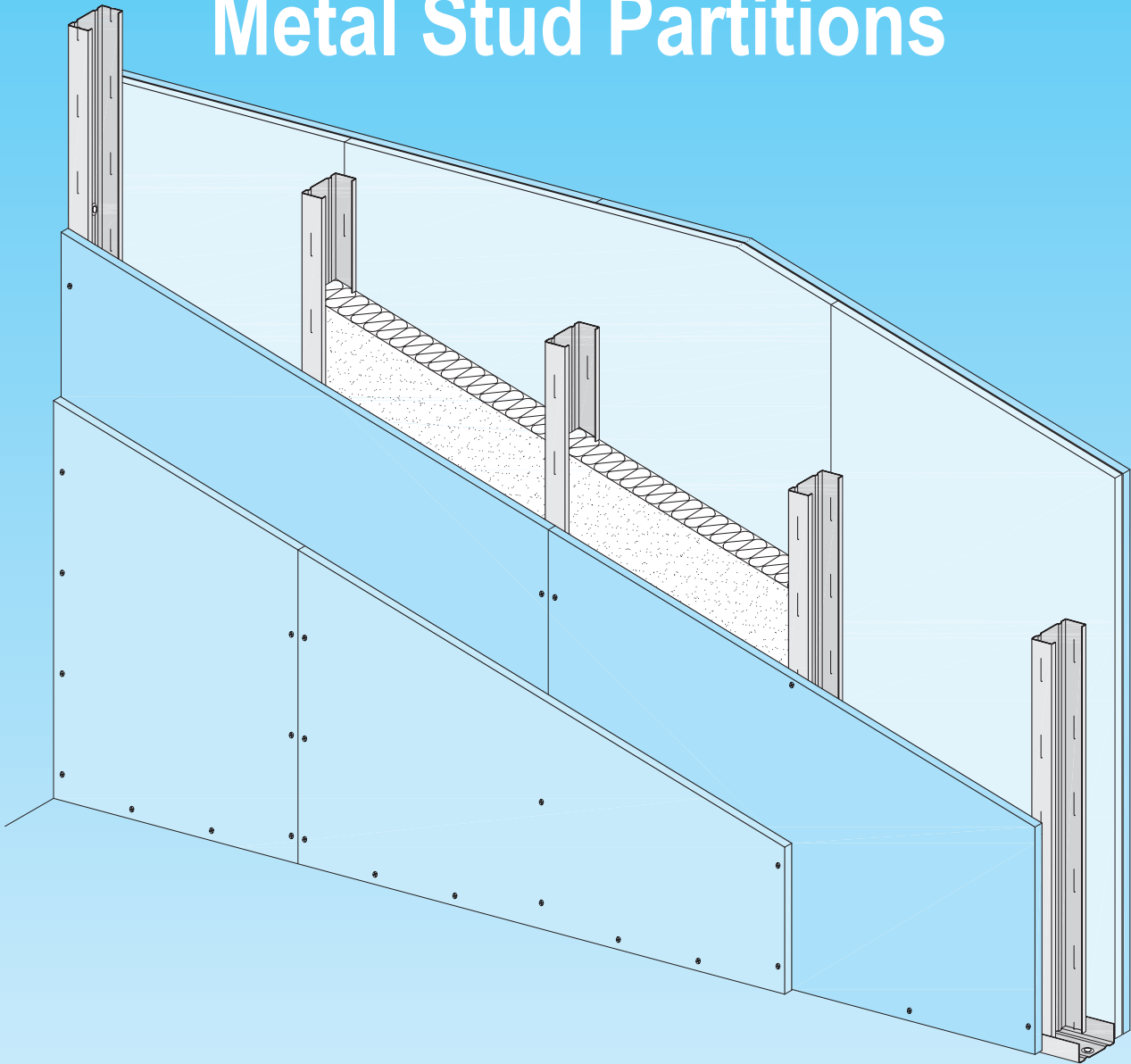


Knauf

Metal Stud Partitions



- | | |
|-------------|--|
| W111 | Knauf Metal Stud Partition - single metal stud frame, single layer cladding |
| W112 | Knauf Metal Stud Partition - single metal stud frame, double layer cladding |
| W113 | Knauf Metal Stud Partition - single metal stud frame, triple layer cladding |
| W115 | Knauf Metal Stud Partition - double metal stud frame, double layer cladding |
| W116 | Knauf Installation Wall - linked double metal stud frame, double layer cladding |
| W118 | Knauf High Security Wall - single metal stud frame, triple layer cladding + metal sheet |
| K234 | Knauf Fireboard Wall A1 - single metal stud frame, single layer Fireboard cladding |

The structural, static 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.

| System | Technical data | | | | weight | Sound protection proof $R_{w,R}$ | In-sulation nominal thickness | Thermal insul. U value |
|--------|----------------|---------------|-----------|------|----------------------------|----------------------------------|-------------------------------|---------------------------------|
| | dimensions | cladding | | | | | | |
| | wall thickness | stud (cavity) | thickness | type | | | | |
| | D | h | d | | approx. kg/m^2 1) | dB 2) | mm 3) | $\text{W}/(\text{m}^2\text{K})$ |
| | mm | mm | mm | | | | | |

For legend see page 3

W111 Metal Stud Partition single metal stud frame - single layer cladding

| Diagram | Technical data | | | | weight | Sound protection proof $R_{w,R}$ | In-sulation nominal thickness | Thermal insul. U value |
|---------|----------------|---------------|-----------|---------------------------|----------------------------|----------------------------------|-------------------------------|---------------------------------|
| | dimensions | cladding | | | | | | |
| | wall thickness | stud (cavity) | thickness | type | | | | |
| | D | h | d | | approx. kg/m^2 1) | dB 2) | mm 3) | $\text{W}/(\text{m}^2\text{K})$ |
| | mm | mm | mm | | | | | |
| | 75 | 50 | 12.5 | GKB GKF | 25 | 41 | 40 | 0.66 |
| | 100 | 75 | | | | | 40 | 0.65 |
| | | | | | | | 60 | 0.50 |
| | 125 | 100 | 12.5 | GKB GKF | 25 | 42 | 40 | 0.65 |
| | | | | | | | 60 | 0.49 |
| | | | | | | | 80 | 0.40 |
| | 75 | 50 | 12.5 | KNAUF Piano Piano F | 25.5 | 45 | 40 | 0.66 |
| | 100 | 75 | | | | | 40 | 0.65 |
| | | | | | | | 60 | 0.50 |
| | 125 | 100 | 12.5 | KNAUF Piano Piano F | 25.5 | 46 | 40 | 0.65 |
| | | | | | | | 60 | 0.49 |
| | | | | | | | 80 | 0.40 |

W112 Metal Stud Partition single metal stud frame - double layer cladding

| Diagram | Technical data | | | | weight | Sound protection proof $R_{w,R}$ | In-sulation nominal thickness | Thermal insul. U value |
|---------|----------------|---------------|-----------|---------------------------|----------------------------|----------------------------------|-------------------------------|---------------------------------|
| | dimensions | cladding | | | | | | |
| | wall thickness | stud (cavity) | thickness | type | | | | |
| | D | h | d | | approx. kg/m^2 1) | dB 2) | mm 3) | $\text{W}/(\text{m}^2\text{K})$ |
| | mm | mm | mm | | | | | |
| | 100 | 50 | 2x 12,5 | GKB GKF | 45 | 50 | 40 | 0.61 |
| | 125 | 75 | | | | | 40 | 0.60 |
| | | | | | | | 60 | 0.47 |
| | 150 | 100 | 2x 12,5 | GKB GKF | 45 | 51 | 40 | 0.60 |
| | | | | | | | 60 | 0.46 |
| | | | | | | | 80 | 0.38 |
| | 100 | 50 | 2x 12,5 | KNAUF Piano Piano F | 46.5 | 53 | 40 | 0.61 |
| | 125 | 75 | | | | | 40 | 0.60 |
| | | | | | | | 60 | 0.47 |
| | 150 | 100 | 2x 12,5 | KNAUF Piano Piano F | 46.5 | 54 | 40 | 0.60 |
| | | | | | | | 60 | 0.47 |
| | | | | | | | 80 | 0.38 |

W115 Metal Stud Partition double metal stud frame - double layer cladding

| Diagram | Technical data | | | | weight | Sound protection proof $R_{w,R}$ | In-sulation nominal thickness | Thermal insul. U value |
|---------|----------------|---------------|-----------|---------------------------|----------------------------|----------------------------------|-------------------------------|---------------------------------|
| | dimensions | cladding | | | | | | |
| | wall thickness | stud (cavity) | thickness | type | | | | |
| | D | h | d | | approx. kg/m^2 1) | dB 2) | mm 3) | $\text{W}/(\text{m}^2\text{K})$ |
| | mm | mm | mm | | | | | |
| | 155 | 105 | 2x 12.5 | GKB GKF | 48 | 59 | 2x40 | 0.37 |
| | 205 | 155 | | | | | 60 | 0.47 |
| | | | | | | | 2x60 | 0.27 |
| | 255 | 205 | 2x 12.5 | GKB GKF | 48 | 60 | 80 | 0.37 |
| | | | | | | | 2x80 | 0.21 |
| | | | | | | | | |
| | 155 | 105 | 2x 12.5 | KNAUF Piano Piano F | 49.5 | 63 | 2x40 | 0.37 |
| | 205 | 155 | | | | | 65 | 0.27 |
| | 255 | 205 | | | | | 67 | 0.21 |

| System | Technical data | | | | weight | Sound protection proof $R_{w,R}$ | In-sulation nominal thickness | Thermal insul. U value |
|--------|-------------------------|--------------------------|-----------------------------|------|----------------------------|----------------------------------|-------------------------------|---------------------------------|
| | wall thickness D | stud (ca- vity) h | cladding thickness d | type | | | | |
| | mm | mm | mm | | approx. kg/m^2 1) | dB 2) | mm 3) | $\text{W}/(\text{m}^2\text{K})$ |

W113 Metal Stud Partition single metal stud frame - triple layer cladding

| Diagram | Wall thickness D (mm) | Stud height h (mm) | Cladding thickness d (mm) | Cladding type | Weight (kg/m ²) | Sound protection proof $R_{w,R}$ (dB) | In-sulation nominal thickness (mm) | Thermal insul. U value |
|---------|------------------------------|---------------------------|----------------------------------|---------------|-----------------------------|---------------------------------------|------------------------------------|------------------------|
| | 125 | 50 | | | | 51 | 40 | 0.57 |
| | 150 | 75 | 3x 12.5 | GKB GKF | 66 | 53 | 60 | 0.44 |
| | 175 | 100 | | | | 55 | 80 | 0.36 |

W116 Installation Wall double metal stud frame - double layer cladding

| Diagram | Wall thickness D (mm) | Stud height h (mm) | Cladding thickness d (mm) | Cladding type | Weight (kg/m ²) | Sound protection proof $R_{w,R}$ (dB) | In-sulation nominal thickness (mm) | Thermal insul. U value |
|---------|------------------------------|---------------------------|----------------------------------|---------------|-----------------------------|---------------------------------------|------------------------------------|------------------------|
| | ≥ 220 | ≥ 170 | 2x 12.5 | GKB GKF | 49 | 52 | 40 | 0.60 |

W118 High Security Wall single metal stud frame - triple layer cladding + metal sheet layers

| Diagram | Wall thickness D (mm) | Stud height h (mm) | Cladding thickness d (mm) | Cladding type | Weight (kg/m ²) | Sound protection proof $R_{w,R}$ (dB) | In-sulation nominal thickness (mm) | Thermal insul. U value |
|---------|------------------------------|---------------------------|----------------------------------|----------------------------------|-----------------------------|---------------------------------------|------------------------------------|------------------------|
| | 177 | 100 | 3x 12.5 + 2x 0.5 mm | GKB GKF metal sheet layers | 82 | ≥ 55 | 80 | 0.36 |

K234 Fireboard Partition A1 single metal stud frame - single layer cladding

| Diagram | Wall thickness D (mm) | Stud height h (mm) | Cladding thickness d (mm) | Cladding type | Weight (kg/m ²) | Sound protection proof $R_{w,R}$ (dB) | In-sulation nominal thickness (mm) | Thermal insul. U value |
|---------|------------------------------|---------------------------|----------------------------------|---------------|-----------------------------|---------------------------------------|------------------------------------|------------------------|
| | 140 | 100 | 20 | Fireboard | 42 | 47 | 40+60 | 0.34 |

- 1) weight without insulation
- 1.1) weight including insulation 40+60 mm, density 40 kg/m³
- 2) $R_{w,R}$ = calculation value of sound reduction index of the separating construction component according to DIN 4109, without longitudinal transmission via flanking components
- 3) insulation according to DIN EN 13162
length related flow resistance according to DIN EN 29053: $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$
thermal conductivity class: 040

Note

Sound protection values are valid only in connection with the use of Knauf studs.

Proofs: sound protection

- | | |
|---|--|
| 1 | Knauf Test Report Partitions 001, some values interpolated |
| 2 | Knauf Test Report Partitions 005, some values interpolated |
| 3 | Knauf Test Report Partitions 006, some values interpolated |
| 4 | Knauf Test Report Partitions 008, some values interpolated |
| 5 | Knauf Test Report Partitions 007 |
| 6 | Knauf Test Report Partitions 013 |
| 7 | Knauf Test Report Partitions 009 |
| 8 | Knauf Test Report Partitions 014 |

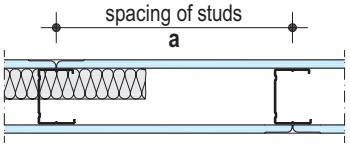
Knauf Metal Stud Partitions

W11

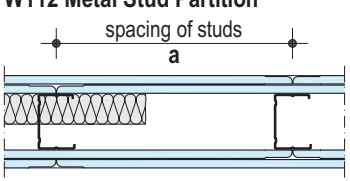
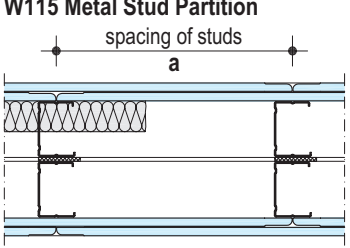
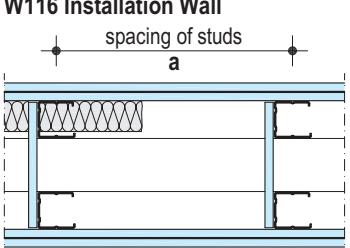
Fire Protection: Knauf Solutions, Proof by Test Certificate

| System | Fire rating | Cladding | | Insulation | | | Max. spacing of studs -a- cm | Proof |
|--------|-------------|--|-------------------------|------------|------------------------------|--------------------------------------|------------------------------------|-------|
| | | type/ building material class | min. thickness mm | type | min. thick- ness mm | min. density kg/m ³ | | |

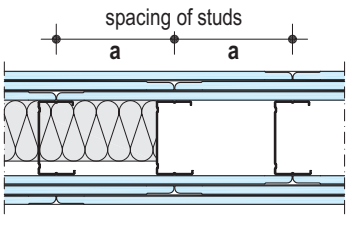
W111 Metal Stud Partition

| | | | | | | | |
|--|-----|------------------------------|--------|--|--|-----------------------|--------------------|
|  | F30 | Fire Resistant Boards GKF A2 | 12.5 * | without or insulation min. B2 | | Knauf CW stud 62.5 | ABP P-3125/6619 |
| | | | | | | | |

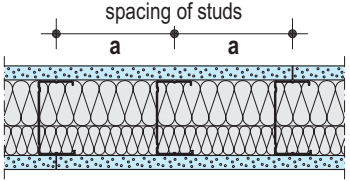
W112 / W115 / W116 Metal Stud Partition

| | | | | | | |
|--|-----|------------------------------|---------|--|-----------------------|-------------------------------------|
|  | F30 | Gypsum Boards GKB A2 | 2x 12.5 | without or insulation min. B2 | Knauf CW stud 62.5 | ABP P-3125/6619 (W112) |
| | | | | | | ABP P-3157/4012 (W115 / W116) |
|  | F90 | Fire Resistant Boards GKF A2 | 2x 12.5 | without or insulation min. B2 | Knauf CW stud 62.5 | ABP P-3070/0609 (W112) |
|  | | | | | | ABP P-3157/4012 (W115 / W116) |

W118 High Security Wall

| | | | | | | |
|--|-----|------------------------------|---------|-------------------------------|------------------------|--------------------|
|  | F90 | Fire Resistant Boards GKF A2 | 3x 12.5 | without or mineral wool | Knauf CW stud 31.25 | ABP P-3073/0639 |
| | | + 2 layers metal sheet | 2x 0.5 | G | | |

K234 Fireboard Partition A1

| | | | | | | | |
|--|-----|-----------------------------|----|----------------|----------|------------------------|--------------------|
|  | F90 | Fireboard A1 Z-PA-III 4.290 | 20 | mineral wool S | 40+60 40 | Knauf CW stud 31.25 | ABP P-3076/0669 |
| | | | | | | | |

Mineral wool insulation layer acc. to DIN EN 13162, chapter 3.1.1

| | |
|---|-----------------------------|
| S building material class A melting point ≥ 1000° C acc. to DIN 4102-17 | G building material class A |
|---|-----------------------------|

*) cover cut edge joints with profiles



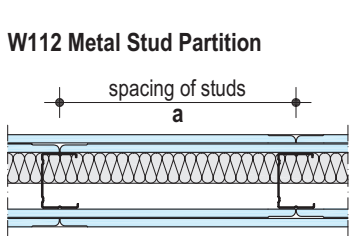
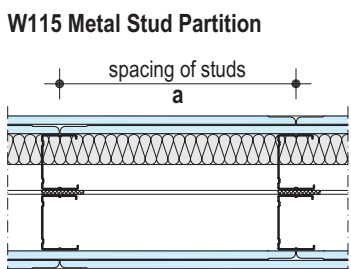
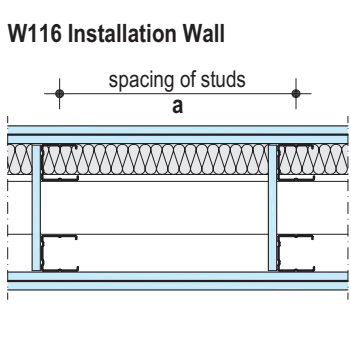
Fire Protection: DIN Solutions

| System | Fire rating | Cladding | | Insulation | | | Max. spacing of studs -a- cm | Proof |
|--------|-------------|----------------------------------|-------------------|------------|-------------------|--------------------------------|------------------------------|-------|
| | | type/ building material class | min. thickness mm | type | min. thickness mm | min. density kg/m ³ | | |

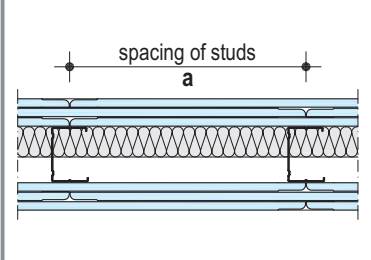
W111 Metal Stud Partition

| | | | | | | | | |
|---|-----|-----------------------|------|--------------------------|----|----|------------------------|--|
|  | F30 | Fire Resistant Boards | 12.5 | mineral wool S | 40 | 30 | CW stud 62.5 | DIN 4102-4 chapter 4.10 table 48 |
| | | GKF A2 | | | | | | |

W112 / W115 / W116 Metal Stud Partition

| | | | | | | | | |
|---|------|------------------------------------|--------------|--------------------------|-----|-----|------------------------|--|
|  | F30 | Gypsum Boards GKB A2 | 2x 12.5 | | 40 | 30 | | |
| | F60 | | 2x 12.5 | | 40 | 40 | | |
|  | F90 | Fire Resistant Boards GKF A2 | 15 + 12.5 | mineral wool S | 40 | 100 | CW stud 62.5 | DIN 4102-4 chapter 4.10 table 48 |
| | | | 2x 12.5 | | 60 | 50 | | |
|  | F120 | GKF A2 | 2x 18 *) | | 40 | 40 | | |
| | | | 2x 15 | 60 | 100 | | | |
| | | | 25 + 12.5 *) | 80 | 50 | | | |
| | F180 | | | | 60 | 100 | | |
| | | | | | 80 | 50 | | |

W113 Metal Stud Partition

| | | | | | | | | |
|---|------|------------------------------------|---------|--------------------------|----|-----|------------------------|--|
|  | F120 | Fire Resistant Boards GKF A2 | 3x 12.5 | mineral wool S | 40 | 40 | CW stud 62.5 | DIN 4102-4 chapter 4.10 table 48 |
| | F180 | | | | 60 | 100 | | |
| | | | | | 80 | 50 | | |

*) alternative option:
• 3x 12.5 mm Knauf Boards GKF

Mineral wool insulation according to DIN EN 13162, chapt. 3.1.1

S building material class A
melting point $\geq 1000^\circ\text{C}$
according to DIN 4102-17

Fire Protection: Connections

Connections of "light-weight" partitions to classified suspended ceilings

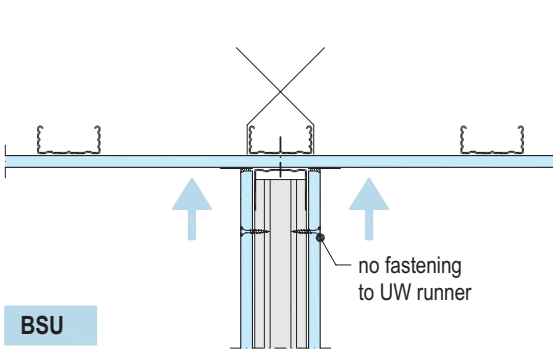
scheme drawings

Connections of partitions to classified ceilings (suspended ceilings) are only allowed if it is ensured that in case of fire and a premature collapse of the partition the scrap of the partition may fall down without additional loading of the ceiling.

The following solutions are optional for the connection:

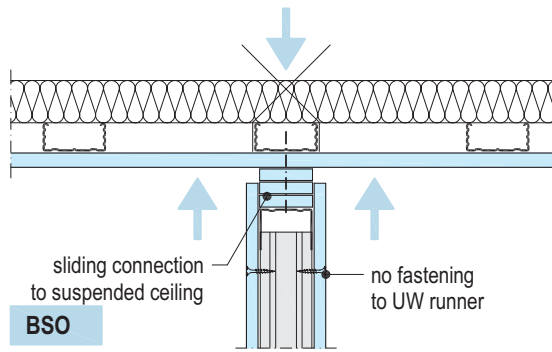
Fire protection from below

For suspended ceilings with fire protection **from below** do not fasten cladding to UW runner, but apply cladding tightly up to ceiling.



Fire protection from below and from above / from above

For suspended ceilings with fire protection **from below and from above / from above** install a sliding ceiling connection as standard implementation with at least 15 mm allowable movement.



Note

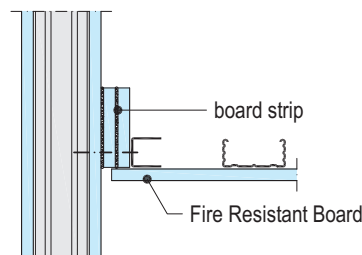
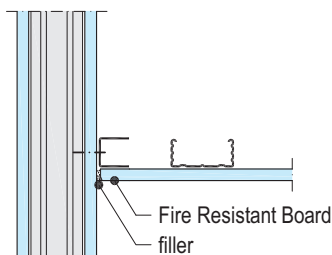
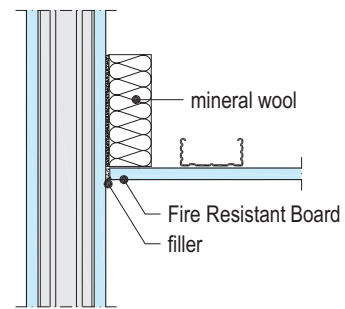
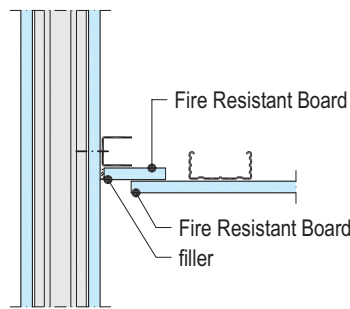
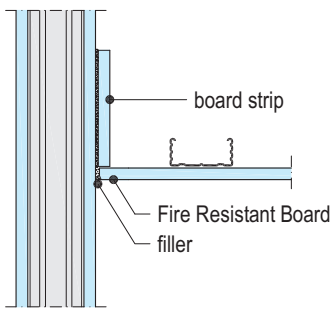
In case of fire protection requirements for the partition the suspended ceiling should have at least the same fire rating.

Fire protective connections to walls

Examples - scheme drawings

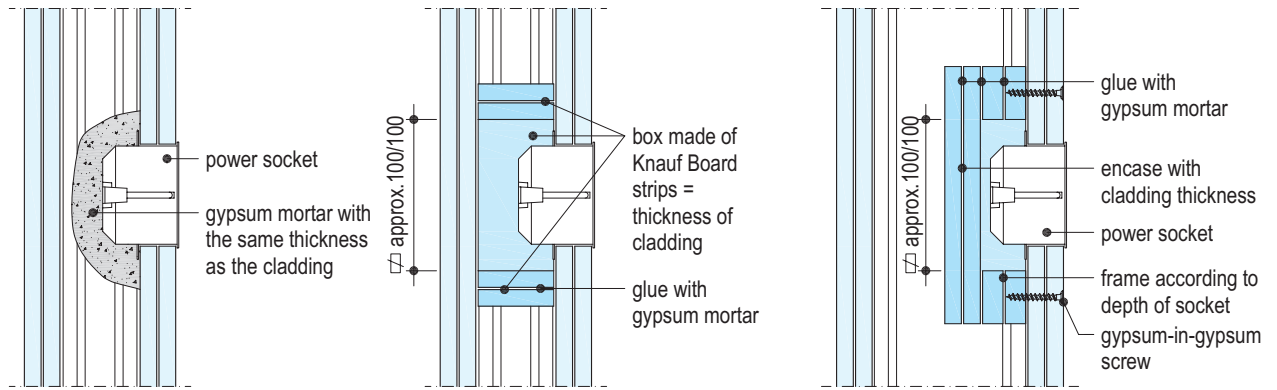
Suspended ceilings in connection with basic ceilings of building type I to IV as well as suspended ceilings solely for fire protection from below and / or from above that are fire rated F30 to F90 can be connected to partitions if they are of the same fire rating.

Wall background should be even in the area of the connection. Specific levelling preparations might be necessary. The connection of the suspended ceiling has to be tight and covered.



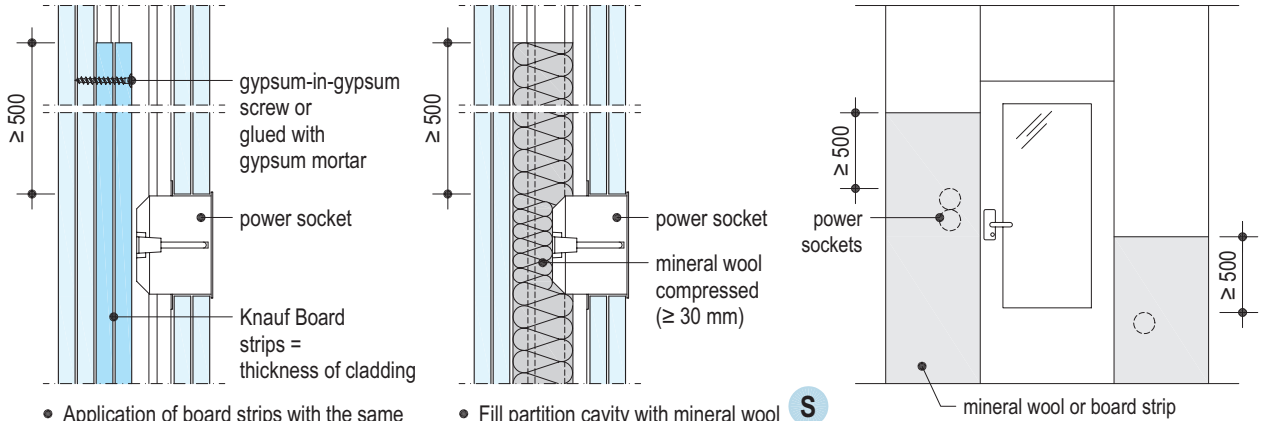
Fire Protection: Installation of Power Sockets

Partitions with insulation min. B2 resp. without insulation



- power sockets covering with gypsum mortar
- power sockets covering with gypsum boards

• Only for single metal stud partitions



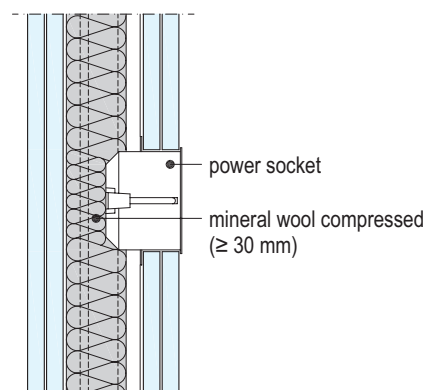
- Application of board strips with the same thickness as the cladding; glue to rear cladding or fasten with gypsum-in-gypsum screws. The board strip should cover the following area completely: min. 500 mm above the highest power socket down to the floor and laterally to the next stud on each side.
- Fill partition cavity with mineral wool secured against sliding. The mineral wool should cover the following area: completely: min. 500 mm above the highest power socket down to the floor and laterally to the next stud on each side. Compression of insulation layer is allowed down to a thickness of ≥ 30 mm. *)

S *) **Thickness** of mineral wool in cm multiplied with **density** of mineral wool in kg/m^3 has to be at least **180**.

example:

$$6 \text{ cm} \times 30 \text{ kg/m}^3 = 180$$

Partitions according to DIN 4102-4 with mineral wool insulation melting point $\geq 1000^\circ\text{C}$



- insulation layers that are necessary for fire protection should be preserved but are allowed to be compressed down to ≥ 30 mm.

Note

- Power sockets, switch sockets, splitter sockets etc. are allowed to be installed at any position, but not opposite to each other.
- Entry of single electric cables is allowed. The remaining opening has to be closed with gypsum mortar.

Mineral wool insulation layer acc. to DIN EN 13162, chapter 3.1.1

S building material class A melting point $\geq 1000^\circ\text{C}$ acc. to DIN 4102-17

scheme drawings - all dimensions in mm

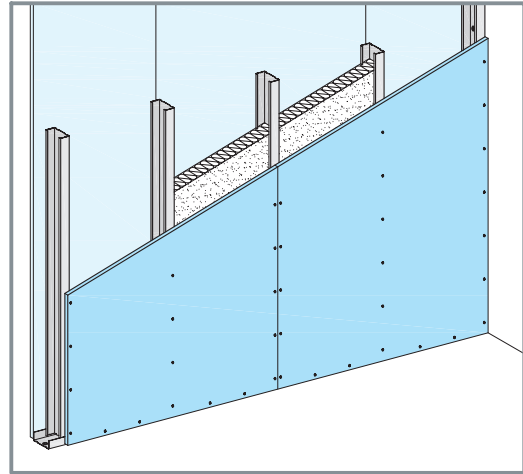
Knauf Metal Stud Partition

W111

Single Metal Stud Frame, Single Layer Cladding

Wall heights

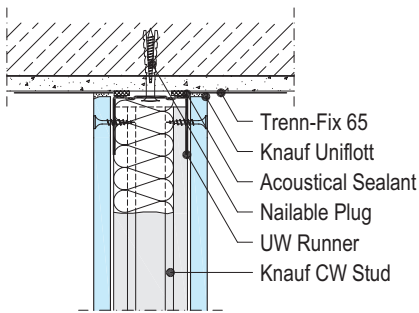
| Stud | Spacing of studs | Maximum wall heights | | | |
|-----------------------------|------------------|-----------------------|-------------|---------------------|-------------|
| | | without fire protect. | | incl. fire protect. | |
| metal thickness 0.6 mm | cm | 1 | 2 | 1 | 2 |
| | | m | m | m | m |
| Knauf Stud CW 50 | 62.5 | 3 | 2.75 | 3 | 2.75 |
| | 41.7 | 4 | 3.75 | - | - |
| | 31.25 | 5 | 4.75 | 4 *) | - |
| Knauf Stud CW 75 | 62.5 | 4,5 | 3.75 | 4.5 | 3.75 |
| | 41.7 | 6 | 5.25 | - | - |
| | 31.25 | 7 | 6.25 | 5 *) | - |
| Knauf Stud CW 100 | 62,5 | 5 | 4.25 | 5 | 4.25 |
| | 41.7 | 6,5 | 5.75 | - | - |
| | 31.25 | 8 | 7.25 | 5.5*) | - |



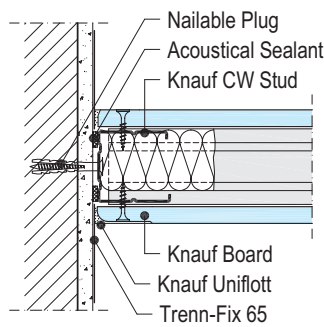
Bold printed values are maximum allowable heights of metal stud partitions according to DIN 18183

*) Values according to ABP P-3125/6619

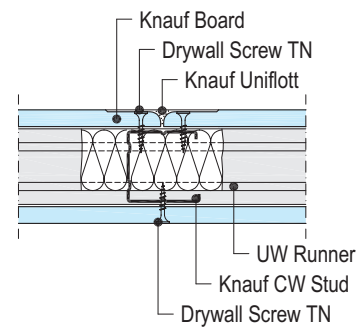
Details scale 1:5



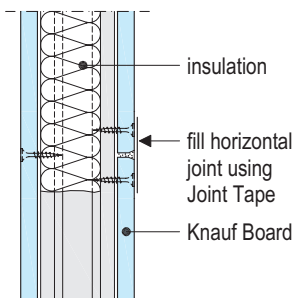
W111-VO1 Connection to ceiling



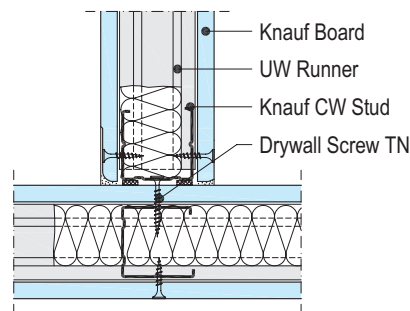
W111-A1 Connection to solid wall



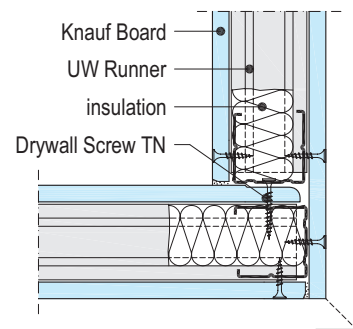
W111-B1 Joint



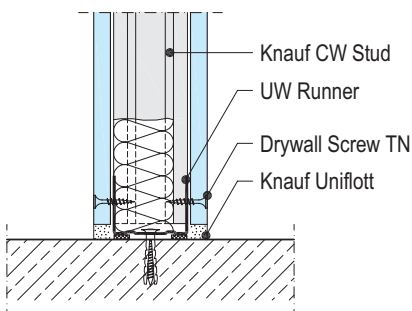
W111-VM1 Joint



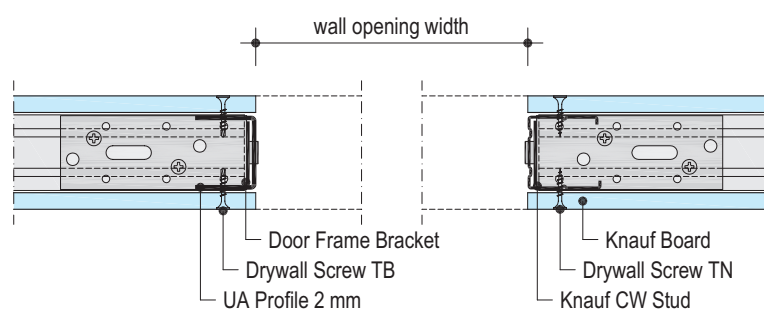
W111-C1 T-junction



W111-D1 Corner



W111-VU1 Connection to floor



W111-E1 Door opening with UA Profile

W111-E2 Door opening with Knauf CW Stud

Note For ceramic tiling maximum spacing of studs is 42 cm. (Knauf recommends W112 for ceramic tiling)

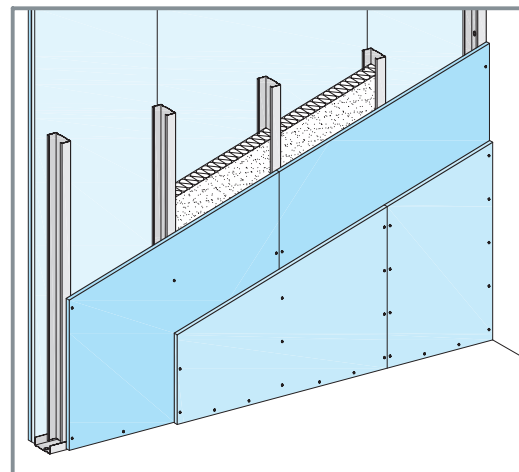
Knauf Metal Stud Partition

W112

Single Metal Stud Frame, Double Layer Cladding

Wall heights

| Stud | Spacing of studs | Maximum wall heights | | | |
|-----------------------------|------------------|--|-------------|---------------------------------------|-------------|
| | | without fire protect. installation zone (definition see page 22) | | incl. fire protect. installation zone | |
| metal thickness 0.6 mm | cm | 1 | 2 | 1 | 2 |
| | | m | m | m | m |
| Knauf stud CW 50 | 62.5 | 4 | 3.5 | 4 | 3.5 |
| | 41.7 | 5 | 4.5 | 5 | 4.5 |
| | 31.25 | 6 | 5.5 | 6 | 5.5 |
| Knauf stud CW 75 | 62.5 | 5.5 | 5 | 5.5 | 5 |
| | 41.7 | 6.5 | 6 | 6.5 | 6 |
| | 31.25 | 7.5 | 7 | 7.5 | 7 |
| Knauf stud CW 100 | 62.5 | 6.5 | 5.75 | 6.5 | 5.75 |
| | 41.7 | 7.5 | 7 | 7.5 | 7 |
| | 31.25 | 9 | 8.5 | 9 | 8.5 |



Bold printed values are maximum allowable heights of metal stud partitions acc. to DIN 18183

Details scale 1:5

W112-VO1 Connection to ceiling

W112-A1 Connection to solid wall

W112-B1 Joint

W112-VM1 Joint

W112-C1 T-junction

W112-D1 Corner

W112-VU1 Connection to floor

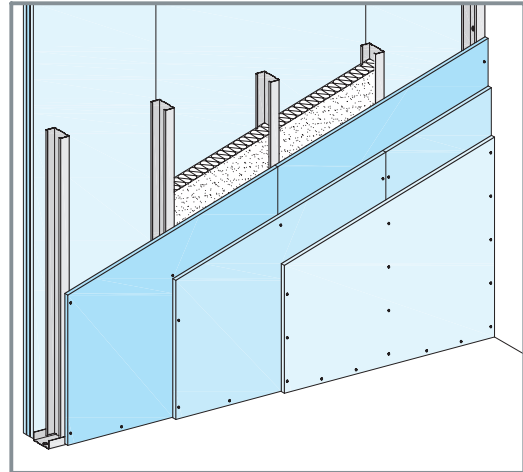
W112-E1 Door opening with UA Profile

W112-E2 Door opening with Knauf CW Stud

Single Metal Stud Frame, Triple Layer Cladding

Wall heights

| Stud | Spacing of studs | Maximum wall heights | | | |
|------------------------|------------------|-----------------------|-----|---------------------|--------|
| | | without fire protect. | | incl. fire protect. | |
| metal thickness 0.6 mm | cm | 1 m | 2 m | 1 m | 2 m |
| Knauf stud CW 50 | 62.5 | 4.5 | 4 | 4 *) | 3.5*) |
| | 41.7 | 5.5 | 5 | 5 | 4.5 |
| | 31.25 | 6.5 | 6 | 6 | 5.5 |
| Knauf stud CW 75 | 62.5 | 6 | 5.5 | 5.5*) | 5 *) |
| | 41.7 | 7 | 6.5 | 6.5 | 6 |
| | 31.25 | 8 | 7.5 | 7.5 | 7 |
| Knauf stud CW 100 | 62.5 | 7 | 6.5 | 6.5*) | 5.75*) |
| | 41.7 | 8 | 7.5 | 7.5 | 7 |
| | 31.25 | 9.5 | 9 | 9 | 8.5 |



*) max. wall heights for fire protection F120 to F180.

Details scale 1:5

W113-VO1 Connection to ceiling

W113-A1 Connection to solid wall

W113-B1 Joint

W113-VM1 Joint

W113-C1 T-junction

W113-D1 Corner

W113-VU1 Connection to floor

W113-E1 Door opening with UA Profile

W113-E2 Door opening with Knauf CW Stud




Labels in diagrams include: Trenn-Fix 65, Knauf Uniflott, Acoustical Sealant, Nailable Plug, UW Runner, Knauf CW Stud, Knauf Boards, Drywall Screw TN, Knauf Uniflott, UW-Profil, Drywall Screw TN, insulation, Corner Trim or Alu Corner Trim if necessary, Door Frame Bracket, Drywall Screw TB, UA Profile 2 mm, wall opening width, Knauf Boards, Drywall Screw TN, Knauf CW Stud.

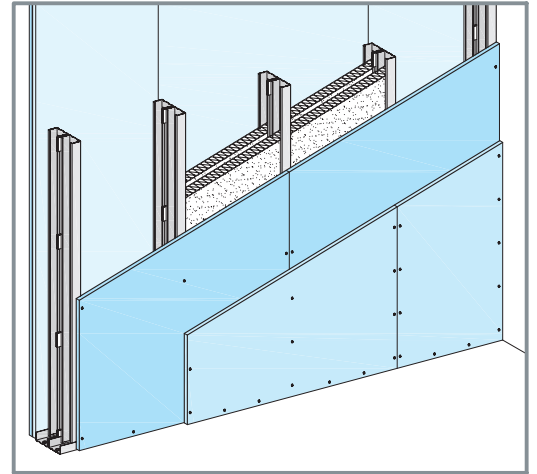
Knauf Metal Stud Partition

W115

Double Metal Stud Frame, Double Layer Cladding

Wall heights

| Stud | Spacing of studs | Maximum wall heights | | | |
|--|------------------|-----------------------|-------------------|--|-------------------|
| | | without fire protect. | | incl. fire protect. installation zone (definition see page 22) | |
| metal thickness 0.6 mm | cm | 1 m | 2 m | 1 m | 2 m |
|  Knauf stud CW 50 | 62.5 | 3.3 (4.5) | 2.8 (4) | 3.3 (4.5) | 2.8 (4) |
|  Knauf stud CW 75 | 62.5 | 4.5 (6) | 4 (5.5) | 4.5 (6) | 4 (5.5) |
|  Knauf stud CW 100 | 62.5 | 5.5 (6.5) | 5 (6) | 5.5 (6.5) | 5 (6) |



Bold printed values are recommended by Knauf

() values are maximum allowable heights of metal stud partitions acc. to DIN 18183

Details scale 1:5

W115-V01 Connection to ceiling
Labels: Trenn-Fix 65, Knauf Uniflott, Acoustical Sealant, UW Runner, Nailable Plug, Knauf CW Stud

W115-A1 Connection to solid wall
Labels: Nailable Plug, Acoustical Sealant, Knauf CW Stud, UW Runner, self-adhesive insulation strip, Uniflott, Knauf Boards, Trenn-Fix 65

W115-B1 Joint
Labels: Knauf Uniflott, Drywall Screw TN

W115-VM1 Joint
Labels: self-adhesive insulation strip spacing = 50 cm, Knauf Boards, Drywall Screw TN, insulation

W115-C1 T-junction
Labels: insulation, UW Runner, Knauf CW Stud, Knauf Boards

W115-D1 Corner
Labels: Corner Trim or Alu Corner Trim if necessary

W115-VU1 Connection to floor
Labels: Knauf Boards, Knauf CW Stud, self-adhesive insulation strip, UW Runner, Drywall Screw TN, Knauf Uniflott


W115-E1 Door opening with UA Profile
Labels: wall opening width, UA Profile 2 mm, insulation strip continuously, Drywall Screw TB, Knauf Boards, Door Frame Bracket

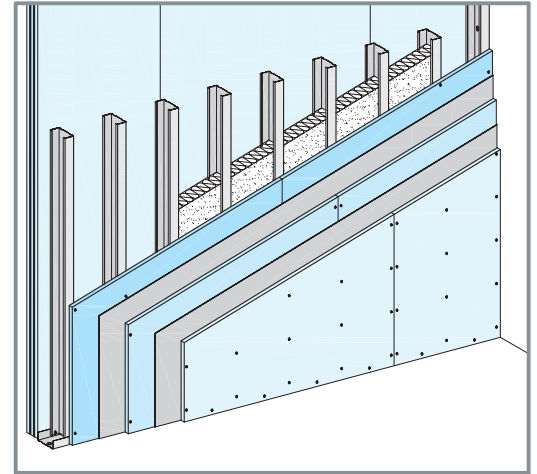
Knauf High Security Wall

W118

Single Metal Stud Frame, Triple Layer Cladding + Metal Sheets

Wall heights

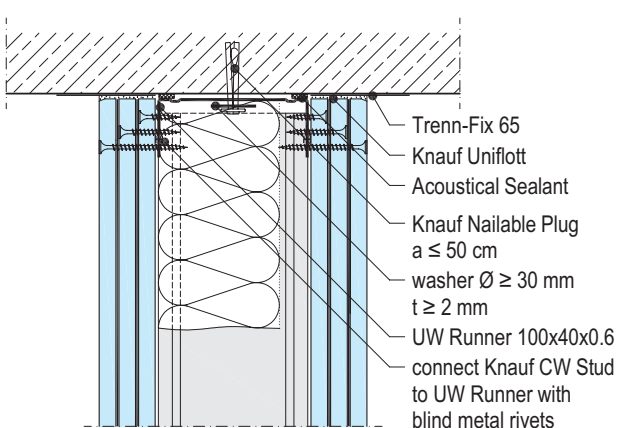
| Stud | Spacing of studs | Maximum wall heights | |
|---|------------------|-----------------------|--|
| | | without fire protect. | incl. fire protect. installation zone (definition see page 22) |
| metal thickness 0.6 mm | cm | 1 m | 2 m |
|  Knauf stud CW 100 | 31.25 | 9 | 9 |



Note

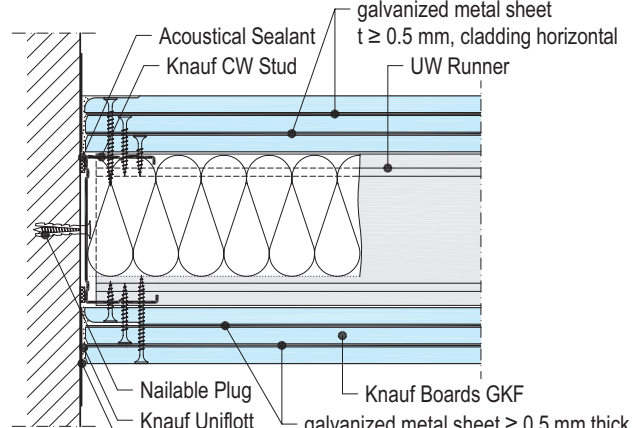
The Knauf High Security Wall meets the requirements of fire walls as well

Details scale 1:5



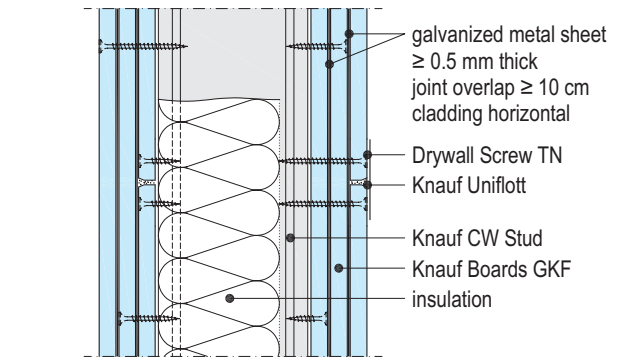
W118-VO1 Connection to ceiling

- Trenn-Fix 65
- Knauf Uniflott
- Acoustical Sealant
- Knauf Nailable Plug a ≤ 50 cm
- washer Ø ≥ 30 mm t ≥ 2 mm
- UW Runner 100x40x0.6
- connect Knauf CW Stud to UW Runner with blind metal rivets



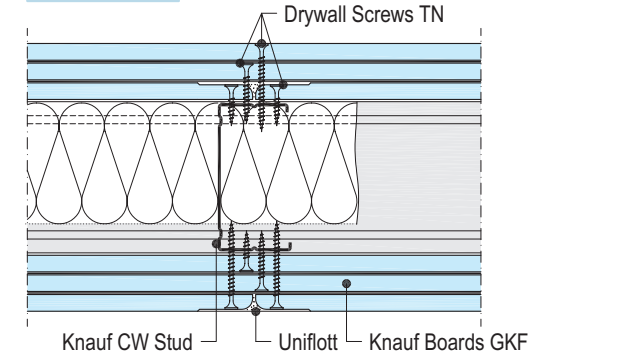
W118-A1 Connection to solid wall

- Acoustical Sealant
- Knauf CW Stud
- galvanized metal sheet t ≥ 0.5 mm, cladding horizontal
- UW Runner
- Nailable Plug
- Knauf Uniflott
- Trenn-Fix 65
- Knauf Boards GKF
- galvanized metal sheet ≥ 0.5 mm thick cladding horizontal



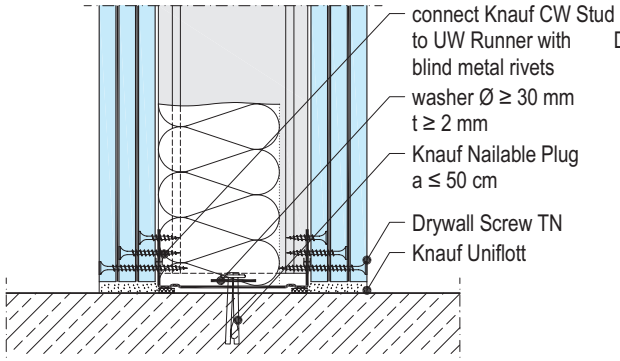
W118-VM1 Joint

- galvanized metal sheet ≥ 0.5 mm thick joint overlap ≥ 10 cm cladding horizontal
- Drywall Screw TN
- Knauf Uniflott
- Knauf CW Stud
- Knauf Boards GKF
- insulation



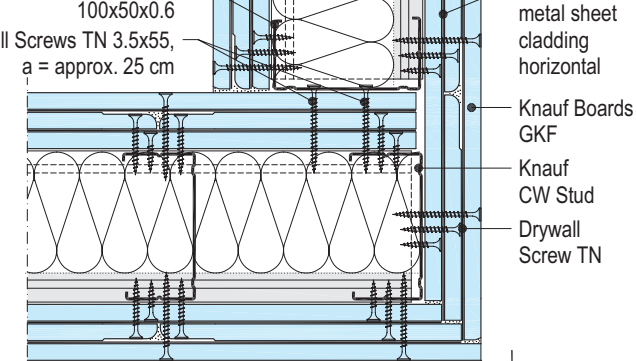
W118-B1 Joint

- Drywall Screws TN
- Knauf CW Stud
- Uniflott
- Knauf Boards GKF



W118-VU1 Connection to floor

- connect Knauf CW Stud to UW Runner with blind metal rivets
- washer Ø ≥ 30 mm t ≥ 2 mm
- Knauf Nailable Plug a ≤ 50 cm
- Drywall Screw TN
- Knauf Uniflott



W118-D1 Corner


- Knauf CW Stud 100x50x0.6
- Drywall Screws TN 3.5x55, a = approx. 25 cm
- galvanized metal sheet cladding horizontal
- Knauf Boards GKF
- Knauf CW Stud
- Drywall Screw TN

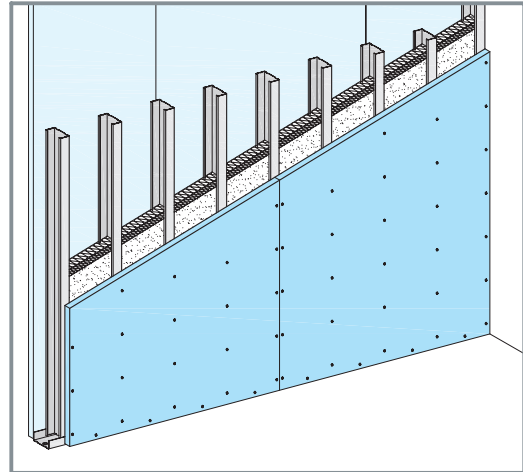
Knauf Fireboard Wall A1

K234

Single Metal Stud Frame, Single Layer Cladding

Wall heights

| Stud | Spacing of studs | Maximum wall heights incl. fire protection installation zone (definition see page 23) | |
|--|------------------|---|-----|
| metal thickness 0.6 mm | cm | 1 m | 2 m |
|  Knauf Stud CW 100 | 31.25 | 9 | 9 |



Details scale 1:5

K234-VO1 Connection to ceiling

K234-A1 Connection to solid wall

K234-B1 Joint

K234-VM1 Joint

K234-C1 Connection to metal stud partition

K234-D1 Corner

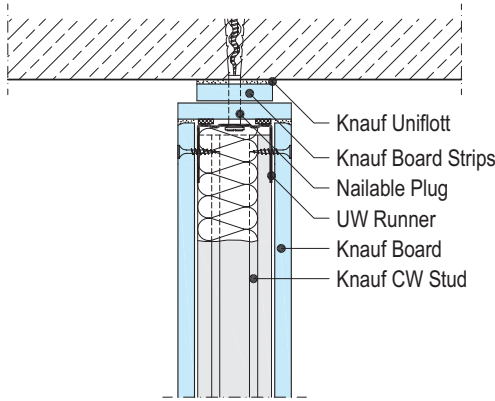
K234-VU1 Connection to floor

Vertical Stud Joint

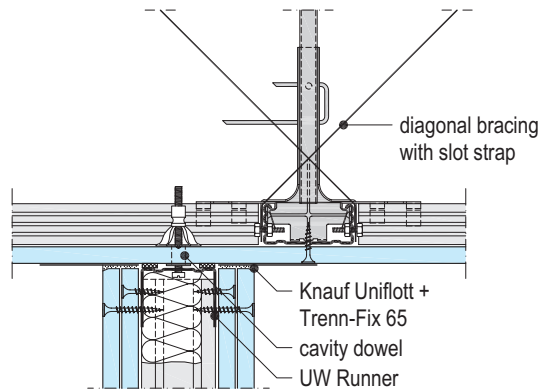
Section

Details: Connections to Ceilings

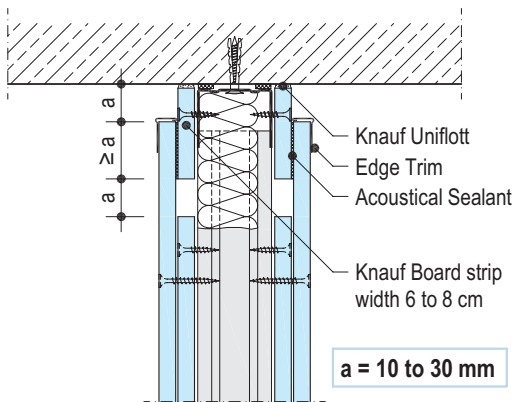
Details scale 1:5



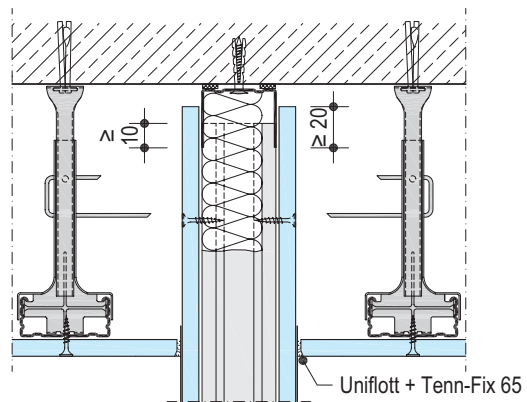
W111-VO3 Connection with shadow gap for fire protection



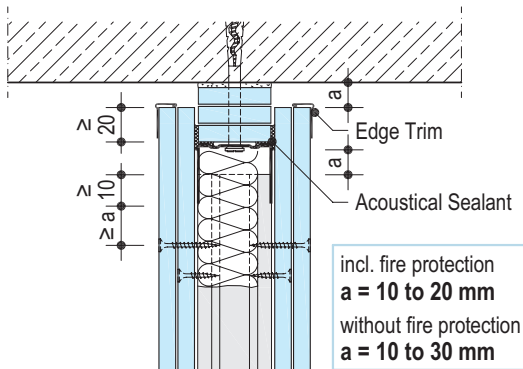
W112-VO4 Connection to suspended ceiling



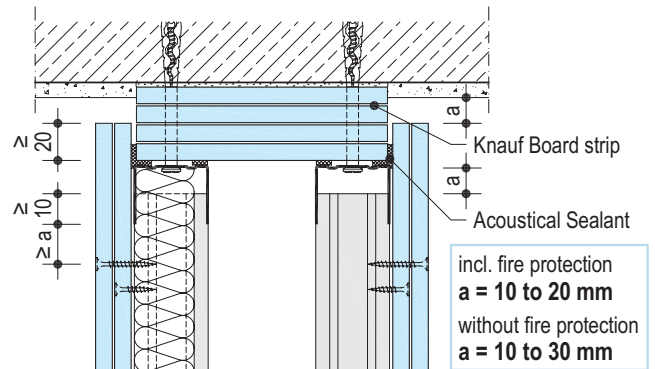
W112-VO3 Deflection head
reduction of sound protection approx. 3 dB



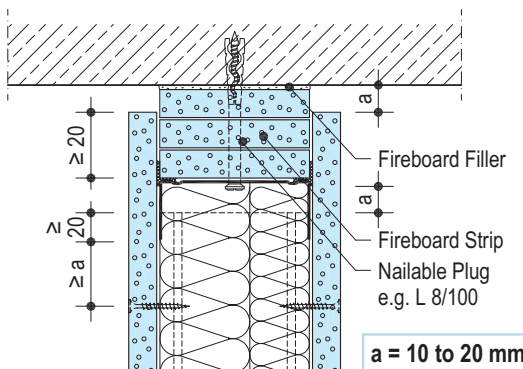
W111-VO2 Deflection head with separated suspended ceiling



W112-VO2 Deflection head for fire and / or sound protection requirements



W116-VO2 Deflection head for fire and / or sound protection requirements



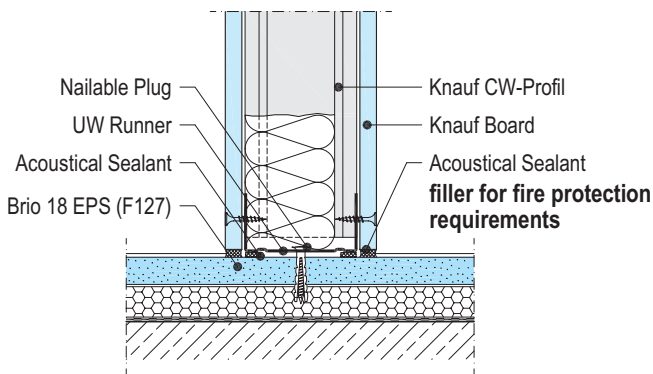
K234-VO2 Deflection Head

Note

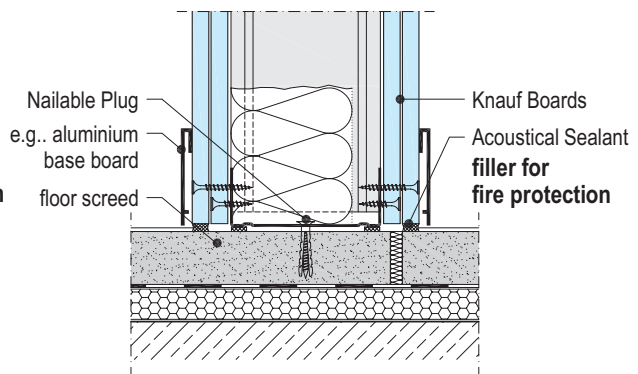
Solutions for higher ceiling deflections on request

Details: Connections to Floors and to Walls / Access Panels / Kit for Sliding Doors

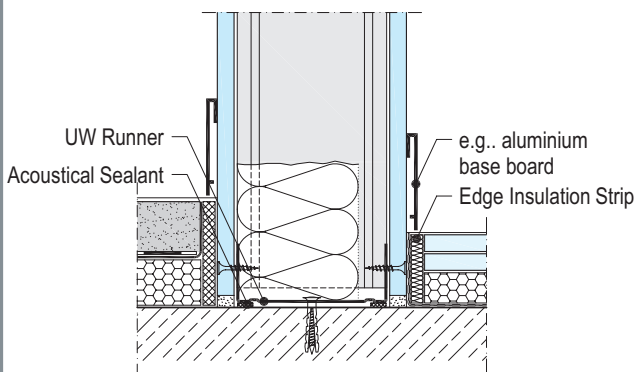
Details scale 1:5



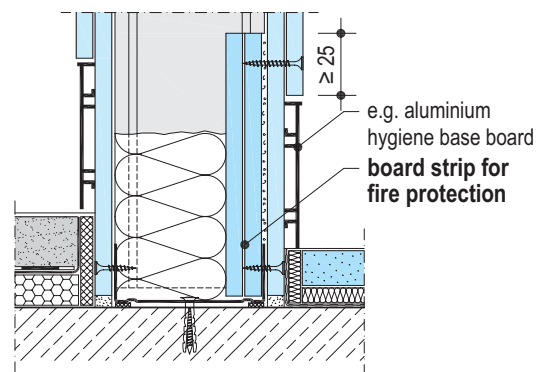
W111-VU2 Connection to Knauf Floor Elements F127



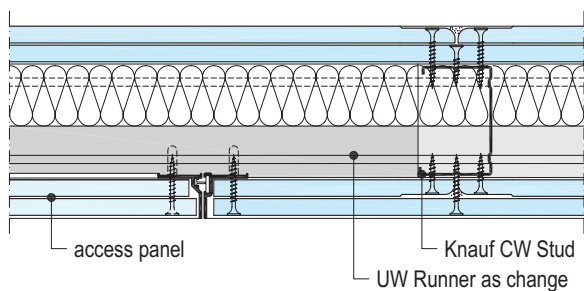
W112-VU2 Connection to floor screed, separated



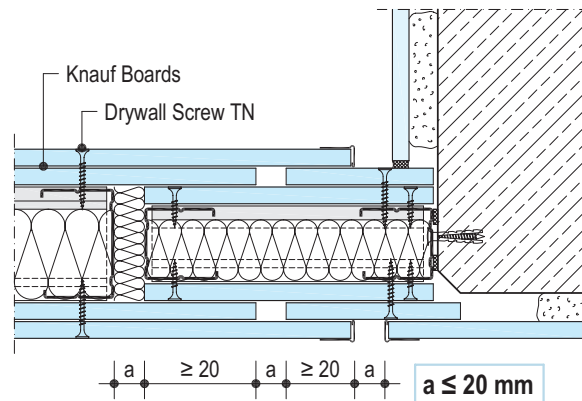
W111-VU3 Connection to basic floor



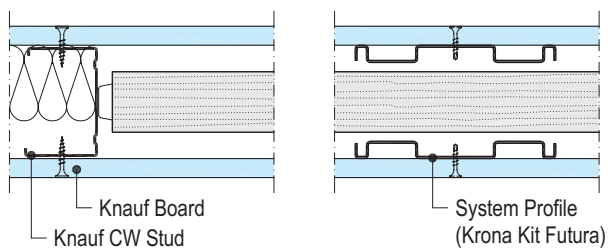
W112-VU3 Reduced connection to basic floor



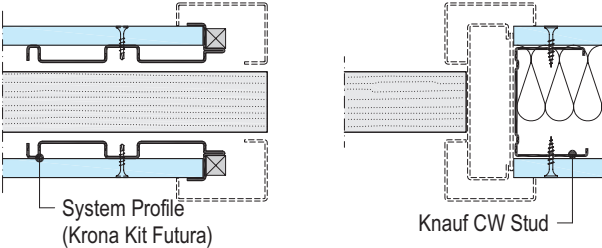
Access Panel W252 see Data Sheet W25



W112-A3 Sliding wall connection



Knauf Krona Kit Futura - kit for sliding doors



see brochure W495P

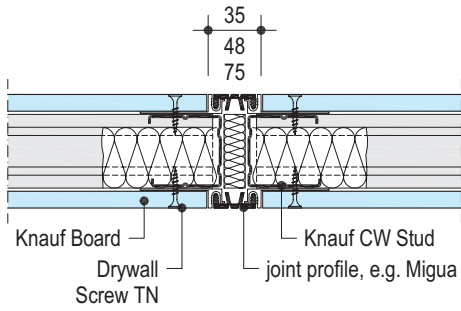
Note

Further information about built-ins see Knauf Technical Data Sheets

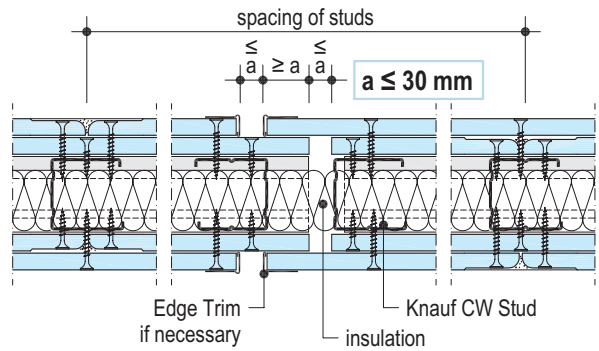
W21 Sanitary Accessoires, W25 Access Panels; W42 Door Frames and Glazings, brochure W495P Knauf Sliding Door System Krona

Details: Movement Joints / T-Junctions / Corners

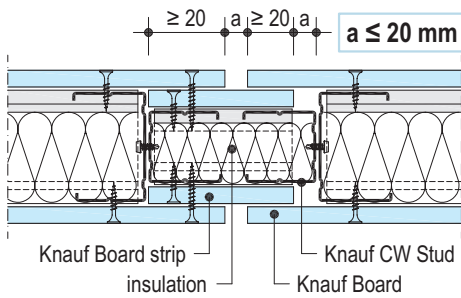
Details scale 1:5



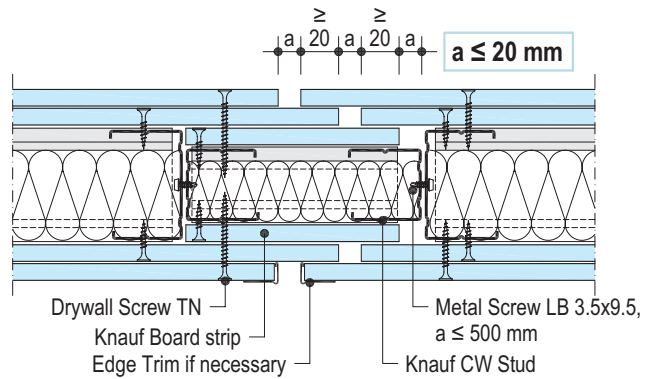
W111-BFU2 Movement joint with joint profile



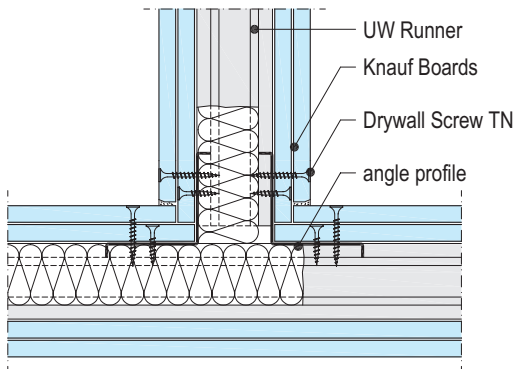
W112-BFU2 Movement joint



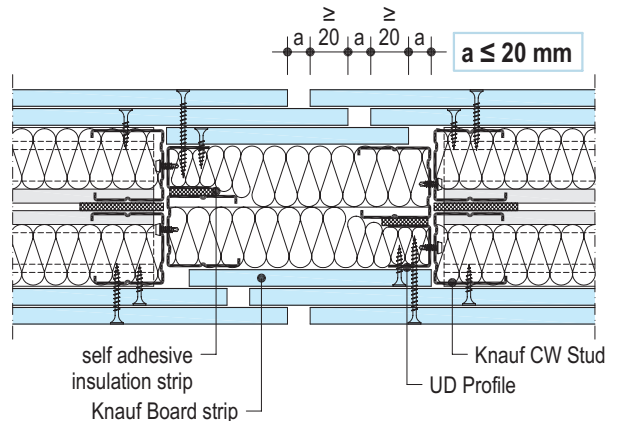
W111-BFU1 F30 movement joint



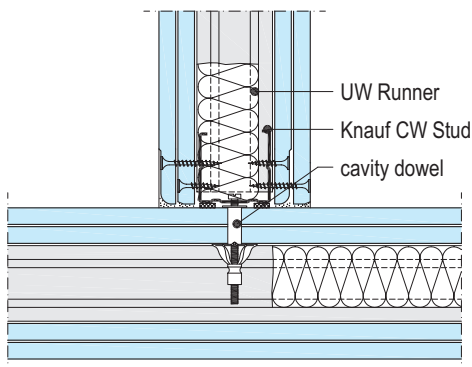
W112-BFU1 F90 movement joint



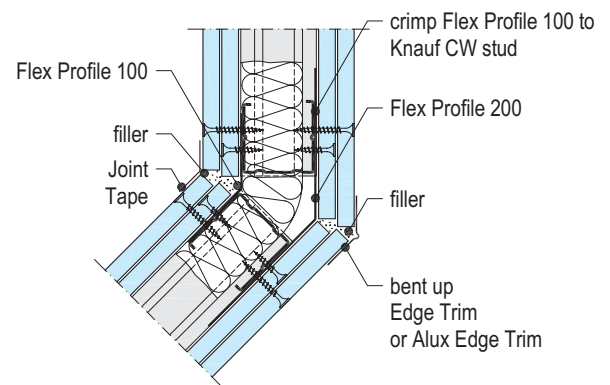
W112-C2 T-junction with angle profiles



W115-BFU1 F90 movement joint



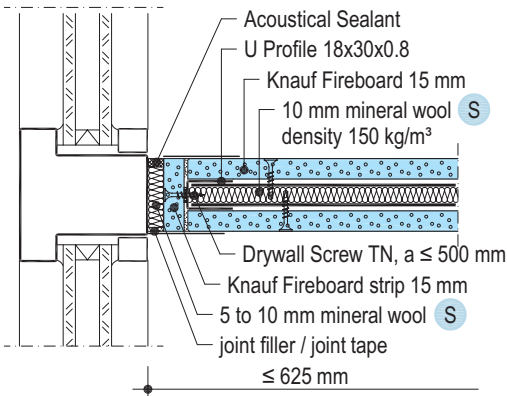
W112-C3 T-junction with cavity dowel



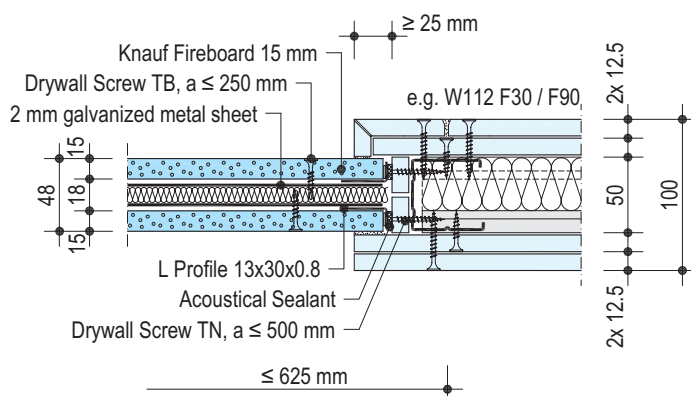
W112-D2 Corner with Flex Profile

Wall Breaks for Knauf Partitions: Fire Protection F30 / F90

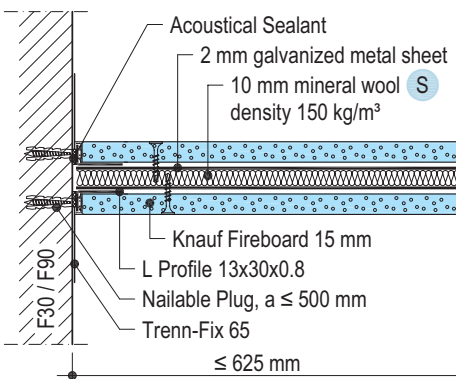
Details scale 1:5 Examples



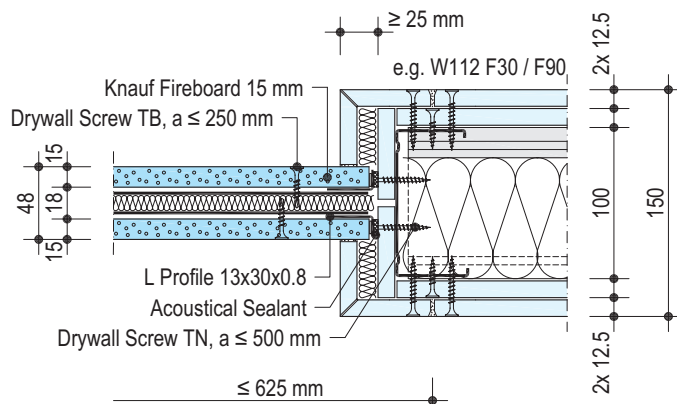
W112-SO-H1 Sliding connection to façade



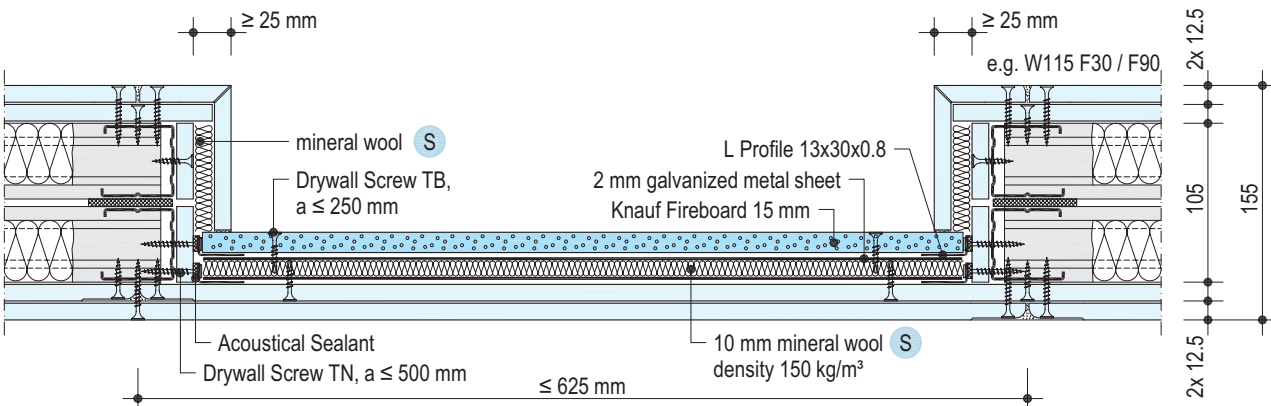
W112-SO-H2 Connection to partition W112



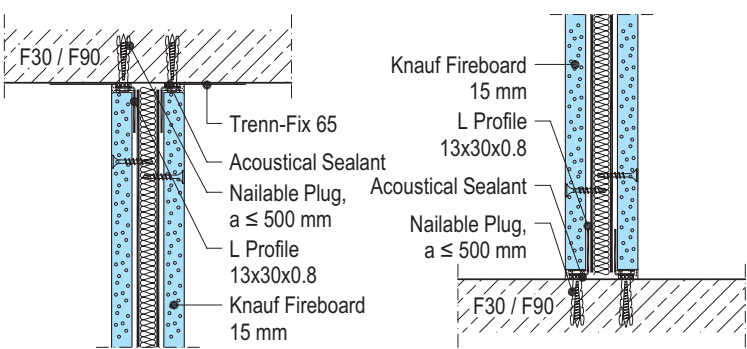
W112-SO-H3 Rigid connection to solid wall



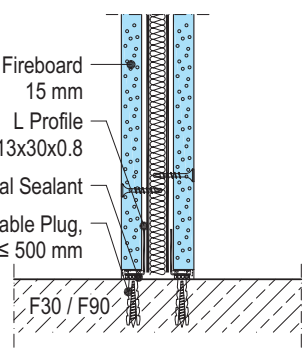
W112-SO-H4 Connection to partition W112



W115-SO-H5 Wall break as niche for partition W115



W112-SO-V1 Connection to ceiling



W112-SO-V2 Connection to floor

Calculation value of resulting sound reduction index of wall break and main partition

$R_{w,R}$ main partition > 50 dB ≤ 60 dB **1 dB reduction**
 $R_{w,R}$ main partition ≤ 50 dB **no reduction**

- valid for partition:
- > 10 m²
 - with one wall break (field width max. 625 mm)

Mineral wool insulation according to DIN EN 13162

S building material class A
 melting point ≥ 1000° C acc. to DIN 4102-17

- Notes**
- wall height ≤ 5 m for sliding (loose) connection
 - other wall break solutions on request

Door Openings: Stud Construction / Cladding / Door Panel Weight

Stud construction

| Variation CW | Variation UA | Deflection head |
|---|--|--|
| <ul style="list-style-type: none"> not with Alutop-Profi door frame acc. to DIN 18340 wall heights ≤ 2.60 m door width ≤ 0.885 m door panel weight ≤ 25 kg | <ul style="list-style-type: none"> remove plastic strip from Door Frame Bracket acc. to DIN 18340 wall heights > 2.60 m door width > 0.885 m door panel weight > 25 kg | <ul style="list-style-type: none"> possible with CW or UA |
| <p>Door Frame Bracket TOP fastening with enclosed dowels</p> <p>Lintel Profile</p> <p>Knauf CW Stud</p> <p>Door Frame Bracket FLOOR fastening with enclosed dowels</p> | <p>Door Frame Bracket TOP fastening with enclosed dowels</p> <p>Lintel Profile</p> <p>UA Profile</p> <p>Door Frame Bracket FLOOR fastening with enclosed dowels</p> | <p>Door Frame Bracket TOP fastening with Nailable Plugs "L" 8/100</p> <p>UA Profile or Knauf CW Stud</p> |

Note

Door Frame Brackets for Knauf CW studs or UA profiles 50/75/100:

Set includes:

4 Door Frame Brackets and 10 dowels

Lintel Profile for Knauf CW studs or UA profiles 50/75/100:

pre-punched for door opening widths:

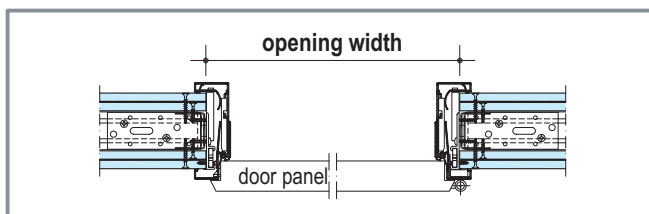
610 to 650 mm; 735 to 775 mm; 860 to 900 mm; 985 to 1025 mm

Maximum door panel weight

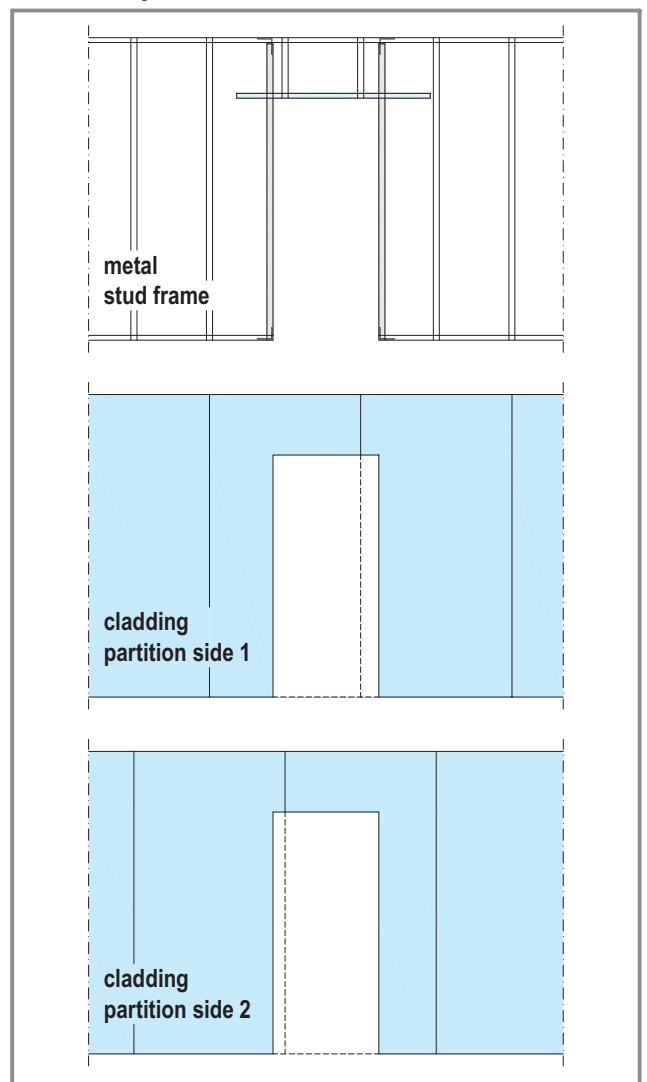
| Variation CW Knauf CW Studs | Variation UA | | |
|--------------------------------|--------------|---------|----------|
| | UA 50 | UA 75 | UA 100 |
| ≤ 25 kg | ≤ 50 kg | ≤ 75 kg | ≤ 100 kg |

| Standard dimensions DIN 18100 bxh mm | Opening dimensions | |
|---|---|--|
| | Alutop-Profi Frame (W42) bxh 1) mm | timber/block or lining frame bxh mm |
| 625/2000 | 625/2000 | 635/2010 |
| 750/2000 | 750/2000 | 760/2010 |
| 875/2000 | 875/2000 | 885/2010 |
| 1000/2000 | 1000/2000 | 1010/2010 |

1) With Alutop-Profi Frame: height of 2125 mm possible (see TDS W42).



scheme drawings



Stud Joints / Partitions W111 and W112 without Connection to Ceiling

Vertical stud joints

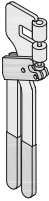
Knauf Stud Overlap u

| | | |
|---------|-----|----------|
| CW / UA | 50 | ≥ 50 cm |
| CW / UA | 75 | ≥ 75 cm |
| CW / UA | 100 | ≥ 100 cm |

Displace stud joints vertically

fit-up aid:

Crimp, rivet or screw Studs at overlap



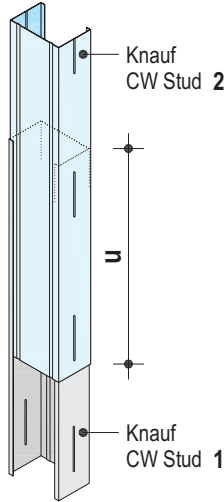
Stamp Pliers

Note

Not valid for system K234 (see page 14)

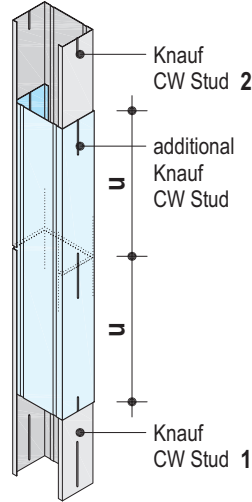
Variation 1

2 Knauf CW Studs interlaced as box



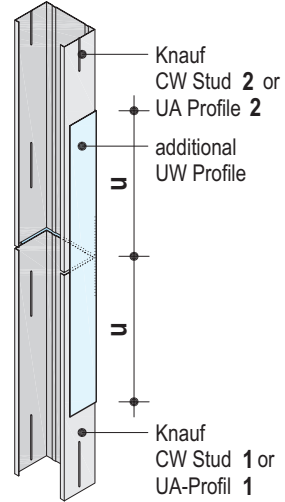
Variation 2

2 Knauf CW Studs butt joint interlaced with additional Knauf CW Stud



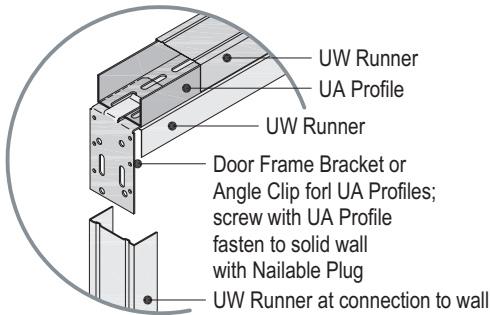
Variation 3

2 Knauf CW / UA Studs butt joint connected with additional UW Runner

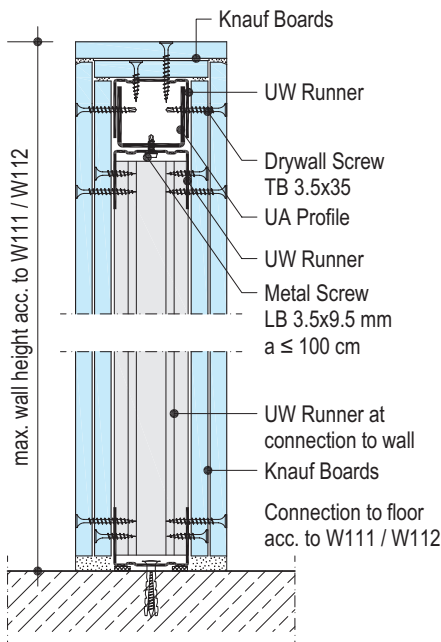


Partitions W111 / W112 without connection to ceiling

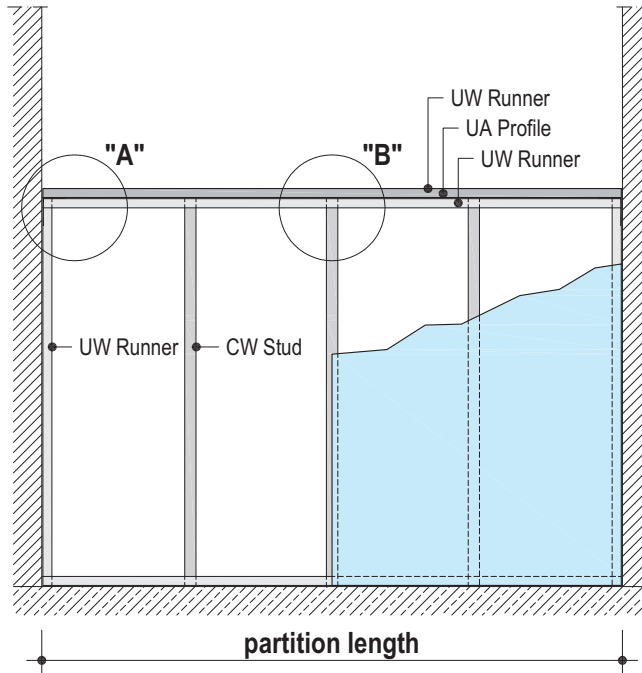
• without fire protection



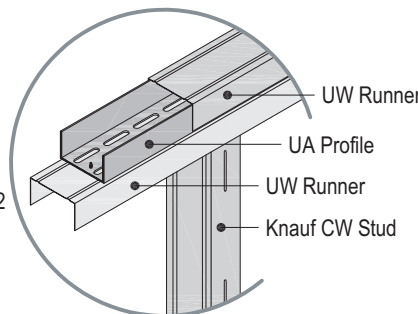
Detail "A"



Vertical section



View

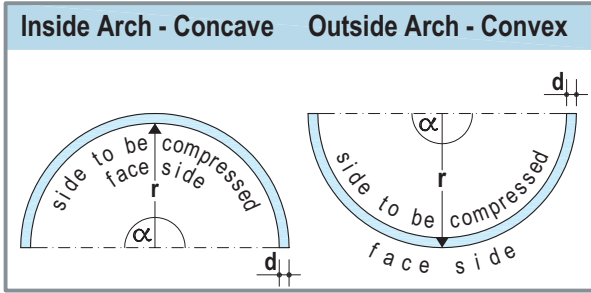


Detail "B"

Max. partition length (span of UA Profile)

| UA Profile | max. allowable partition width cladding | |
|-----------------|---|-------------------|
| metal thickness | 12.5 mm (W111) | 2x 12.5 mm (W112) |
| 2 mm | m | m |
| UA 50 | 3 | 4 |
| UA 75 | 4.5 | 5.5 |
| UA 100 | 5 | 6.5 |

Bent Partitions with Bent Knauf Boards and UW Runners 75x40x0.6 Pre-punched at Web



| Board thickness d mm | Bending radius r | |
|----------------------------|-------------------|-------------------|
| | dry bending mm | wet bending mm |
| 6.5 (Mold Board) | ≥ 1000 | ≥ 300 |
| 9.5 | ≥ 2000 | ≥ 500 |
| 12.5 | ≥ 2750 | ≥ 1000 |

longitudinal bending only

| Length of layout L |
|--|
| • angle α 90° $L = \frac{r \cdot \pi}{2}$ |
| • angle α 180° $L = r \cdot \pi$ |
| • all angles up to α 180° $L = \frac{\alpha \cdot r \cdot \pi}{180}$ |

Biegeanleitung

Wet bending

- Put the cut-to-length Knauf Boards on a grid made of channels or similar with the side to be compressed on top and excessing the grid on the perimeters (so excess water can drip off).
- Perforate the board laterally and longitudinally with Spike Roller.
- Wet the board by spraying or with lambskin roller and let it settle for a few minutes. Repeat process until excessive water drains.
- Lay board on precast molding device, fix with tape and let it dry.

Dry bending

- Bend Knauf Boards over metal grid or frame.
- Fix with Drywall Screws following the bending continuously.

Detail scale 1:5

Assembly

- cut outside flange at web punches
- bend UW Runners to required radius
- connect Knauf CW Studs to pre-punched UW Runners by crimping
- cladding lateral






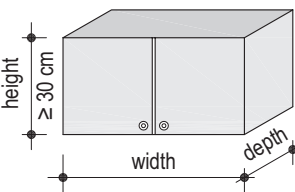
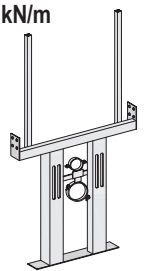
spacing Knauf CW Studs: ≤ 312.5 mm (outside radius)
spacing Nailable Plug: ≤ 300 mm

DIN 4103: Installation Zones / Cantilever Loads

Installation zones

| Installation zone 1 | Installation zone 2 |
|--|--|
| Partitions in rooms where low numbers of persons gather, e.g. dwellings, hotels, office and hospital rooms including corridors and halls or similar. | Partitions in rooms where large numbers of persons gather, e.g. meeting halls, school classrooms, lecture rooms, exhibition halls and sales-rooms and rooms with floor height differences of ≥ 1 m. |

Cantilever loads

| | | |
|---|---|--|
| <p>up to 15 kg hook</p> <p>light items like e.g. pictures can be fastened with X-Hooks</p> <p>loading 5 kg </p> <p>loading 10 kg </p> <p>loading 15 kg </p> | <p>up to 0.7 kN/m dowel</p> <p>plastic cavity dowels </p> <p>metal cavity dowels </p> <p>cabinet </p> | <p>up to 1.5 kN/m sanistands/ traverses</p> <p>Cantilever loads above 0.7 kN/m up to 1.5 kN/m wall length are to be transferred into the metal stud frame via traverses or sanistands </p> |
|---|---|--|

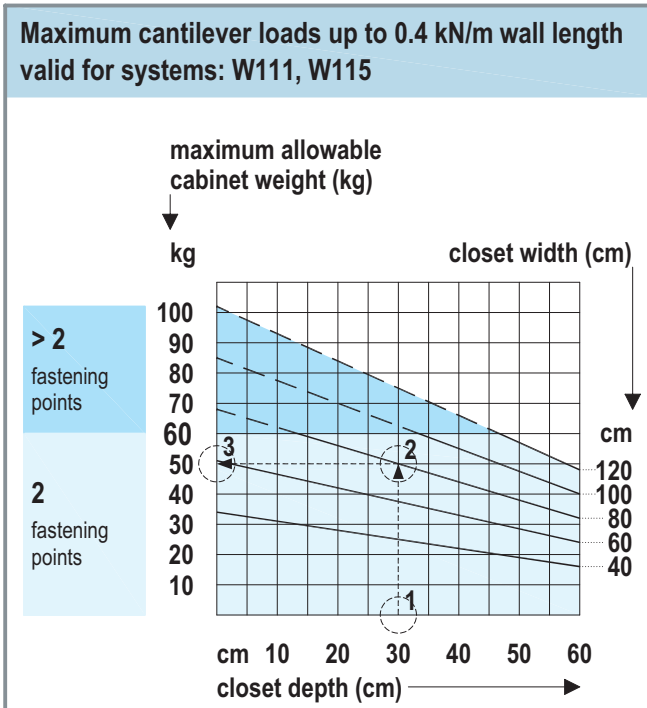
Dowel loading - tension and shear stresses

| Thickness of cladding | Plastic cavity dowel | Metal cavity dowel |
|-----------------------|--|--------------------|
| mm | $\varnothing 8$ or $\varnothing 10$ mm | screw M5 or M6 |
| | kg | kg |
| 12,5 | 25 | 30 |
| 20 | 35 | 40 |
| $\geq 2 \times 12,5$ | 40 | 50 |

According to DIN 18183 cantilever loads up to 0.7 kN/m wall length can be applied to any position on partitions under consideration of the cantilever arm (closet height ≥ 30 cm) and excentricity (closet depth ≤ 60 cm). Spacing of dowels ≥ 75 mm.

The fastening of cantilever loads has to be done with at least 2 cavity dowels made of plastic or metal, e.g. Tox Universal, Fischer Universal, Molly Screwing Anchor.

Diagram 1

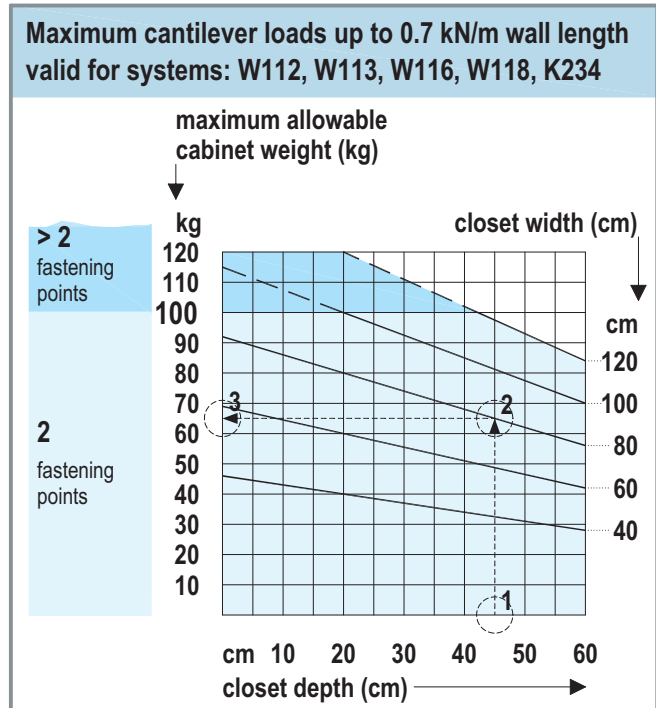


Example: cabinet depth 30 cm, cabinet width 80 cm

In diagram for cabinet depth 30 cm ① vertically upward, up to line cabinet width 80 cm ②, from intersection point horizontally to the left; read out ③:

50 kg is the maximum allowable cabinet weight for this example.

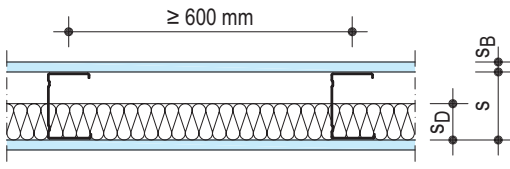
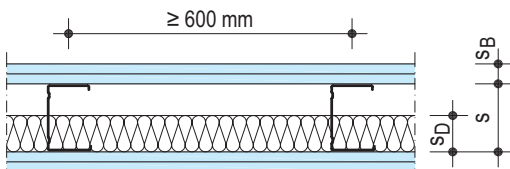
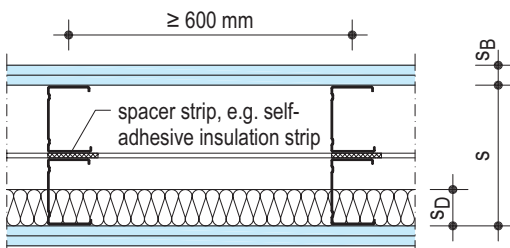
Diagram 2



Example: cabinet depth 45 cm, cabinet width 80 cm

In diagram for cabinet depth 45 cm ① vertically upward, up to line cabinet width 80 cm ②, from intersection point horizontally to the left; read out ③:

65 kg is the maximum allowable cabinet weight for this example.

| Examples | s_B ¹⁾ | C Stud ²⁾ | Minimum clearance between claddings s | Minimum insulation thickness s_D | $R_{w,R}$ dB |
|---|---------------------|----------------------|---|------------------------------------|--------------|
|  | 12.5 | CW 50 x 0.6 | 50 | 40 | 39 |
| | | CW 75 x 0.6 | 75 | 40 | 39 |
| | | CW 100 x 0.6 | 100 | 40 | 41 |
| | | | | 60 | 42 |
| | | | | 80 | 43 |
|  | 2x 12.5 | CW 50 x 0.6 | 50 | 40 | 46 |
| | | CW 75 x 0.6 | 75 | 40 | 46 |
| | | | | 60 | 49 |
| | | CW 100 x 0.6 | 100 | 40 | 47 |
| | | | | 60 | 49 |
| 80 | 50 | | | | |
|  | 2x 12.5 | CW 50 x 0.6 | 105 | 80 | 58 |
| | | CW 100 x 0.6 | 205 | 80 | 59 |

1) Thickness of cladding according to DIN 18180, applied according to DIN 18181, joints filled. The weight per unit area of the boards has to be at least 8,5 kg/m².

2) Letter symbol for C studs and metal thickness according to DIN 18182-1.

dimensions in mm

Material Requirements

| Material requirement per m ² partition without addition for loss and waste. | | | | | | | | |
|---|----------------|---|---------|---------|--|---------|---------|---------|
| Amounts refer to an area of: | | W111 to W116: H= 2.75 m; L= 4 m; A= 11 m ² . | | | W118 and K234: H= 6 m; L= 10 m; A= 60 m ² . | | | |
| description <i>italic = not provided by Knauf</i> | unit | amount as average value | | | | | | |
| | | W111 | W112 | W113 | W115 | W116 | W118 | K234 |
| metal stud frame | | | | | | | | |
| resp. UW Runner 50x40x0.6; (4 m long) | m | 0.7 | 0.7 | 0.7 | 1.4 | 1.4 | - | - |
| resp. UW Runner 75x40x0.6; (4 m long) | | | | | | | - | - |
| resp. UW Runner 100x40x0.6; (4 m long) | | | | | | | 0,3 | 0,3 |
| resp. Knauf CW Stud 50x50x0.6 | m | 2.0 | 2.0 | 2.0 | 4.0 | 4.0 | - | - |
| resp. Knauf CW Stud 75x50x0.6 | | | | | | | - | - |
| resp. Knauf CW Stud 100x50x0.6 | | | | | | | 3.8 | 3.8 |
| <i>blind metal rivets (for vertical CW Stud joints)</i> | pcs | - | - | - | - | - | - | 3.1 |
| <i>blind met. riv. ≥3x8 mm (connection CW Stud to UW Runner)</i> | pcs | - | - | - | - | - | 2.1 | - |
| Sealing Tape sections 70/3.2 mm, 100 mm long; (30 m roll) | m | - | - | - | 0.5 | - | - | - |
| or Knauf Acoustical Sealant; (pouch 550 ml) | pcs | 0.3 | 0.3 | 0.3 | 0.6 | 0.6 | 0.1 | 0.1 |
| or Knauf Sealing Tape; (30 m roll) | m | 1.2 | 1.2 | 1.2 | 2.4 | 2.4 | - | - |
| resp. 50/3.2 mm | | | | | | | - | - |
| resp. 70/3.2 mm | | | | | | | 0.5 | 0.5 |
| resp. 95/3.2 mm | - | - | - | - | - | - | - | - |
| resp. Knauf Nailable Plug "K" 6/35; (100 pcs. box) | pcs | 1.6 | 1.6 | 1.6 | 3.2 | 3.2 | 0.3 | 0.7 |
| resp. Knauf Nailable Plug "K" 6/50; (100 pcs. box) (for connections to plastered surfaces) | | | | | | | | |
| Knauf Ceiling Steel Dowel, (100 pcs. box) | pcs | - | - | - | - | - | 0.8 | - |
| washer Ø ≥ 30 mm, t ≥ 2 mm | pcs | - | - | - | - | - | 0.8 | - |
| <i>insulation (for fire protection see pages 4+5)</i> | m ² | as req. | as req. | as req. | as req. | as req. | as req. | - |
| mm thick 40 mm + 60 mm thick | | - | - | - | - | - | - | - |
| cladding | | | | | | | | |
| resp. Knauf Wallboard GKB / GKBI (impregn.); 12.5 mm | m ² | 2.0 | 4.0 | 6.0 | 4.0 | 4.1 | - | - |
| resp. Knauf Fire Res. Board GKF / GKFI (impregn.); 12.5 mm | | | | | | | - | 6.0 |
| resp. KNAUF Piano Sound Shield GKB; 12.5 mm | | | | | | | - | - |
| resp. KNAUF Piano Sound Shield GKF; 12.5 mm | | | | | | | - | - |
| resp. LaVita Shielding Board GKF; 12.5 mm | - | - | 6.0 | - | 4.1 | - | - | |
| Knauf Fireboard; 20 mm | m ² | - | - | - | - | - | - | 2.0 |
| <i>galvanized metal sheet ≥ 0,5 mm thick; (joint overlap ≥ 10 cm)</i> | m ² | - | - | - | - | - | 4.4 | - |
| Knauf Drywall Screws; (fixing of metal sheets) | pcs | - | - | - | - | - | 4 | - |
| TN 3.5 x 35 mm | | | | | | | 4 | - |
| TN 3.5 x 45 mm | - | - | - | - | - | - | - | - |
| Knauf Drywall Screws; (fastening of cladding) | pcs | 29 | 13 | 13 | 13 | 17 | 17 | - |
| TN 3.5 x 25 mm | | - | 29 | 17 | 29 | 29 | 23 | 39 |
| TN 3.5 x 35 mm | | - | - | 29 | - | - | 38 | - |
| TN 3.5 x 55 mm | - | - | - | - | - | - | - | - |
| jointing | | | | | | | | |
| resp. Knauf Uniflott; (5 kg/25 kg bag) | kg | 0.5 | 0.8 | 1.1 | 0.8 | 0.8 | 1.1 | - |
| resp. Knauf Uniflott imprägniert; (5 kg bag) | | | | | | | | - |
| or Knauf Jointfiller Super; (20 kg bag) (for machine filling with Ames machine) | kg | 0.6 | 1.0 | 1.4 | 1.0 | 1.0 | 1.4 | - |
| or Knauf Fugenfüller Leicht; (5 kg/10 kg/25 kg bag) | kg | 0.5 | 0.8 | 1.1 | 0.8 | 0.8 | 1.1 | - |
| Knauf Joint Tape; (23 m/75 m/150 m roll) | m | as req. | as req. | as req. | as req. | as req. | as req. | - |
| Knauf Fireboard Filler; (5 kg/20 kg bag) | kg | - | - | - | - | - | - | 0.1 |
| Knauf Fiber Glass Joint Tape; (25 m roll) | m | - | - | - | - | - | - | 2.5 |
| Trenn-Fix 65, self-adhesive; (50 m roll) | m | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 0.8 | 0.8 |
| Edge Trim 23/13; (2.75 m long) | m | - | - | - | - | - | - | - |
| Corner Trim 31/31; (2.60 m/3 m long) | m | as req. | as req. | as req. | as req. | as req. | as req. | as req. |
| Alux Corner Trim width 52 mm; (30 m roll) | m | - | - | - | - | - | - | - |

as req. = as required

Note Values without determined fire or sound protection requirements

Specifications

| Item | Description | No. of units | Unit price | Total price |
|-------------------------------|---|----------------------|------------|-------------|
| ..... | Non-load bearing partition DIN 4103-1 as metal stud partition, installation zone 1 / 2 *, height in m, thickness 75/ 100/ 125 * mm, sound reduction index DIN 4109 R_{wR} in dB, * thermal transmission coefficient according to DIN 4108-2, U value in $W/(m^2 \cdot K)$, * fire resistance class according to DIN 4102-2 F30,* perimeter fixed, cladding with one layer of Knauf Boards GKB 12.5 mm/ GKBI 12.5 mm/ GKF 12.5 mm/ GKFI 12.5 mm/ LaVita Shielding Boards GKF 12.5 mm/ KNAUF Piano Sound Shield GKB 12.5 mm/ KNAUF Piano F Sound Shield GKF/ GKFI * 12.5 mm *. Product/ System: Knauf Metal Stud Partition W111 | m ² | € | € |
| ..... | Non-load bearing partition DIN 4103-1 as metal stud partition, installation zone 1 / 2 *, height in m, thickness 100/ 125/ 150/ 175 * mm, sound reduction index DIN 4109 R_{wR} in dB, * thermal transmission coefficient according to DIN 4108-2, U value in $W/(m^2 \cdot K)$, * fire resistance class according to DIN 4102-2 F30/ F60/ F90/ F120/ F180 *, * perimeter fixed, cladding with two/ three * layers of Knauf Boards GKB 12.5 mm/ GKBI 12.5 mm/ GKF 12.5 mm/ GKFI 12.5 mm/ GKF 15 mm/ GKFI 15 mm/ GKF 18 mm/ LaVita Shielding Boards GKF 12.5 mm/ KNAUF Piano Sound Shield GKB 12.5 mm/ KNAUF Piano F Sound Shield GKF/ GKFI * 12.5 mm *. Product/ System: Knauf Metal Stud Partition W112/ W113 * | m ² | € | € |
| ..... | Non-load bearing partition DIN 4103-1 as metal stud partition, installation zone 1 / 2 *, height in m, thickness 155/ 205/ 255 mm/ in mm..... *, sound reduction index DIN 4109 R_{wR} in dB, * thermal transmission coefficient according to DIN 4108-2, U value in $W/(m^2 \cdot K)$, * fire resistance class according to DIN 4102-2 F30/ F60/ F90 *, * perimeter fixed, cladding with two layers of Knauf Boards GKB 12.5 mm/ GKBI 12.5 mm/ GKF 12.5 mm/ GKFI 12.5 mm/ GKF 15 mm/ GKFI 15 mm/ GKF 18 mm/ LaVita Shielding Boards GKF 12.5 mm/ KNAUF Piano Sound Shield GKB 12.5 mm/ KNAUF Piano F Sound Shield GKF/ GKFI * 12.5 mm *. Product/ System: Knauf Metal Stud Partition W115/ Installation wall W116 * | m ² | € | € |
| ..... | Non-load bearing partition DIN 4103-1/ Fire Wall DIN 4102-3, non-load bearing *, as metal stud partition, installation zone 1 / 2 *, height in m, thickness 177 mm, sound reduction index DIN 4109 R_{wR} in dB 55, * thermal transmission coefficient according to DIN 4108-2, U value in $W/(m^2 \cdot K)$ 0.36, * fire resistance class according to DIN 4102-2 F90,* special requirement: burglar resistant grading A according to VdS (association of indemnity insurers)/ WK3 according to DIN V EN 1627 to 1630 *. perimeter fixed. Product/ System: Knauf High Security Wall W118 | m ² | € | € |
| ..... | Non-load bearing partition DIN 4103-1 as metal stud partition, installation zone 1 / 2 *, height in m, thickness 140 mm, sound reduction index DIN 4109 R_{wR} in dB 47, * thermal transmission coefficient according to DIN 4108-2, U value in $W/(m^2 \cdot K)$ 0,34, * fire resistance class according to DIN 4102-2 F 90,* perimeter fixed. Product/ System: Knauf Fireboard Partition K234 | m ² | € | € |
| * Cancel not applicable items | | | Sub-total | € |

Specifications

| Item | Description | No. of units | Unit price | Total price |
|-------------------------------|--|----------------------|------------|-------------|
| ..... | Connection , sliding up to 20 mm, to ceiling/ to wall *, as upgrade to partition, installation according to drawing no. | m | € | € |
| ..... | Connection , reduced, to wall/ façade *, as upgrade to partition, dimensions in mm, fire resistance class DIN 4102-2 F30/ F90 *,*, sound reduction index DIN 4109 R _{wR} in dB,*, installation according to drawing no. | m | € | € |
| ..... | Connection , reduced, sliding up to 20 mm, to ceiling/ to wall *, as upgrade to partition, dimensions in mm, installation according to drawing no. | m | € | € |
| ..... | Connection to ceiling with shadow gap, as upgrade to partition, dimensions in mm, installation according to drawing no. | m | € | € |
| ..... | Connection to roof pitch as upgrade to partition, height in m from to | m | € | € |
| ..... | Corner , as upgrade to partition, rectangular, installation according to drawing no. | m | € | € |
| ..... | Corner , as upgrade to partition, oblique-angled, reinforced with flexible corner profiles made of galvanized metal sheet, thickness 0.6 mm, width in mm 100/ 200 *. installation according to drawing no. Product/ System: Knauf Flex Profile 100/ 200 * | m | € | € |
| ..... | Free end of partition as upgrade to partition, installation according to drawing no. | m | € | € |
| ..... | Outside corner , as upgrade to partition, installation with corner trim 31/31. Product/ System: Knauf Corner Trim 31/31 | m | € | € |
| ..... | T-junction as upgrade to partition, installation with rigid connection/ with rigid connection and recessed cladding/ with inside corner profiles *. | m | € | € |
| ..... | Movement joint as upgrade to partition, width in mm, installation according to drawing no. | m | € | € |
| ..... | Movement joint as upgrade to partition, with joint profile..... . Product :, <i>to be named by the bidder.</i> | m | € | € |
| ..... | Reduced connection to floor as upgrade to partition, dimensions in mm, installation according to drawing no. | m | € | € |
| ..... | Curved layout as upgrade to partition, inside radius of curved partition in mm | m ² | € | € |
| ..... | Door opening with lintel, enforced from floor to ceiling, with metal studs UA 50/ 75/ 100 *, incl. connections to floor and ceiling, fix with angles, dowels and screws. basic dimensions B/H in mm, wall thickness in mm | pcs | € | € |
| * Cancel not applicable items | | | Sub-total | € |

Construction and Application

Construction

Knauf Metal Stud Partitions consist of a single metal stud frame (W111, W112, W113, W118, K234) or double metal stud frame (W115, W116) and a cladding of Knauf Boards GKB or GKBI impregnated/ Fire Resistant Boards GKF or GKFI impregnated/ LaVita Shielding Boards GKF/ KNAUF Piano Sound Shield GKB, GKF or GKFI on both sides.

The metal framework is fixed at the entire perimeter.

Cladding with 1 to 3 layers.

With at multi layer cladding ball throwing safety is given.

By applying Knauf LaVita Shielding Boards a strong shielding of high frequency electromagnetic waves and low frequency alternating fields can be achieved.

For Knauf solutions for partitions with vertical exaggeration ask Knauf Sales Force.

Insulation material for sound and thermal insulation as well as sanitary or electric built-ins can be installed into the metal frame construction.

Movement joints have to be taken over into the construction of the partitions. For continuous partitions use control joints at approx. 15 m.

W111 with KNAUF Piano Sound Shield Boards

For sound protection requirements according to DIN 4109 in hospitals $R'_w = 37$ dB between rooms of intensive care/ between halls and rooms mentioned above, resp. $R^{TW} = 42$ dB between operating theaters and surgeries/ between halls and rooms mentioned above W111 with KNAUF Piano Sound Shield Boards GKB, GKF and GKFI is appropriate with a resulting longitudinal sound reduction index $R'_{L,w,R} \geq 40$ dB resp. ≥ 45 dB.

W112 with KNAUF Piano Sound Shield Boards

For sound protection requirements according to DIN 4109 $R'_w = 47$ dB between classes accommodations or hospital rooms, surgery rooms/ between halls and rooms mentioned above/ between patient's and office resp. treatment rooms, resp. $R'_w = 52$ dB between class rooms and staircases/ staircase walls and walls next to hallways W112 with KNAUF Piano Sound Shield GKB and GKF is appropriate with a longitudinal sound reduction index $R'_{L,w,R} \geq 50$ dB resp. ≥ 55 dB.

W115 Separating Wall

For high sound protection requirements two rows of metal studs are installed parallel, isolated by Sealing Tape.

W116 Installation Wall

For the application of installation in the partition cavity two rows of studs can be installed and connected with Knauf Gypsum Board strips.

W118 High Security Wall

The Knauf High Security Wall as burglar resistant metal stud partition accomplishes burglar resistance A according to VdS (association of indemnity insurers) resp. WK 3 according DIN EN V 1627 to 1630.

For Knauf Safety Partition a protection of utility patents (Nr. 29622165.1) does exist.

With triple layer cladding made of Knauf Boards GKF on both sides and two horizontally applied layers of metal sheet on each side between the board layers the High Security Wall with a metal stud spacing of 31.25 cm with or without mineral wool has a fire protection rate F90 resp. is classified as fire wall according to DIN 4102-3 with a permissible partition height of 9 m.

K234 Fireboard Partition A1

The Fireboard Partition A1 with single layer cladding made of Fireboard 20 mm on both sides, insulation layer (40 + 60 mm) and metal stud spacing of 31.25 cm has a fire protection rate F90 and a permissible partition height of 9 m.

Application

Metal stud frame

- Apply Acoustical Sealant (two strings) or Sealing Tape to backside of runners for the connection of flanking constructional components. For sound protection requirements seal up carefully with acoustical sealant according to DIN 4109, supplement 1, chapter 5.2; porous sealant strips like Sealing Tape are usually not suitable in this case.
- If a deflection of the ceiling ≥ 10 mm can be expected install deflection heads.
- Fix perimeter runners and studs with suitable dowels to flanking components. Spacing of dowels 1 m with at least 3 fixing points at walls.
- Anchors for solid flanking components: nailable plug/ not solid flanking components: anchors have to be permitted and standardized for the building material being used.
- Install CW studs into UW runners and aligne.

W116 Installation Wall

Connect double metal studs with approx. 30 cm wide Gypsum Board strips (spacing approx. 60 cm) to „frame studs“. Apply UA profiles next to door openings.

W118 Knauf High Security Wall

- Fasten edge profiles UW 100 to floors/ ceilings, CW 100 to walls with appropriate dowels: Ceiling Steel Dowels for reinforced concrete ceilings and Nailable Plugs for masonry. Spacing of anchors 0.5 m at ceilings, 1 m at walls with at least 3 fixing points.
- Install cut to length CW 100 studs into UW runners at a spacing of 31.25 cm, aligne and fix with two metal rivets (3 x 8 mm) each to bottom and top. Install door openings using UA profiles.

K234 Fireboard Partition A1

- Install vertical, cut to length CW 100 studs into UW 100 runners at a spacing of 31.25 cm and aligne.
- Implement profile joints with at least 1 m overlap and fasten with 3 blind metal rivets per flange. Fill profile hollow space with mineral wool strip.

Cladding

- Cladding preferably with vertically applied floor-to-ceiling Knauf boards. Displace joints. No joints at door opening profiles.
- For fire protection requirements fill connection to floor with filler, for sole sound protection requirements Acoustical Sealant or acrylate can be used.

- Spacing of screws 25 cm (for the first layer of double layer cladding the spacing can be increased to 75 cm).

W111

If not using floor-to-ceiling boards displace horizontal joints at least 400 mm. Filling of cut edge joints with Joint Tape is recommended. For fire protection requirements cover cut edge joints with profiles.

W113/ W118 Safety

Screw spacing of first layer 75cm, of second layer 50 cm, of third layer 25 cm.

W118 Knauf High Security Wall

Apply two layers of metal sheets, $\geq 0,5$ mm thick, as plates or coil material on each side horizontally between board layers. Overlap joints at least 10 cm. Apply vertical joints on studs. Screwing with Drywall screws only to fasten for installation, remove while applying the boards.

K234 Fireboard-Wand A1

- Install mineral wool insulation (density at least 40 kg/m³; melting point at least 1000°C/ 1832°F), 40 + 60 mm thick, with displaced joints and installations (cover light switches with gypsum) into partition cavity.
- Apply Fireboard 20 mm. Displace joints. Fasten with drywall screws TN 3.5 x 35 with a spacing of 25 cm.

Construction and Application, Jointing/ Surface Treatment

Fixing of Knauf boards with Drywall Screws TN and TB

| Cladding thickness in mm | Fixing of Knauf boards to metal studs (minimum penetration 10 mm) | |
|---------------------------|---|---|
| | metal thickness $s \leq 0.7$ mm | 0.7 mm $< s \leq 2.25$ mm |
| 12.5 GKB/ GKF | TN 3.5 x 25 | TB 3.5 x 25 |
| 20 Fireboard | TN 3.5 x 35 | TB 3.5 x 35 |
| 2 x 12.5 GKB/ GKF | TN 3.5 x 25 + TN 3.5 x 35 | TB 3.5 x 25 + TB 3.5 x 45 |
| 2 x 15 GKF, 15 + 12.5 GKF | TN 3.5 x 25 + TN 3.5 x 45 | TB 3.5 x 35 + TB 3.5 x 45 |
| 2 x 18 GKF, 25 + 12.5 GKF | TN 3.5 x 35 + TN 3.5 x 55 | TB 3.5 x 45 + TB 3.5 x 55 |
| 3 x 12.5 GKB/ GKF | TN 3.5 x 25 + TN 3.5 x 35 + TN 3.5 x 55 | TB 3.5 x 25 + TB 3.5 x 45 + TB 3.5 x 55 |

Maximum web cutout of CW studs of metal stud partitions

| Metal stud | Cladding | Web cutout number of openings | dimensions of opening |
|----------------|--------------|-------------------------------|-----------------------|
| CW 75 / CW 100 | single layer | 1 per stud | |
| | multi layer | 2 per stud | |
| CW 50 | multi layer | 1 per stud | |

The openings according to this table can be applied in addition to the existing H punches.

Jointing / Surface Treatment

Filling materials

- Fill in joints with Knauf Uniflott without using tape. If using tape, hand fill with Knauf Fugenfüller Leicht or with Ames machine and Knauf Jointfiller-Super.
- Knauf Uniflott impregnated is additionally hydrophobic and its color is adapted to the color of impregnated Knauf boards.
- Use Knauf Finish-Pastös for the final filling as fine finish before sanding the joints.

Implementation

- For multi layer cladding, fill in joints of first layers, smooth joints of top layer.
- Cover all visible screw heads as well.
- **Recommendation:** Fill in and tape cut edges of visible layers no matter which filling material is used.
- Use Knauf Spezialgrund to prime the entire surface of filled Knauf boards to control suction and for optical harmonization of the surface. Knauf Spezialgrund is a system component for the creation of surfaces with higher quality requirements according to code of practice no. 2 „Verspachtelung von Gipsplatten - Oberflächengüten“ of the IGG.

Application temperature/ Climate

- Filling and covering of joints should only take place after the boards have been allowed to rest in the given humidity and temperature zones, and no more longitudinal changes can be expected, i.e. expansion or contraction.

- Joints should be filled at a minimum temperature of +10°C (50°F).
- In case of mastic asphalt screed, fill in joints after screed has been applied.

K234 Fireboard-Wände

- Cover screw heads with Knauf Fireboard Filler.
- **Joint filling:** Apply a thin layer of Knauf Fireboard Filler (at least 1 mm) and apply Fiber Glass Joint Tape. Next run not before filler has dried properly.
- **Skimming:** An additional skimming of the entire surface with Knauf Fireboard Filler is recommended for special surface requirements.
- After drying sand filled areas slightly if necessary.

Surface Treatment

Use a primer on Knauf Boards before coating or painting them. Ensure that the primer and the coat or paint are compatible.

The following coats can be used to cover Knauf Boards:

- Coats: Washable and abrasion-proof emulsion paint, multicolored (rainbow) emulsion, oil paint, matte-finish lacquer, alkyd resin paint, polymer resin paint, PUR lacquer, or epoxybased lacquer, according to intended use or as required.
- Ceramic tiles: For tiling at least double layer cladding is recommended.

- Plasters: Knauf structured plasters, e.g. resin plasters, thin plasters, entire surface smoothing like e.g. Knauf Board-Finish, mineral plasters in connection with paper taped jointing. After the application of resin / cellulose plasters quick drying must be assured through adequate airing.

- Wallpapers: paper-, textile and synthetic wallpapers. Use only adhesives made of cellulose according to „code of practice no. 16 “Technische Richtlinien für Tapezier- und Klebearbeiten“, Frankfurt/Main 2002, released by Bundesausschuss Farbe und Sachwertschutz. After wallpapering of paper and fiber glass wallpapers quick drying must be assured through adequate airing.

- Alkaline coats such as lime, water glass colors and silicate-based paints are unsuitable for gypsum board surfaces.

- Silicate-based emulsion paints may be used after referring to the manufacturer's recommendations and following the stipulated guidelines closely.

Gypsum plasterboard surfaces that have constantly been exposed to light without any protection can develop yellowing agents that show up despite a coat of paint. 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 shielding primer.

Knauf Direkt Technical Information Service: Phone +49 90 01 / 31-10 00, Facsimile +49 18 05 / 31-40 00

Knauf websites: www.knauf.de, www.knauf.com **e-Mail:** knauf-direkt@knauf.de

Knauf Headquarters, Am Bahnhof 7, D-97346 Iphofen, Phone +49 93 23 / 31-0, Facsimile +49 93 23 / 31-277

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