Acoustic Wall Lining with board strips

Details

Scale 1:5 I Dimensions in mm

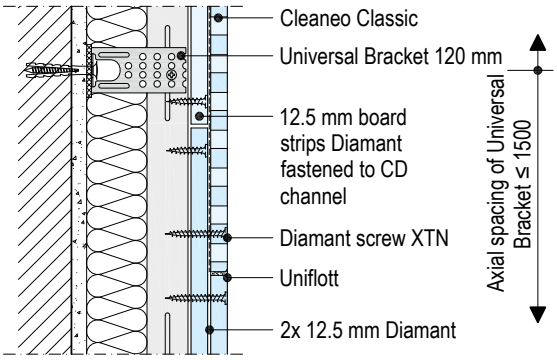
W623C.de-VO21 Connection to basic ceiling

Vertical section



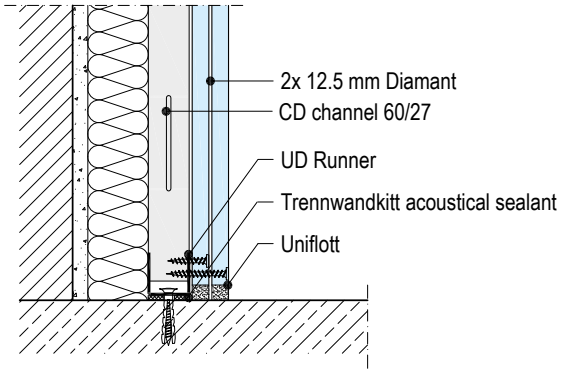
W623C.de-VM20 Board joint

Vertical section



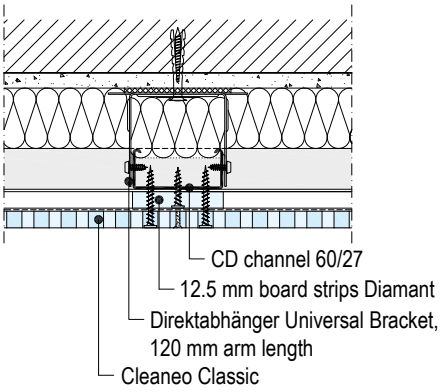
W623C.de-VU20 Connection to basic floor slab

Vertical section



W623C.de-H20 Board joint

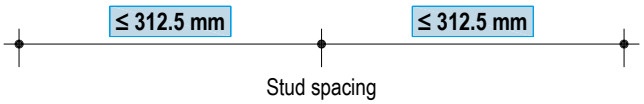
Horizontal section

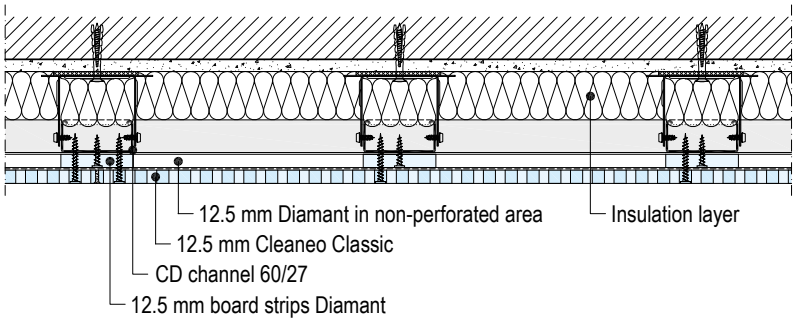


Scheme section

Horizontal section

Scheme drawing





► System properties

- Spacing of CD Channels ≤ 312.5 mm

Non-perforated area

- 2x 12.5 mm Diamant

Perforated area

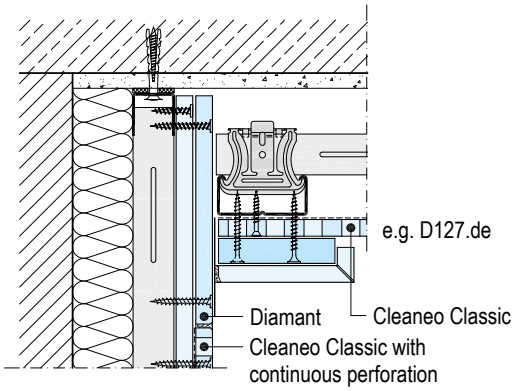
- 12.5 mm Diamant board strips on CD Channel
- 12.5 mm Cleaneo Classic

Details

Scale 1:5 I Dimensions in mm

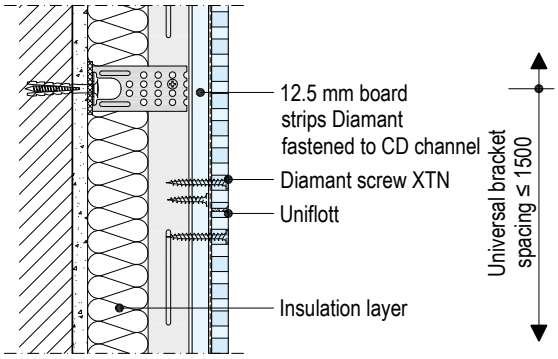
W623C.de-VO20 Ceiling connection to basic ceiling

Vertical section



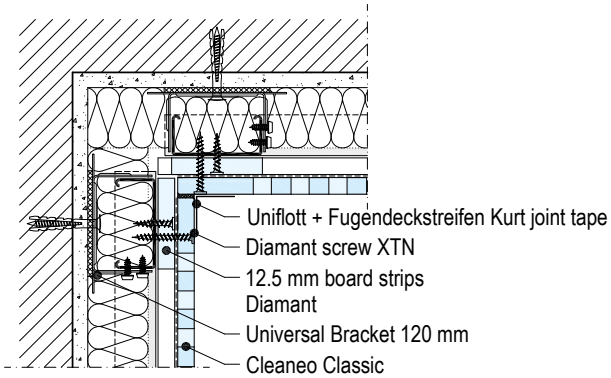
W623C.de-VM21 Board joint

Vertical section



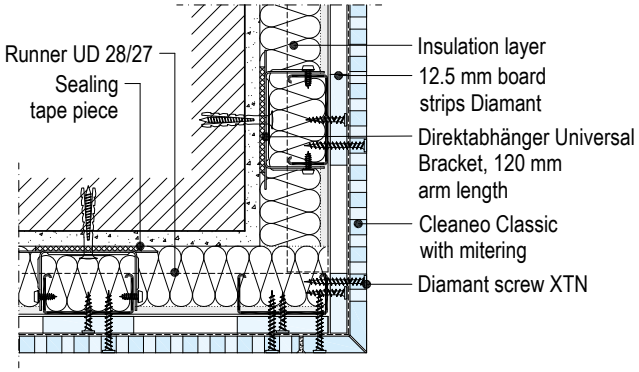
W623C.de-A20 Inside corner

Horizontal section



W623C.de-E20 Outside corner

Horizontal section



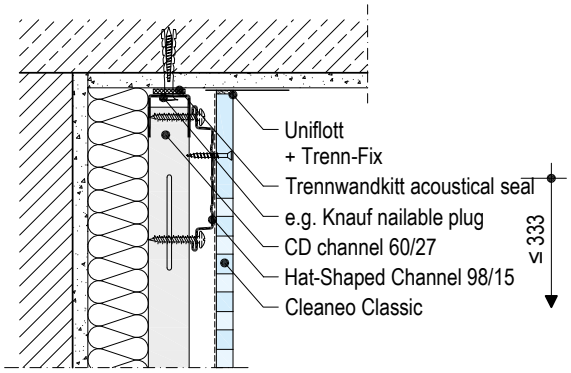
W623D.de Knauf Cleaneo Acoustic Wall Lining with Hat-Shaped Channel

Details

Scale 1:5 I Dimensions in mm

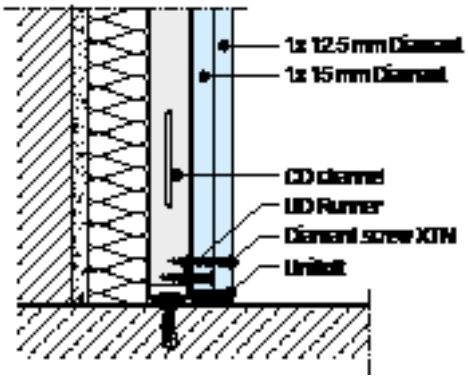
W623D.de-VO2 Ceiling connection to basic ceiling

Vertical section



W623D.de-VU2 Floor connection to basic floor slab

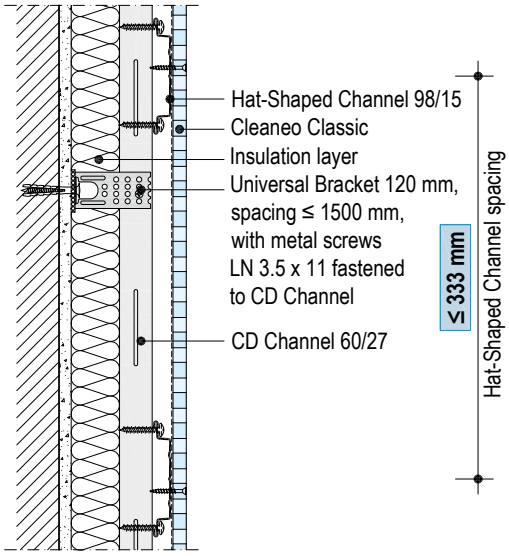
Vertical section



Scheme section, perforated area

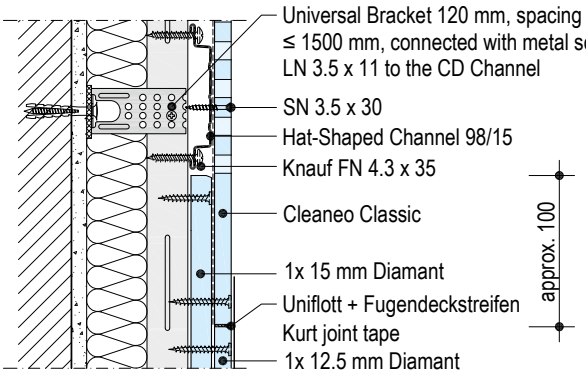
Vertical section

Scheme drawing



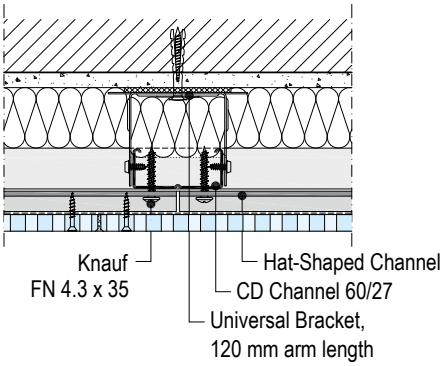
W623D.de-VM2 Board joint

Vertical section



W623D.de-H1 Board joint

Horizontal section



► System properties

- Spacing of CD Channels ≤ 625 mm

Non-perforated area

- 1st layer 15 mm Diamant
  2nd layer 12.5 mm Diamant

Perforated area

- Hat-Shaped Channel stud spacing ≤ 333 mm
- 12.5 mm Cleaneo Classic

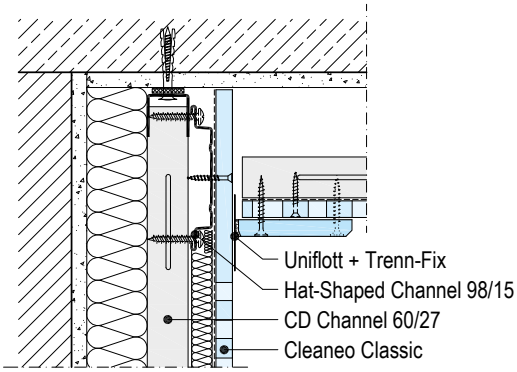
W623D.de Knauf Cleaneo Acoustic Wall Lining with Hat-Shaped Channel

Details

Scale 1:5 I Dimensions in mm

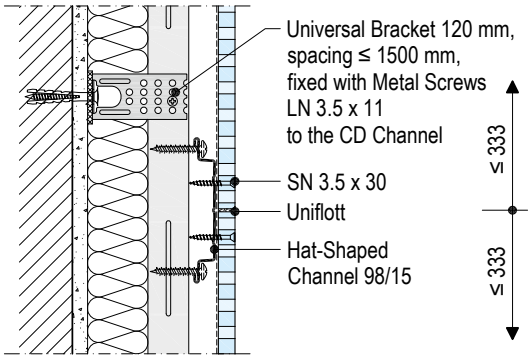
W623D.de-VO3 Ceiling connection to basic ceiling

Vertical section



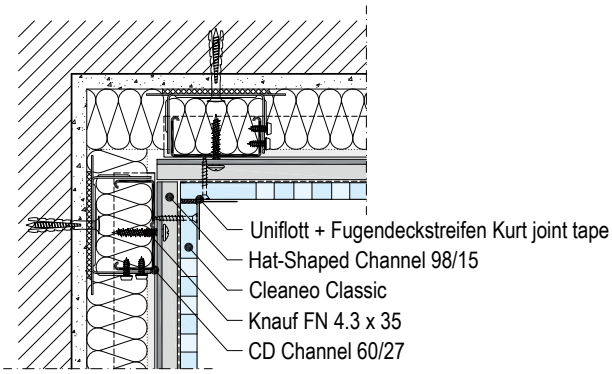
W623D.de-VM1 Board joint on Hat-Shaped Channel

Vertical section



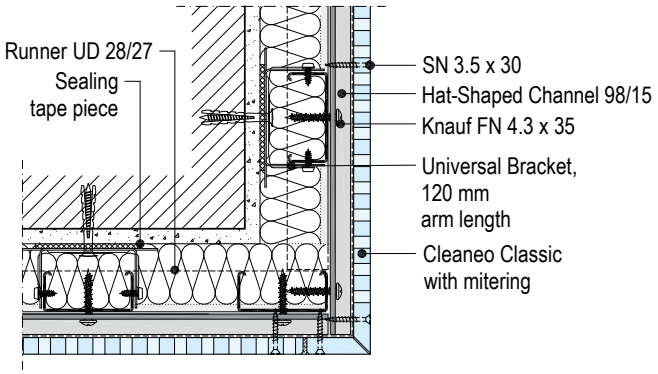
W623D.de-A1 Inside corner

Horizontal section



W623D.de-E1 Outside corner

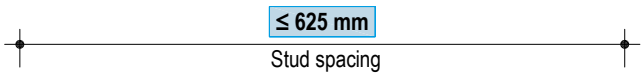
Horizontal section

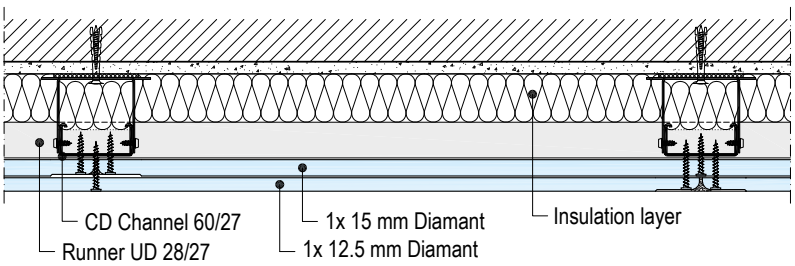


Scheme section, perforated area

Horizontal section

Scheme drawing





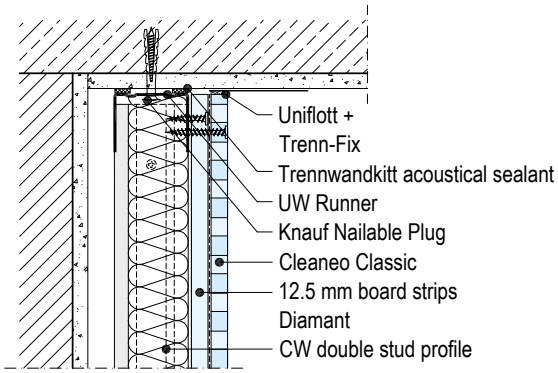
W629C.de Cleaneo Acoustic Furring

Details

Scale 1:5 I Dimensions in mm

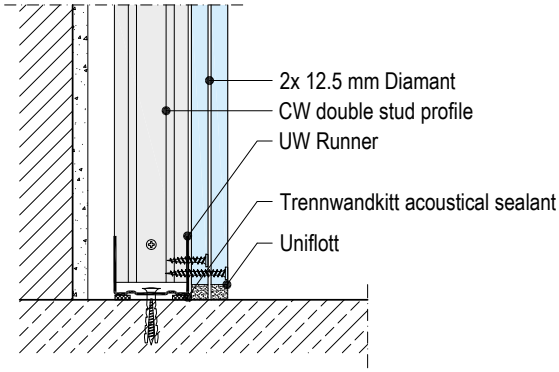
W629C.de-VO21 Ceiling connection to basic ceiling

Vertical section



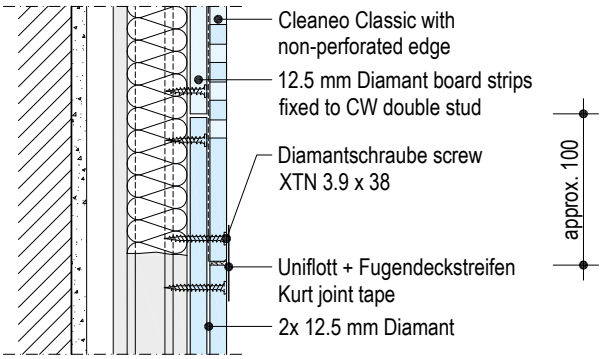
W629C.de-VU20 Floor connection to basic floor slab

Vertical section



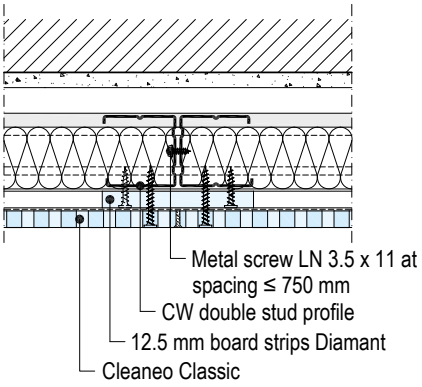
W629C.de-VM20 Board joint

Vertical section



W629C.de-H20 Board joint

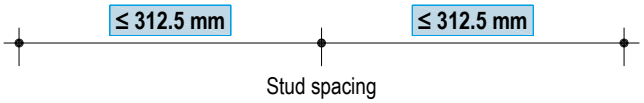
Horizontal section

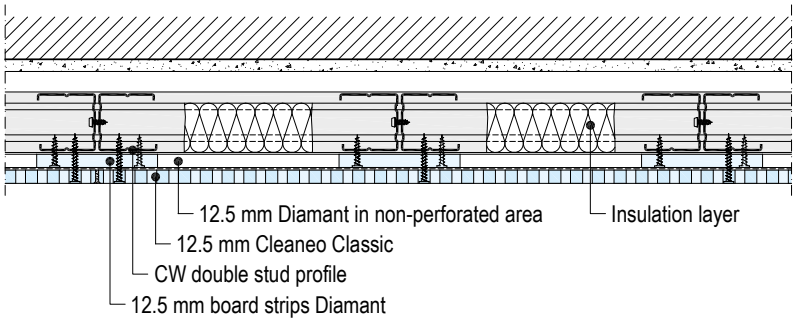


Scheme section

Horizontal section

Scheme drawing





► System properties

- Spacing of CW double stud profiles ≤ 312.5 mm

Non-perforated area

- 2x 12.5 mm Diamant

Perforated area

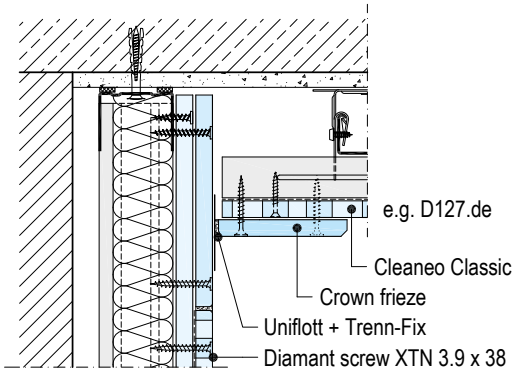
- 12.5 mm Diamant board strips on CW double profile
- 12.5 mm Cleaneo Classic

Details

Scale 1:5

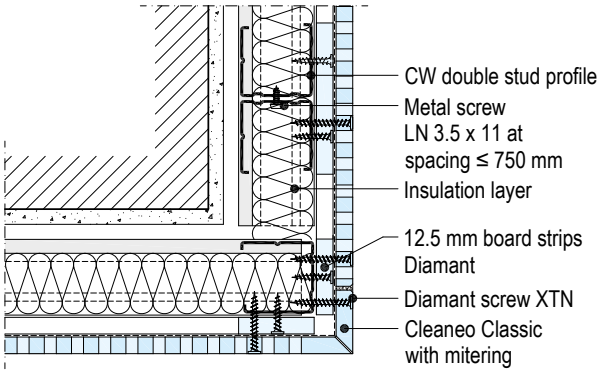
W629C.de-VO20 Ceiling connection to basic ceiling

Vertical section



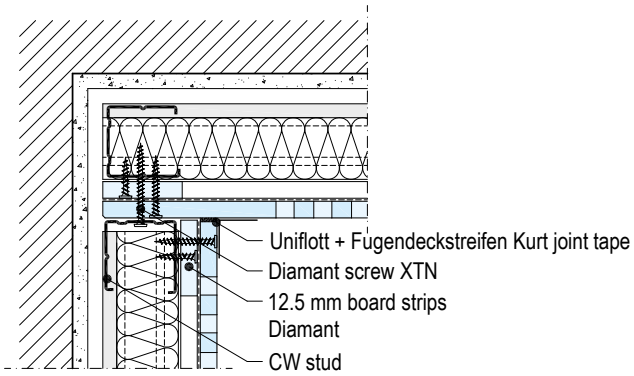
W629C.de-E20 Outside corner

Horizontal section



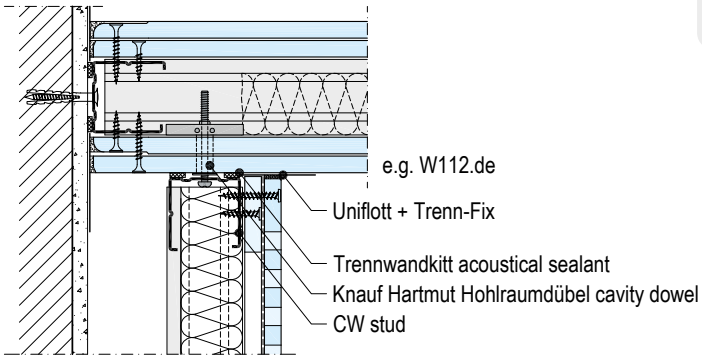
W629C.de-A20 Inside corner

Horizontal section



W629C.de-E21 Connection to metal stud partition

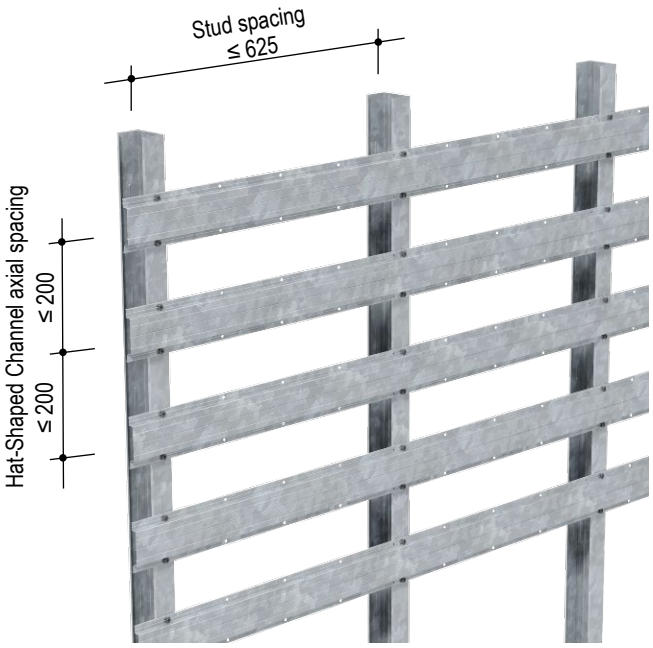
Horizontal section



W112C.de Construction design, ball impact safe

- **Stud frame**
  - Knauf CW single profile; a ≤ 625 mm
  - Knauf Hat Shaped Channel; **a ≤ 200 mm**
  - Fastening: Knauf Multi-purpose screw FN 4.3 x 35

Scheme representation of grid Dimensions in mm

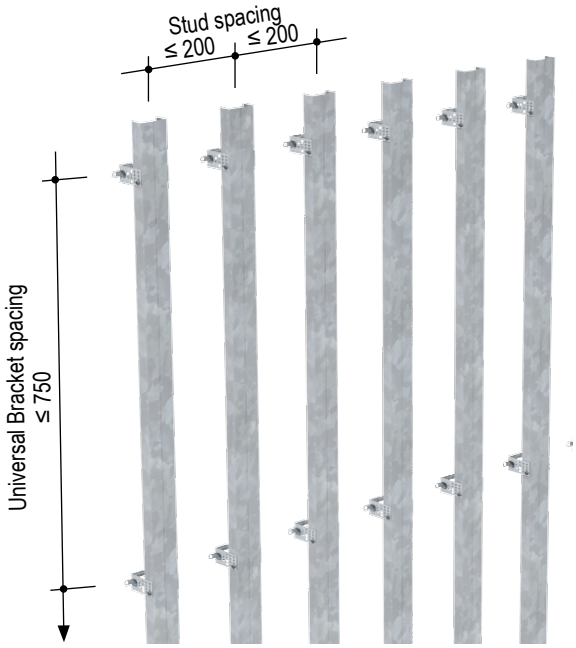


- **Scheme section, perforated area**
  - 2x 12.5 mm Cleaneo Classic 8/18 R; from 2 m upper edge FF
  - 1st layer counter-sunk screw TN 3.5 x 30; a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 250 mm
- **Cladding non-perforated area**
  - 15 mm + 2x 12.5 mm Diamant
  - 1st layer Diamant Screw XTN 3.9 x 33; a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 500 mm
  - 3rd layer Diamant Screw XTN 3.9 x 55; a ≤ 250 mm

W623C.de Construction design, ball impact safe

- **Stud frame**
  - Knauf profile CD 60/27, **a ≤ 200 mm**
  - Universal Bracket **a ≤ 750 mm**
  - Fastening: Knauf Metal Screws LN 3.5 x 11

Scheme representation of grid Dimensions in mm

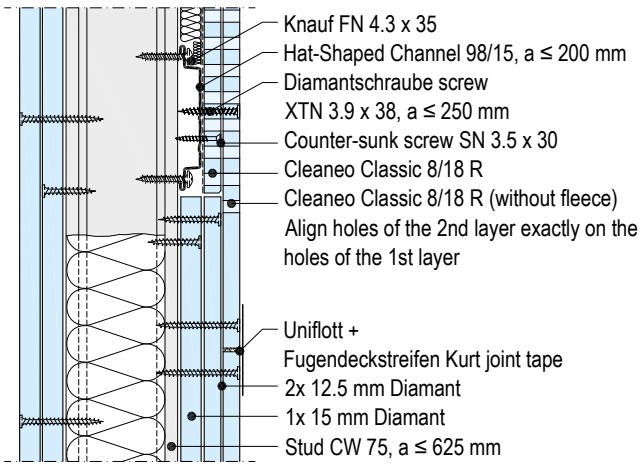


- **Scheme section, perforated area**
  - 2x 12.5 mm Cleaneo Classic 8/18 R, from 2 m upper edge FF
  - 1st layer counter-sunk screw SN 3.5 x 30, a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 250 mm
- **Cladding non-perforated area**
  - 2x 12.5 mm Diamant
  - 1st layer Diamant Screw XTN 3.9 x 23; a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 250 mm

Detail

W112C.de-SO1 Board joint

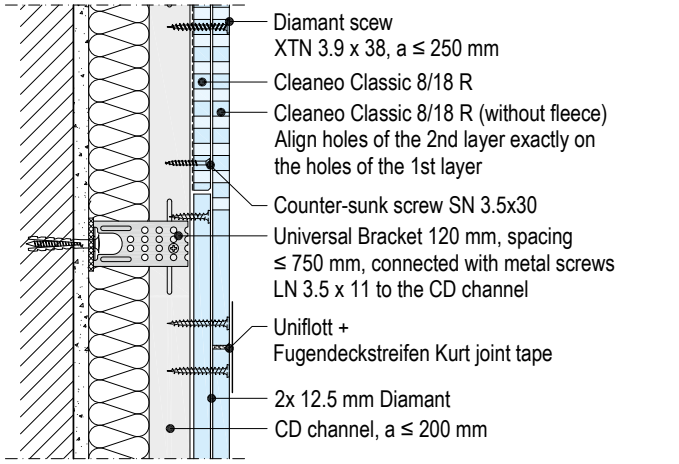
Vertical section Scale 1:5



Detail

W623C.de-SO1 Board joint

Vertical section Scale 1:5

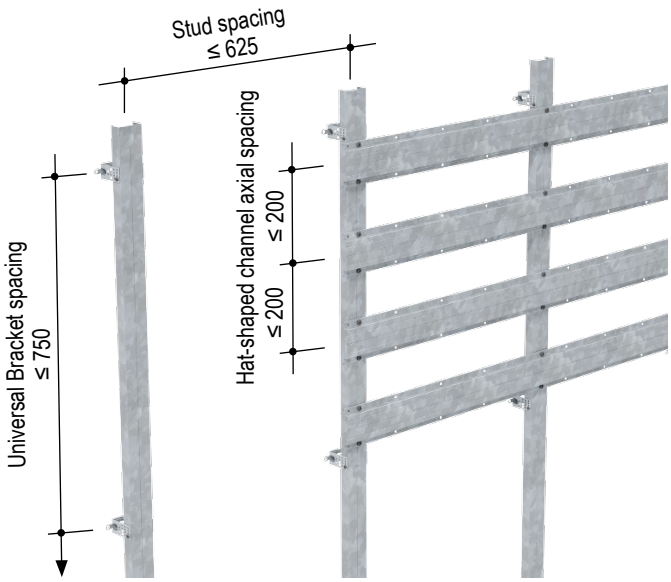


Notes	
	Ball impact safety acc. to DIN 18032-2 (without built-ins) Proof: 903 1260 000-7/Man/Sgm.
	2nd layer Cleaneo Classic 8/18 R without acoustical fleece installed (state when ordering).
	Align perforations of 2nd layer exactly to the perforations of the 1st layer.

W623D.de Construction design, ball impact safe

- **Stud frame**
  - Knauf profile CD 60/27; a ≤ 625 mm
  - Universal Bracket **a ≤ 750 mm**
  - Fastening: Knauf Metal Screws LN 3.5 x 11
  - Knauf Hat Shaped Channel; **a ≤ 200 mm**
  - Fastening: Knauf Multi-purpose screw FN 4.3 x 35

Scheme representation of grid Dimensions in mm

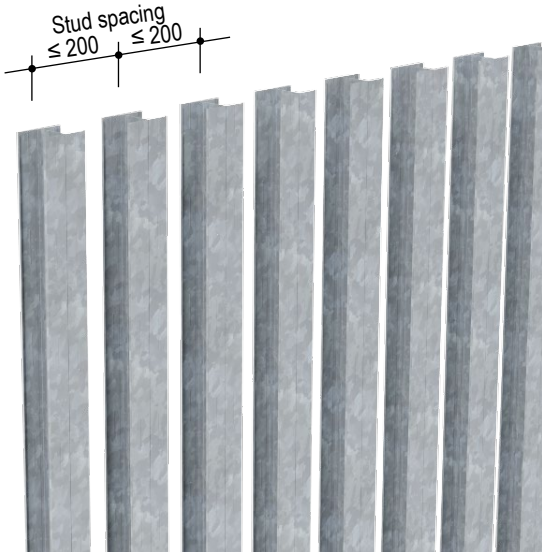


- **Scheme section, perforated area**
  - 2x 12.5 mm Cleaneo Classic 8/18 R; from 2 m upper edge FF
  - 1st layer counter-sunk screw TN 3.5 x 30; a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 250 mm
- **Cladding non-perforated area**
  - 15 mm + 2x 12.5 mm Diamant
  - 1st layer Diamant Screw XTN 3.9 x 33; a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 500 mm
  - 3rd layer Diamant Screw XTN 3.9 x 55; a ≤ 250 mm

W629C.de Construction design, ball impact safe

- **Stud frame**
  - Knauf CW Double profile; **a ≤ 200 mm**
- **Scheme section, perforated area**
  - 2x 12.5 mm Cleaneo Classic 8/18 R; from 2 m upper edge FF
  - 1st layer counter-sunk screw TN 3.5 x 30; a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 250 mm

Scheme representation of grid Dimensions in mm

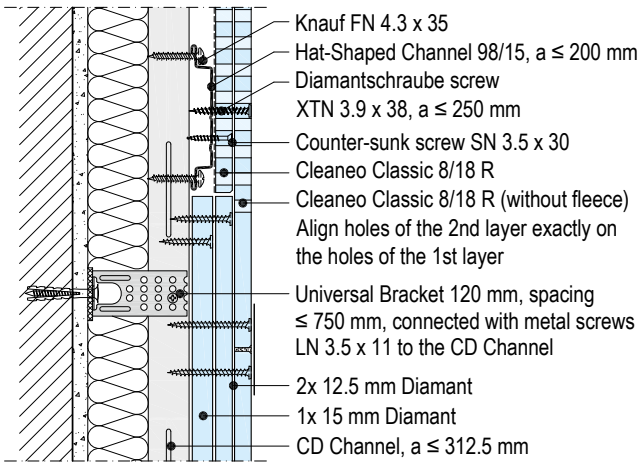


- **Cladding non-perforated area**
  - 2x 12.5 mm Diamant
  - 1st layer Diamant Screw XTN 3.9 x 23; a ≤ 750 mm
  - 2nd layer Diamant Screw XTN 3.9 x 38; a ≤ 250 mm

Detail

W623D.de-SO1 Board joint

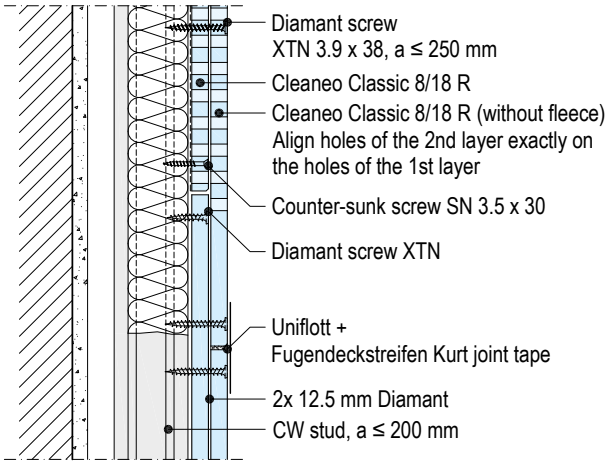
Vertical section Scale 1:5



Detail

W629C.de-SO1 Board joint

Vertical section Scale 1:5



Notes	
	Ball impact safety acc. to DIN 18032-2 (without built-ins) Proof: 903 1260 000-7/Man/Sgm.
	2nd layer Cleaneo Classic 8/18 R without acoustical fleece installed (state when ordering).
	Align perforations of 2nd layer exactly to the perforations of the 1st layer.

Installation and application

Stud frame

Scheme drawings

General

- Apply Acoustical Sealant (two strings) to rear side of runners for the connection to flanking constructional components. Porous sealant strips such as Dichtungsband sealing tape are usually not suitable for sound insulation construction purposes.

W112C.de

- If a deflection of the ceiling ≥ 10 mm can be expected, install deflection heads.
- Fasten perimeter runners using suitable anchors on the flanking constructional components. Use suitable fasteners:
  - Knauf Deckennagel ceiling steel dowel (reinforced concrete without board strip backing)
  - Fasteners for the building materials that are specially suitable and non-combustible

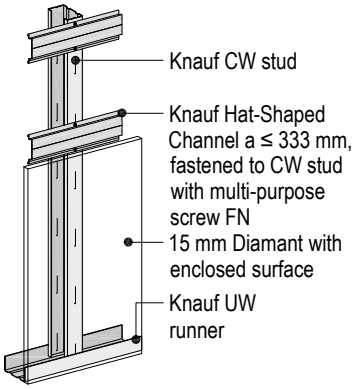
Max. permissible fastener spacings

Partition height	Max. fastening spacing Wall perimeter runner	Ceiling and floor connection profiles
m	mm	mm
Up to 4.00	500 [1]	500

1) With wall height > 3.00 m and demands on the fire resistance, backing of the CW perimeter connection profile on the web side is required. Contact surfaces of the board strips with flanking component provided with Trennwandkitt acoustical sealant (2 beads).

W112C.de Single metal stud frame

Install cut-to-length CW studs at 625 mm stud spacing into the UW runners and align.
In the perforated area fasten horizontal Hat-Shaped Channels at axial spacings ≤ 333 mm / ≤ 200 mm for ball impact safety using 2 Knauf Multi-purpose screws FN 4.3 x 35 per stud.

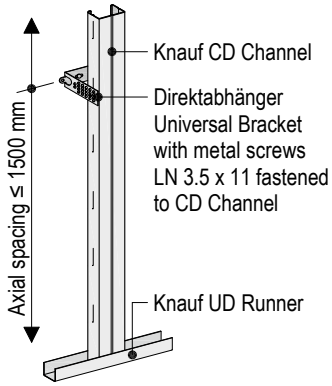


W623C.de / W623D.de Directly anchored

Maximum distance between fastener centres UD runner 1000 mm.
Fasteners for solid flanking constructional components: Knauf Drehstiftdübel nailable plug, Knauf Deckennagel ceiling steel dowel / or Knauf Universalschraube Multi-purpose screw FN with wooden substrates / other substrates: Anchors specially suited to the building material.

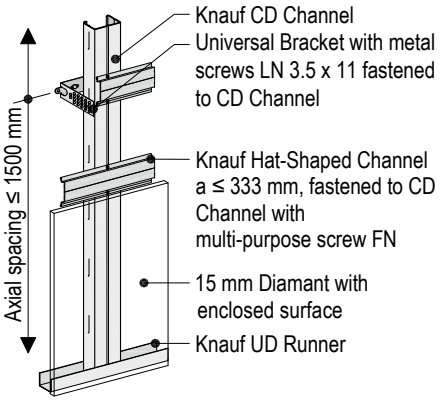
W623C.de

Install cut-to-length CD Channels at 312.5 mm / ≤ 200 mm stud spacing for ball impact safety into the UD runners and align. Anchoring of the CD Channels on the existing partition with Universal Brackets and suitable fasteners at spacings of 1500 mm / 750 mm with ball impact safety. Fastening to CD Channel with LN 3.5 x 11.



W623D.de

Install cut-to-length CD studs at 625 mm stud spacing into the UD runners and align. Anchoring of the CD Channels on the existing partition with Universal Brackets and suitable fasteners at spacings of 1500 mm / 750 mm with ball impact safety. Fastening to CD Channel with LN 3.5 x 11.
In the perforated area fasten horizontal Hat-Shaped Channels at axial spacings ≤ 333 mm / ≤ 200 mm for ball impact safety using 2 Knauf multi-purpose metal screws FN 4.3 x 35 per stud.



W629C.de detached

Fasten perimeter runners using suitable anchors on the flanking constructional components. Fasteners for solid flanking constructional components: Knauf Drehstiftdübel nailable plug, Knauf Deckennagel ceiling steel dowel / or Knauf Universalschraube Multi-purpose screw FN with wooden substrates / other substrates: Anchors specially suited to the building material.

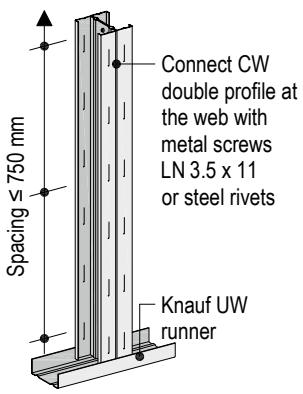
Maximum permissible fastener spacings

Supporting fastening perimeter runner (UW) connection on basic floor and ceiling				
Partition height	Knauf ceiling steel dowels (with re-inforced concrete)	Knauf Nailable Plug	Knauf Multi-purpose screws FN (on wooden substrates screw-in depth > 24 mm, suspended ceilings)	
	1x	**1x**	**2x**	**2x**
m	mm	mm	mm	mm
≤ 3.00	1000	1000	1000	500
> 3.00 ≤ 6.50	1000	500	500	250

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

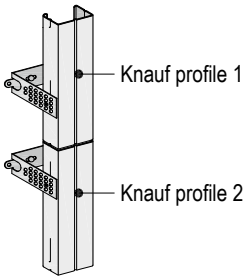
W629C.de Single metal stud frame

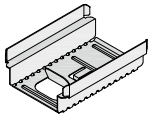
Screw fix or connect longitudinally aligned CW studs as double profiles at the web with Metal Screws LN 3.5 x 11 or rivets at a spacing of max. 750 mm. Install at 312.5 mm / ≤ 200 mm stud spacing for ball impact safety into the UW runners and align.



Vertical profile extensions CD Channel

Connect 2 CD Channels butt jointed with an additional CD longitudinal connector.



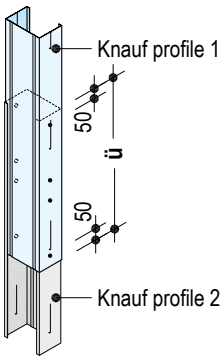


- On each profile start / end fasten two Universal Brackets / Damping Universal Brackets to the existing wall.
- Stagger the heights of the profile joints (alternating upper and lower wall halves)

Vertical profile extensions CW stud Dimensions in mm

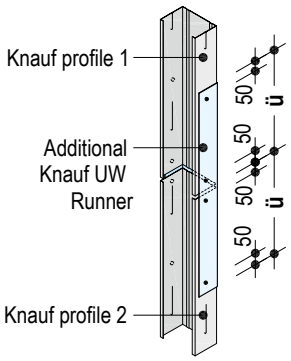
Variant 1

2 CW studs connected to form a box.



Variant 2

2 CW studs butt joined, connected with additional UW Runner.



Profile extensions Knauf profiles	Overlap ü
CW 50	≥ 500 mm
CW 75	≥ 750 mm
CW 100	≥ 1000 mm

- Stagger the heights of the profile joints (alternating upper and lower wall half).
- Rivet, screw fix or, if possible, crimp the profiles in the overlapping area.

Insulation layer

W112C.de

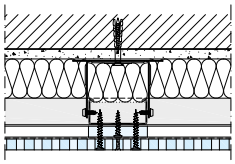
Insert the insulation material tightly between the studs along the entire surface and ensure that it does not slip.

W623C.de / W623D.de / W629C.de

Apply the insulation material tightly and ensure it does not slip.

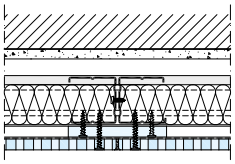
CD Channel with Universal Bracket

W623C.de / W623D.de



CW profile detached

W629C.de



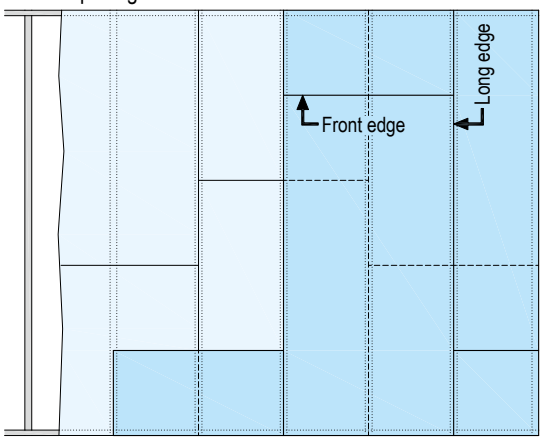
Application schemes

Scheme drawings

W112C.de Sealed partition side vertical board layers

Diamant

- Board width 1250 mm
- Stud spacing 625 mm



- Stagger the long joints between the cladding layers by 625 mm (stud spacing).
- If floor-to-ceiling boards are not used, stagger the front edge joints ≥ 500 mm in a cladding layer.
- Also stagger the front edge joints between the board layers (approx. 200 mm).
- Do not apply board joints to door opening profiles (danger of cracking).

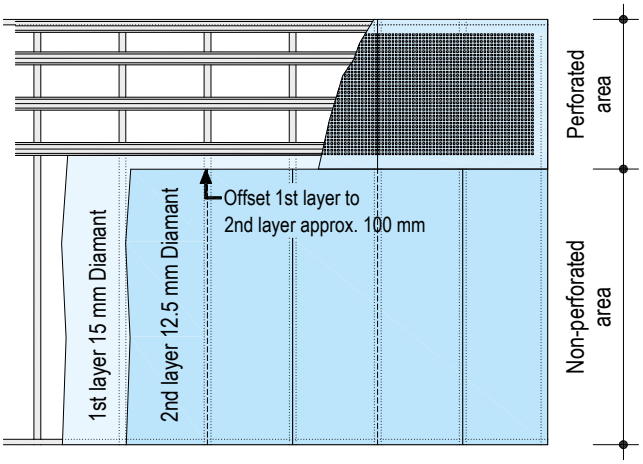
W112C.de Absorber side / W623D.de Vertical board layers

Diamant

- Board width 1250 mm
- Stud spacing 625 mm

Cleaneo Classic

- Board width acc. to perforation pattern
- Hat-Shaped Channel axial spacing ≤ 333 mm



W623C.de / W629C.de Vertical board layers

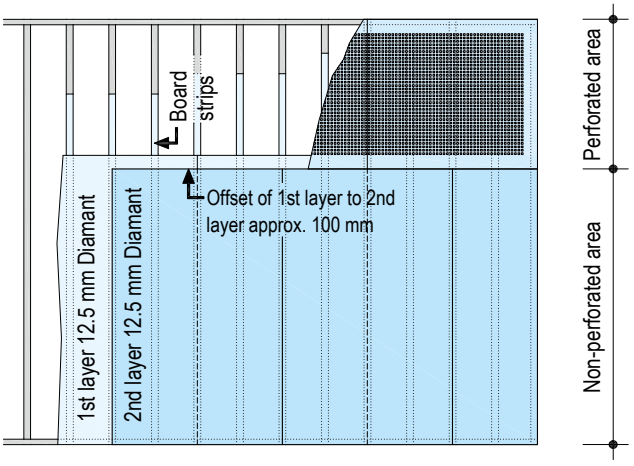
Diamant

- Board width 1250 mm

Cleaneo Classic

- Board width acc. to perforation pattern

Stud spacing 312.5 mm



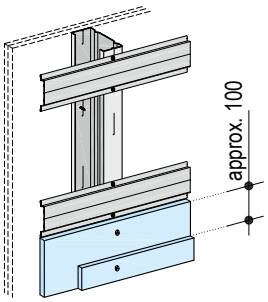
Diamant (non-perforated area)

- Stagger the long joints between the cladding layers by 625 mm.
- When using boards whose length does not correspond to the height of the non-perforated area, stagger the front edge joint ≥ 500 mm in a cladding layer.
- Also stagger the front edge joints between the board layers (approx. 200 mm).
- Do not apply board joints to door opening profiles (danger of cracking).

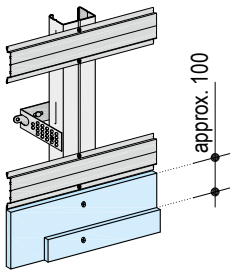
Note	To provide the best possible protection against vandalism, it is recommended that the perforated area is applied only above a height of 2.00 m.

Transition to the perforated area Scheme drawings I Dimensions in mm

W112C.de

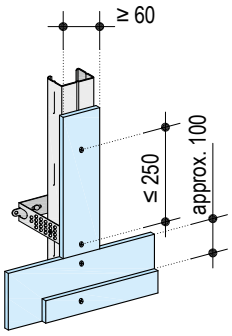


W623D.de

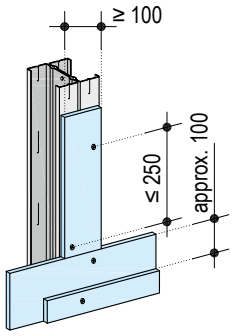


Board offset 1st layer to 2nd layer Diamant approx. 100 mm

W623C.de



W629C.de



Board offset 1st layer to 2nd layer Diamant approx. 100 mm
In the perforated area, screw fix 60 mm or 100 mm wide cover strips made of 12.5 mm Diamant with Diamant screws XTN 3.9 x 23 on the CD Channel or alternatively on the CW double profile. Distance between screw centres ≤ 250 mm. Prefabricated board strips are available.

Cleaneo Classic
Apply all Cleaneo Classic perpendicular and on the cross joint. Align Cleaneo Classic using a laser or a reference cord and install, so that the perforation rows are aligned continuously in the diagonal, longitudinal and lateral direction beyond the board joint. Clean the joints of dust deposits in the joints after installation using a brush.

Score and prime with a sanding mesh on the face side before applying edges with Cleaneo SK. Apply Cleaneo SK with 2 to 4 mm joint width, depending on the perforation design. Cleaneo SK is marked red and blue on the front and long edges. During installation always arrange a red board marking to a blue board marking (front and long edges). Use the installation aid with the knobs that fit the perforation pattern to ensure that the board spacings are correct (does not replace the need for alignment).

The edges of Cleaneo UFF are factory primed and bevelled. Cleaneo UFF is marked red and blue on the front and long edges. During installation always arrange a red board marking to a blue board marking (front and long edges). With Cleaneo UFF boards, the correct perforation spacing results automatically when the boards are arranged edge to edge.

With Cleaneo Designpanel and Slotline with 4-side tapered edge (4AK) and with Cleaneo Complete, the boards are butt joined on the cross joint.

Fastening of the cladding

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

Cladding Thickness in mm	**Metal stud frame** (Penetration ≥ 10 mm) Metal gauge **s ≤ 0.7 mm** Counter-sunk screws **SN** alt. Contrapanel ceiling screw (Cleaneo Complete)		Diamant Screw **XTN**
12.5 Cleaneo Classic	SN 3.5 x 30 or alt 3.5 x 25 (Cleaneo Complete)		–
12.5 + 12.5 Cleaneo Classic	SN 3.5 x 30 or alt. 3.5 x 25 (Cleaneo Complete)	+	XTN 3.9 x 38
2x 12.5 Diamant or 12.5 Diamant + 12.5 Cleaneo Classic	–		XTN 3.9 x 23 + XTN 3.9 x 38
15 + 12.5 Diamant	–		XTN 3.9 x 33 + XTN 3.9 x 38
2x 15 Diamant	–		XTN 3.9 x 33 + XTN 3.9 x 55
15 + 12.5 + 12.5 Diamant	–		XTN 3.9 x 33 + XTN 3.9 x 38 + XTN 3.9 x 55

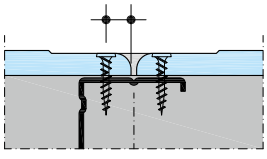
Maximum fastener spacings – Knauf board cladding

Cladding	**Boards**		
	1st layer	2nd layer	3rd layer
2x Diamant	750 mm	250 mm	–
3x Diamant	750 mm	500 mm	250 mm
1x 12.5 Cleaneo Classic	250 mm	–	–
2x 12.5 Cleaneo Classic	750 mm	250 mm	–

Arrangement of screws for optimum sound insulation with minimum spacing from edge (10 mm edge covered with board liner, 15 mm cut edge).

Arrange board joint on centre of profile flange

≥ 10 mm - paper lined edge
≥ 15 mm - cut edge



Jointing

Jointing of the boards in the required quality level Q1 to Q4 in accordance with Code of Practice no. 2 “Verspachtelung von Gipsplatten, Oberflächengüten”[1)].

Suitable jointing materials

- Uniflott
  Hand filling without joint tape strips in the long joint edges
- Uniflott imprägniert
  Hand filling of impregnated boards without joint tape in the long edge joints, water-repellent, matching green colour

Suitable finish filling compounds with Diamant boards

- Q2, application by hand
  Uniflott, Uniflott imprägniert, Fill & Finish, SuperFinish
- Q3/Q4, application by hand
  Readygips, SuperFinish, Fill & Finish
- Q3/Q4, machine application
  ProSpray Light (preferably Q3), Readygips

Jointing of the gypsum boards

Fill the board joints of Cleaneo Classic boards according to the table below to suit the edge type concerned.
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 protection and sound insulation properties as well as the structural properties.

Recommended

Front edge and cut edge joints as well as mixed joints (e.g. HRAK + cut edge) of the visible cladding layers filled using Uniflott will require the application of Joint Tape Kurt as well.

Fill in visible screw heads (except with Cleaneo Complete Contrapanel ceiling screws with white 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)” [1)].

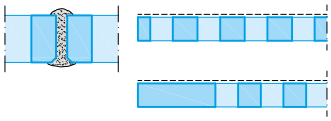
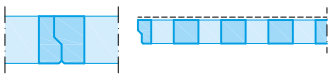
Apply Trenn-Fix when filling joints to adjacent solid or wooden construction components.

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” [1)].

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

Jointing of the gypsum boards

Edge designs	Application and joint filling	Transition to the perforated area
4SK 4-side cut square edge 	■ Scuff the board edges on the face side with a sanding mesh and remove the dust ■ Prime the cut edge (SK) with Knauf Tiefengrund primer ■ Align the boards according to perforation design ■ Fill the joints fully with Uniflott	■ Scuff the Diamant cut edge (SK) on the face side with a sanding mesh ■ Prime the cut edges with Knauf Tiefengrund primer ■ Install the board with a joint of 3-4 mm ■ Fill the joints fully with Uniflott
UFF Circumferential rebated edges 	■ Butt join the boards ■ Align the boards according to perforation design ■ Fill the joints fully with Uniflott	■ Scuff the Diamant cut edge (SK) on the face side with a sanding mesh ■ Prime the cut edges with Knauf Tiefengrund primer ■ Install the board with a joint of 3-4 mm ■ Fill the joints fully with Uniflott
linear Circumferential rebated edges 	■ Butt join the boards ■ Align the boards according to perforation design ■ Fill screw heads, for example, with Uniflott	■ Scuff the Diamant cut edge (SK) on the face side with a sanding mesh ■ Prime the cut edges with Knauf Tiefengrund primer ■ Install the board with a joint of 3-4 mm ■ Fill the joints fully with Uniflott
AK 4-side tapered edge 	■ Butt join the boards ■ Align the boards ■ Fill the joints with Uniflott ■ Fugendeckstreifen Kurt joint tape	■ Scuff the Diamant cut edge (SK) on the face side with a sanding mesh ■ Butt join the boards ■ Jointing with Uniflott ■ Fugendeckstreifen Kurt joint tape
SFK Front edge bevelled 	■ Prime the cut edges with Knauf Tiefengrund primer ■ Butt join the boards ■ Align the boards ■ Fill the joints completely with Uniflott	■ Scuff the Diamant cut edge (SK) on the face side with a sanding mesh ■ Install the board with a joint of 3-4 mm ■ Prime the cut edges with Knauf Tiefengrund primer ■ Jointing with Uniflott
HRK Long edge - half rounded 	■ Butt join the boards ■ Align the boards ■ Fill the joints completely with Uniflott	■ Use boards with half-rounded edge (HRK) or half-rounded tapered edge (HRAK) ■ Butt join the board edges ■ Jointing with Uniflott

Coatings and linings

Coating / lining	Recommended finish Gypsum boards EN 520[2)]
Tiles and similar	Q1
Coarse textured wallpapers (e.g. wood chip wallpaper)	Q2
Finely textured wallpapers	Q3/Q4
Matt, textured decorative coats	Q3/Q4
Gloss, smooth decorative coats	Q4
Plasters (grain size < 1 mm)	Q3/Q4
Plasters (grain size ≥ 1 mm)	Q2

2) In accordance with Code of Practice no. 2 "Verspachtelung von Gipsplatten, Oberflächengüten", issued by the Bundesverband der Gipsindustrie e. V (German only).

Pretreatment

Before a further coating or lining is applied, the filled surface must be free of dust. Gypsum board surfaces should always be primed in compliance with the Code of Practice no. 6 "Vorbehandlung von Trockenbauflächen aus Gipsplatten zur weitergehenden Oberflächenbeschichtung bzw. -bekleidung."1) (German only), issued by the German Bundesverband der Gipsindustrie e. V.

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 Tiefengrund primer is suitable.

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

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

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

Suitable coatings and linings

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

- Wallpapers (in the non-perforated area)
  - Paper, fleece, textile and synthetic wallpapers
    Use only adhesives made of methyl cellulose according to Code of Practice no. 16 ""Technische Richtlinien für Tapezier- und Spannarbeiten innen" released by the Bundesausschuss Farbe und Sachwertschutz (German only).
- Plaster and filler materials (in the non-perforated area)
  - Top coats (e.g. Noblo, Raumklima Spritzputz spray plaster, Rotkalk Filz)
  - Full surface plaster (e.g. Readygips, ProSpray Light).
    Application of plaster layers only in conjunction with Fugendeckstreifen Kurt joint tape when jointing.
- Coatings (do not spray on Cleaneo Classic)
  - Dispersion paint (e.g. Intol E.L.F., Malerweiss E.L.F.),
  - Silicate-based emulsion paints with suitable primer.
  - Others on request.

Note	Use a short-hair lambskin roller to prevent paint from entering the perforations and negatively impacting the acoustical effectiveness of the fleece.

- Ceramic tiles (in the non-perforated area)
  - Minimum cladding thickness 18 mm (Diamant: 15 mm), e.g. 2x 12.5 mm with stud spacing 625 mm
  - With a lower cladding thickness reduce the stud spacing to max. 417 mm

Unsuitable coatings and linings

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

Notes	After wallpapering or after application of plasters, quick drying must be ensured through adequate airing. Other coatings or layers and vapour barriers up to about 0.5 mm thickness as well as claddings (with the exception of sheet steel), do not have any influence on the technical fire resistance classification of Knauf Cleaneo Acoustic Wall Systems.

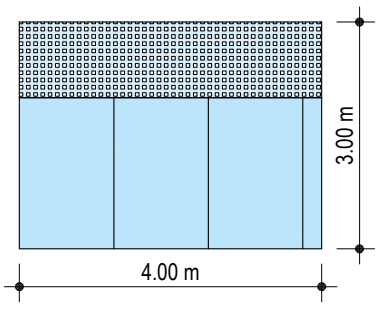
W112C.de
W623C.de
W623D.de
W629C.de

Material requirement
Usage instructions

Material requirement per m² of Cleaneo Acoustic Wall Systems without allowance for loss and waste

Description	Unit	Amount as average value			
		W112C.de	W623C.de	W623D.de	W629C.de
Grid					
Anchoring of the Knauf profiles (to flanking constructional components)					
Suitable anchors, e.g. Knauf ceiling steel dowels with reinforced concrete	pcs	1.6	0.9	0.9	1.6
Alternative Fasteners for the building materials that are specially suitable and non-combustible	pcs	1.6	–	–	–
Anchoring Knauf Universal Bracket					
Suitable anchors, e.g. Knauf ceiling steel dowels with reinforced concrete	pcs	–	1.2	0.7	–
Knauf UW runner; e.g. UW 75	m	0.7	–	–	0.7
Knauf CW stud; e.g. CW 75	m	2.0	–	–	2.0
Metal blind rivet ≥ 3 x 8 mm (connection CW Stud with UW runner)	pcs	2.9	–	–	–
Knauf profile UD 28/27	m	–	0.7	0.7	–
Knauf profile CD 60/27	m	–	3.5	2.0	–
Knauf Universal Bracket for CD 60/27, 120 mm	pcs	–	1.2	0.7	–
Knauf sealing tape strips 70/3.2 mm, 75 mm long	m	–	0.2	0.1	–
Knauf Metal Screws LN 3.5 x 11 (Anchoring suspender or double profile connection)	pcs	–	2.4	1.5	3.0
Knauf Hat-Shaped Channel 98/15; 4 m long	m	1.3	–	1.3	–
Knauf Multi-purpose screw FN 4.3 x 35 (connection of Hat-Shaped Channel with CW stud / CD Channel)	pcs	5	–	5	–
Knauf Trennwandkitt acoustical sealant	pcs	0.2	0.1	0.1	0.2
Alternative Knauf Dichtungsband sealing tape	m	1.6	0.8	0.8	1.6
Insulation layer					
Insulation layer, e.g. Knauf Insulation	m^2	–	1	1	1
Insulation layer 60 mm thick; e.g. Knauf Insulation Trennwand-Dämmrolle TI 140 T	m^2	1	–	–	–
Insulation layer 20 mm thick; e.g. Knauf Insulation Akustik-Dämmplatte TP 120 A	m^2	0.2	–	–	–
Knauf boards					
Diamant 15 mm	m^2	2.70	0.77	0.77	0.77
Diamant 12.5 mm	m^2	0.67	0.67	0.67	0.67
Cleaneo Classic	m^2	0.33	0.33	0.33	0.33
Board strips	m^2	–	0.06	–	0.10
Fastening (fastening of the boards, Knauf fasteners see page 37)					
1st layer Diamant	pcs	9	6	4	6
2nd layer Diamant	pcs	23	14	9	14
Cleaneo Classic	pcs	9	9	9	9
Board strips Diamant 12.5 mm	pcs	–	6	–	6
Jointing					
Knauf filling compound, e.g. Uniflott	kg	0.80	0.40	0.40	0.40
Fugendeckstreifen Kurt joint tape (for front edges)	m	as req.	as req.	as req.	as req.
Trenn-Fix; 65 mm wide, self-adhesive	m	as req.	as req.	as req.	as req.
Knauf edge/corner trims; e.g. Kantenschutzprofil edge trim 23/13	m	as req.	as req.	as req.	as req.

The quantity relates to a partition area of:
H = 3.00 m; L = 4.00 m; A = 12.00 m²
Legend:
Underlined values are dependent on the perforated area
as req. = as required
Material not provided by Knauf = printed in italics



Notes on the document

Knauf technical brochures are the information documents on special topics as well as on the specialist competence from Knauf. The contained information and specifications, 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. In addition, design and structural requirements and those regarding building physics (fire protection 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

- Room Acoustics with Knauf – Fundamentals and concepts, AK01.de
- Room Acoustics with Knauf – Data for planning, AK02.de
- Knauf Metal Stud Partitions, W11.de
- Knauf Furring, W61.de
- Knauf Cleaneo Acoustic Board Ceilings, D12.de
- Installation Instructions Cleaneo SK, K761S-A01.de
- Installation Instructions Cleaneo UFF, K761U-A01.de
- Installation Instructions Cleaneo linear, K761L-A01.de
- Observe the Product Data Sheets of the Knauf system components

Symbols in this technical brochure

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)

Intended use of Knauf systems

Please observe the following:

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

General notes on Knauf systems

Installation zones acc. to DIN 4103-1

- Installation zone 1
  Partitions in rooms where low numbers of persons gather, e.g. dwellings, hotels, office and hospital rooms including corridors and halls or similar.
- Installation zone 2
  Partitions in rooms where large numbers of persons gather, e.g. meeting halls, school classrooms, auditoria, exhibition halls and sales rooms as well as rooms with similar usages.
  Unless otherwise stated, the value in the table is the maximum permissible partition height for installation zone 2 is considered.

Air-cleaning effect

Knauf Cleaneo Classic are perforated or slotted gypsum boards compliant to EN 14190 with air-cleaning effect due to the addition of dehydrated zeolite.

Notes on sound insulation

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

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

Note	The verification according to the new DIN 4109-2:2018-01 is no longer according to calculation values $R_{w,R}$, but rather with the values obtained on the test rig R_w, rounded off to a single position following the decimal point. Only at the end of the forecast after consideration of all the perimeter surfaces (flanking surfaces) involved in the transmission of sound is an element of forecast uncertainty included in dependence on the type of separating constructional component. For a transition period the Knauf brochures will specify both the test stand values as well as the calculated values used up to now. If values are stated instead of rated test stand values, that are based on calculated prognoses or are derived from measured test stand values, they will be stated without positions following the decimal point.

Construction notes

Movement joints

Movement joints of the main structure should be integrated into the construction of the Cleaneo Acoustic Wall systems. Movement joints are to be installed about every 15 m on continuous Cleaneo Acoustic Wall systems.

Certificate of usability

Knauf system	Fire protection	Sound insulation	Sound absorption
W112C.de	abP P-SAC-02/III-797	A 010-05.14	A 010-05.14
W623C.de	–		A 013-04.16
W623D.de	–		
W629C.de	–		

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.

USE THE VALUABLE SERVICES FROM KNAUF

KNAUF DIREKT

Our technical advisory service – from professionals for professionals! Choose the direct line to “just in time” consultation and benefit from our extensive experience giving you the assurance that you need.

› **www.knauf.com**

KNAUF AKADEMIE

KNAUF AKADEMIE

We offer you fresh knowledge for the challenges of today and tomorrow with top-end seminars for the needs of practice. Use this advantage for you and your employees as education is the key to the future!

› **www.knauf.de**

KNAUF DIGITAL

Web, App or Social Media – Technical documentation, calculation tools, interactive animations, and lots more are available around the clock up-to-date and free-of-charge in the digital world of Knauf. Clicks that are really worthwhile!

› **www.knauf.de**

Knauf Gips KG
Am Bahnhof 7
97346 Iphofen
Germany

Knauf AMF
Ceiling Systems

Knauf Aquapanel
TecTem® loose fill insulation material

Knauf Bauprodukte
Professional DIY Solutions

Knauf Design
Competence in Surfaces

Knauf Gips
Drywall Systems
Floor Systems
Plaster & Façade Systems

Knauf Insulation
Insulation system for renovation and new projects

Knauf Integral
Gypsum fibre technology for floors, walls and ceilings

Knauf PFT
Machine Technology and Plant Engineering

Marbos
Mortar systems for cobblestone pavingu

Sakret Bausysteme
Dry mortars for new projects and renovations

AK04.de/eng/01.18/0/TBr