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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

**FN01.de**

Technical Brochure

2018-05

# Drywall Solutions in Damp and Wet Rooms

## Moisture Protection with Premium Drywalling

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**Benefits of drywalling**

Modern Knauf Drywall Systems offer huge benefits compared to solid constructions, for example, with regard to moisture protection, fire resistance, sound insulation, space gains and lower weights.



**Moisture protection**

Knauf drywalling in residential buildings offers solutions that can be applied universally and that at the same time are tailor-made, and can withstand the day-to-day demands, even in wet and damp rooms. Knauf drywall solutions offer the ideal substrate on wall and ceilings and also deliver unlimited design freedom for planning and installation.



**Fire protection of buildings one step further**

Drywall construction fully utilizes its high-performance features with fire resistance. Irrespective of whether it's a ceiling, wall, beam or column, we have a suitable system solution for every requirement. And where standard systems meet their limits, engineered fire resistance is the problem solver.



**Every centimetre counts**

Slim construction that offers a huge plus in terms of net surface area. When employing Knauf drywalling systems this can be as much as three percent in comparison to solid construction. At the same time every metre of wall can be used: Fitted cupboards, for example, can be just as easily integrated as water pipes, heating pipes and other domestic and engineering services.



**Less weight, more upward scope**

But it is not just in terms of surface area, there is also additional scope in the upward direction. Thanks to the considerably lower weight, a vertical extension can be realised from a structural point of view using drywalling. For even more space. And revenues.

Lower loads on the foundation and thus lower initial costs.

Furthermore, drywalling offers even more solutions.



**Short construction time**

By tailor-made constructions and simple installation.



**Room climate**

Sustainable climate management as a comfort and health factor.



**Flexibility**

Quick retrofitting and upgrading for a customized room design.



**Sound insulation**

Ensure effective peace and quiet with more insulation at less weight.

### Foreword

Timber construction and drywalling are significant construction methods of our time. The construction of bathrooms, damp and wet rooms as timber and drywall constructions was insufficiently governed by the standards in the past and required additional codes of practice from the associations and industry.

### Introduction

According to the building codes of the German Federal States, built environments are to be erected ensuring that water, moisture as well as other chemical, physical or biological influences, sources of danger as well as unreasonable annoyances do not result.

A built environment subjected to moisture must be protected against moisture penetration for these reasons.

In interiors, drywall constructions with a grid frame made of metal and wood, clad with board-like materials in combination with sealing systems in bathrooms and damp rooms, have proven themselves for decades and are the generally recognized state-of-the-art.

Drywall construction for bathrooms and damp rooms are used, independent of the construction method in hotels, hospitals, schools, office buildings and in residential construction.

Two decisive criteria relevant to the exposure to moisture play a decisive role when drywalling is used in damp and wet rooms. The cladding material as well as the substructure must be considered separately.

When the surface is directly exposed to water, the intensity of the exposure will stipulate the level of sealing and will limit the usability of individual building materials such as gypsum. The German standard DIN 18534 issued in 2017 as a replacement for the previous standard DIN 18195, made some detailed specifications on the matter and divided the level of exposure into classes and assigned these to the respective areas in wet and damp rooms.

In the vicinity of local leaks (e.g. fastening, blank plugs applied by the installer) even with a professional level of sealing it is impossible to rule out brief exposure of the gypsum core to water. For this reason, the use of impregnated gypsum board with retarded water absorption is recommended. Corresponding testing in the Knauf laboratory have shown a significantly improved behaviour with impregnated boards.

Impregnation also plays an important role for the second criterion, the relative humidity.

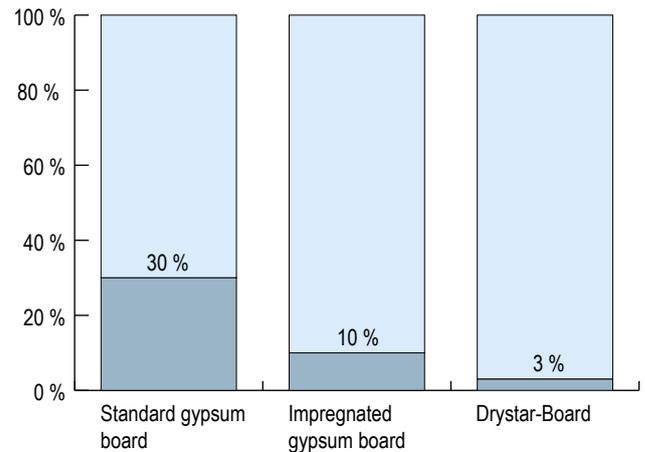
Gypsum building materials are capable of withstanding and reducing moisture peaks due to increased loading caused by rises in air humidity that result, for example, when showering. The changes in the shape as a result of hygric effects are minimal. If the material is saturated continuously the strength will be reduced. The impregnation of the gypsum core retards the absorption of water, particularly during short spikes in the air humidity level and thus prevents saturation of the gypsum core.

DIN 18181 states the following in this respect:

“Gypsum plasterboard may be installed in rooms exposed periodically to high levels of humidity or moisture, provided such rooms are adequately ventilated for moisture extraction purposes. Gypsum moisture-resistant wall board of type H2 (see EN 520) or GKBI/GKFI acc. to DIN 18180 shall preferably be used in this case.”

Gypsum boards GKBI/GKFI acc. to EN 520 have a reduced water absorption rate H2 (10 %), Knauf Drystar Board acc. to EN 15283-1 has a reduced water absorption rate H1 (max. 5 %, actual 3 %) in combination with a high resistance to mould.

Retarded water absorption comparison



Gypsum boards are generally not recommended for rooms with continuously high levels of humidity due to their usage.

AQUAPANEL Cement Board is used for high and very high levels of exposure to moisture. AQUAPANEL Cement Board is 100 % water-resistant. Cement board will not change its coherence of structure or its structural properties when exposed to water. Furthermore, AQUAPANEL Cement Board is resistant to mould growth.

The air humidity remains a decisive criteria for the selection of the most suitable corrosion protection of the frame.

The EN 13964 makes some exact stipulations regarding the frame by classifying the exposure classes according to the level of air humidity and corrosivity of the air.

This technical brochure explores the fundamental demands and enables the selection of the correct system solutions for the diverse requirements with premium Knauf system components.



Water action classes acc. to DIN 18534-1

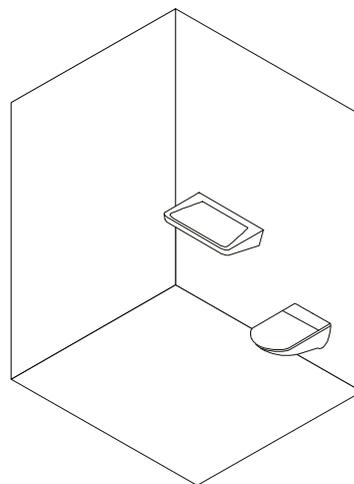
| Water action class | Water action | Description   | Application examples <sup>1) 2)</sup>  |
|--------------------|--------------|---|--|
| W0-I               | Low          | Surfaces that are not frequently subjected to splash water  | <ul style="list-style-type: none"> <li>■ Areas of wall surfaces located above washbasins in bathrooms and sinks in domestic kitchens</li> <li>■ Areas of floor surfaces in domestic areas without drains, e.g. in kitchens, domestic utility rooms, guest WCs</li> </ul>   |
| W1-I               | Moderate     | Areas with frequent exposure to splash water or infrequent exposure to process water, without intensified exposure to accumulating water                                    | <ul style="list-style-type: none"> <li>■ Wall surfaces above bath tubs and in showers in bathrooms</li> <li>■ Floor surfaces in domestic bathrooms with drain</li> <li>■ Floor surfaces in bathrooms without/with drain without high level of water exposure from the shower area</li> </ul>   |
| W2-I               | High         | Surfaces with frequent exposure to splash water and / or process water, in particular on the floor where partially intensified by exposure to accumulating water            | <ul style="list-style-type: none"> <li>■ Wall surfaces of showers in sports facilities / commercial areas<sup>3)</sup></li> <li>■ Floor surfaces with drains and/or chutes</li> <li>■ Floor surfaces in rooms with showers flush to the floor</li> <li>■ Wall and floor surfaces of sports facilities / commercial areas<sup>3)</sup></li> </ul> |
| W3-I               | Very high    | Surfaces with frequent or long exposure to splash water and/or process water and / or water from vigorous cleaning processes, intensified by exposure to accumulating water | <ul style="list-style-type: none"> <li>■ Surfaces in the areas surrounding swimming pools</li> <li>■ Surfaces in showers and large scale showers in sporting facilities / commercial areas</li> <li>■ Surfaces in commercial areas<sup>3)</sup> (industrial kitchens, laundries, breweries, etc.)</li> </ul>                                     |

- 1) It may be useful to assign adjacent not protected areas with the respective higher water action classes, because of their insufficient physical distance or lack of building measures (e.g. shower screens).
- 2) The application cases can be assigned to various water action classes to comply with the expected water effects.
- 3) Sealing surfaces if applicable with additional chemical exposure.

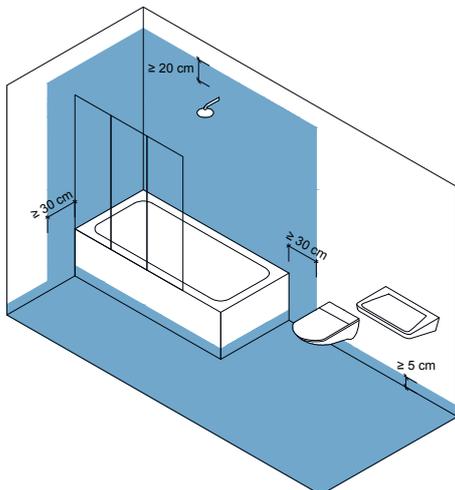
Application examples

Application examples legend

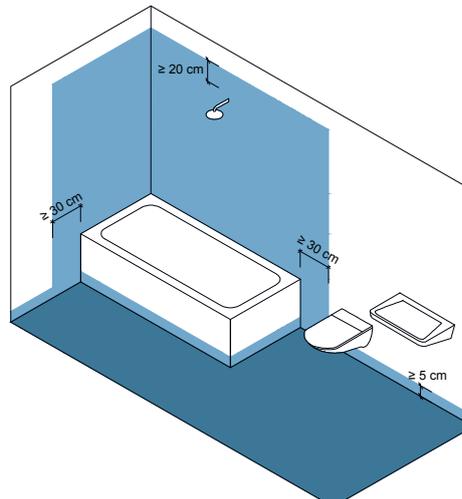
- No or low exposure to splash water, water action class **W0-I**
- Moderate exposure to splash water (splash water zone), water action class **W1-I**
- High exposure to splash water, water action class **W2-I**
- Very high exposure to splash water, water action class **W3-I**



Guest WC

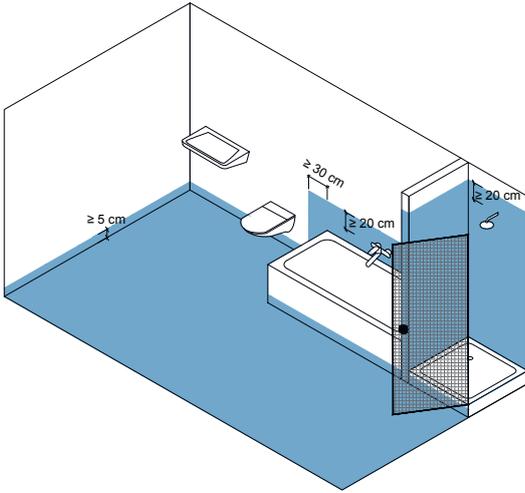


Domestic bathroom with bathtub, handheld shower head and shower screen

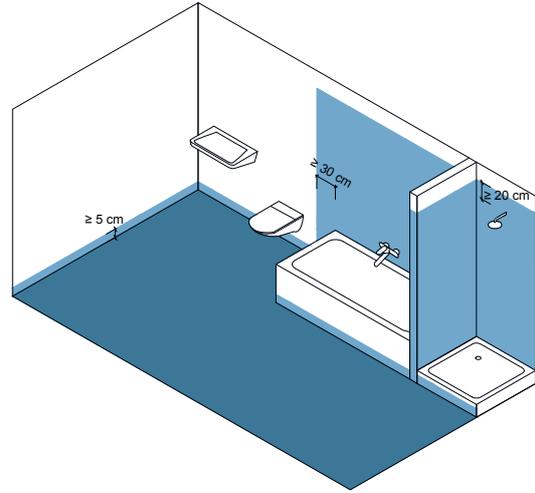


Domestic bathroom with bathtub, handheld shower head without shower screen

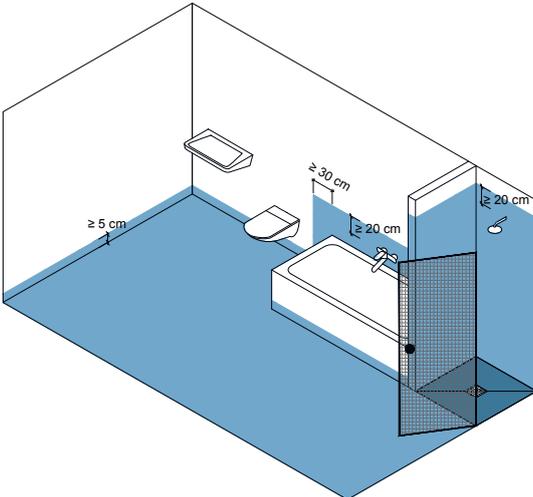
**Application examples (continued)**



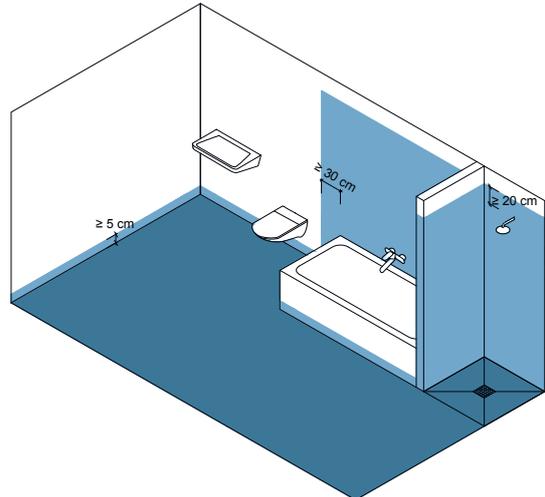
Domestic bathroom with bathtub without shower feature and with a shower tray with effective splash water protection



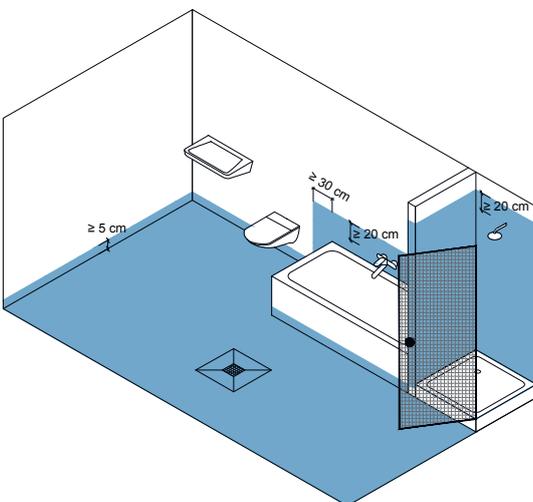
Domestic bathroom with bathtub with shower feature and with a shower tray without effective splash water protection



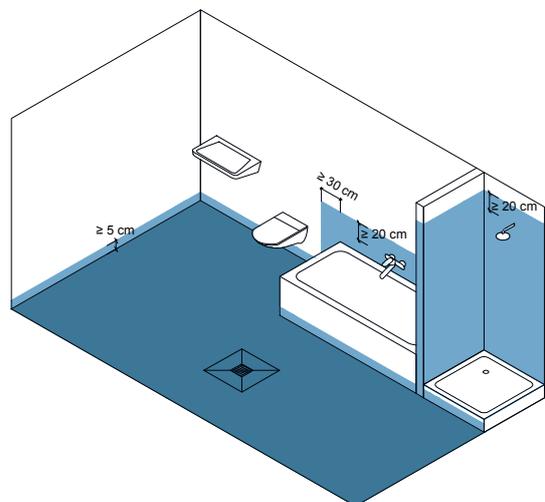
Domestic bathroom with bathtub without shower feature and with a shower flush to the floor with effective splash water protection



Domestic bathroom with bathtub with shower feature and with a shower flush to the floor without effective splash water protection



Domestic bathroom with bathtub without shower feature, shower tray with effective splash water protection and with drains not used systematically



Domestic bathroom with bathtub without shower feature, shower tray without effective splash water protection and with drains not used systematically

W0-I / W1-I

W11.de

W6.t.de

W62.de

D11.de

D13.de

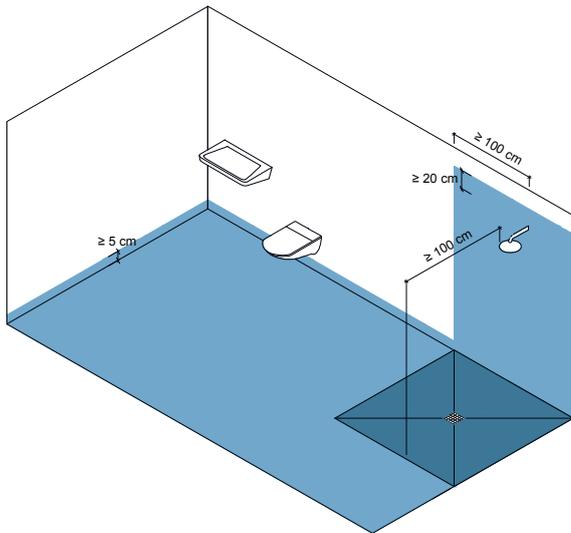
W2-I / W3-I

W38.de

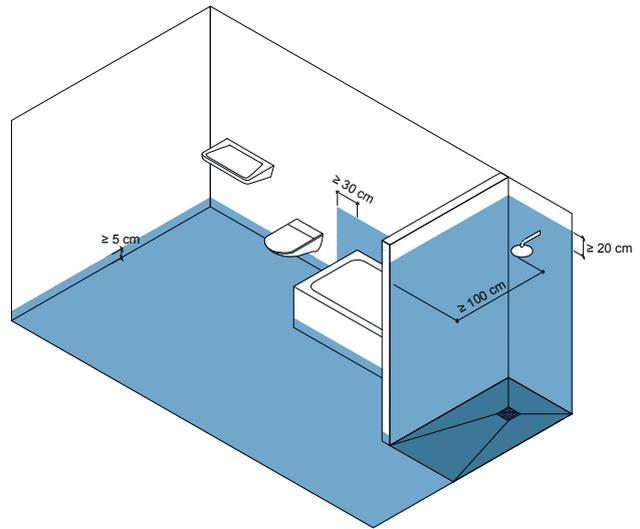
W68.de

D28.de

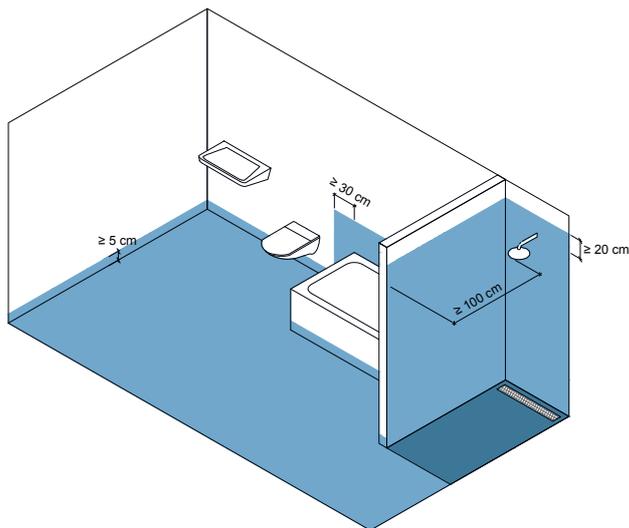
Application examples (continued)



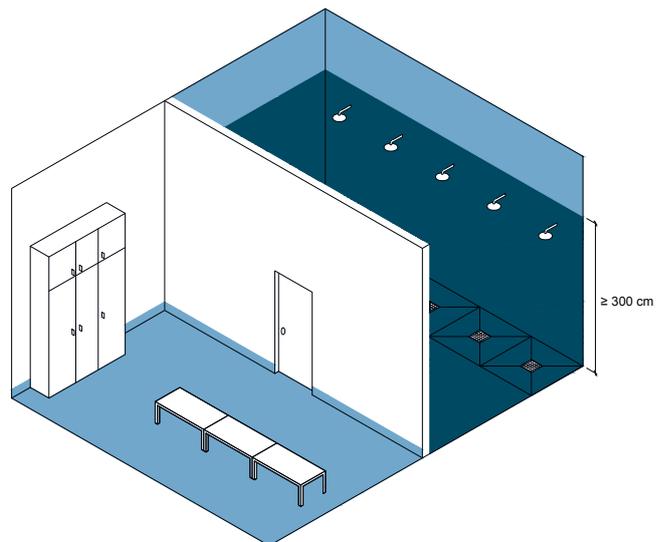
Domestic bathroom with shower flush to the floor without effective splash water protection but with a sufficient water drain zone



Domestic bathroom with bathtub without shower feature and with a shower flush to the floor without effective splash water protection but with a sufficient water drain zone



Domestic bathroom with bathtub without shower feature and with a shower flush to the floor without effective splash water protection but with a sufficient water drain zone



Example for the water action class W3-I  
Showers in public swimming pools, fitness studios, etc.

Application examples legend

- No or low exposure to splash water, water action class **W0-I**
- Moderate exposure to splash water (splash water zone), water action class **W1-I**
- High exposure to splash water, water action class **W2-I**
- Very high exposure to splash water, water action class **W3-I**

► Good to know

Further information on professional and permanent application can be found in the Code of Practice 5 "Bäder und Feuchträume im Holz- Trockenbau - Bathrooms and wet rooms in timber and drywall construction" issued by Industriegruppe Gipsplatten im Bundesverband der Gipsindustrie e.V. in Germany.

W0-I / W1-I  
W11.de  
W61.de  
W62.de  
D11.de  
D13.de  
W2-I / W3-I  
W38.de  
W68.de  
D28.de

### Determination of substrates acc. to EN 18534-1

| Moisture sensitive substrates   | Moisture insensitive substrates  |
|---|--|
| <ul style="list-style-type: none"> <li>■ Gypsum plasters and gypsum lime plasters made of dry gypsum mortar acc. to EN 13279-1</li> <li>■ Gypsum wallboards acc. to EN 12859</li> <li>■ Gypsum boards with fleece reinforcement to EN 15283-1</li> <li>■ Gypsum fibre boards acc. to EN 15283-2</li> <li>■ Gypsum boards acc. to DIN 18180 or alt. EN 520</li> <li>■ Calcium sulphate based screed acc. to EN 13813</li> <li>■ Wood and wooden composite materials</li> </ul> | <ul style="list-style-type: none"> <li>■ Concrete acc. to EN 206</li> <li>■ Lime cement plaster of mortar group CS II/III acc. to EN 998-1</li> <li>■ Cement of mortar group CS IV acc. to EN 998-1</li> <li>■ Cavity wallboards made of light concrete acc. to DIN 18148</li> <li>■ Cementitious mineral wallboards</li> <li>■ Composite units made of expanded or extruded polystyrene with coating of mortar and mesh reinforcement</li> <li>■ Aerated concrete boards acc. to DIN 4166</li> <li>■ Cementitious screed</li> <li>■ Corrosion-protected metallic materials</li> <li>■ Products with Certificate of Usability (abZ/aBG/ETA) for this area</li> </ul> |

### Notes and recommendations for damp-proof sealing acc. to Code of Practice No. 5

| Substrate   | Water action classes |      |         |                     |                 |                 |             |       |         |                  |      |         |
|---|----------------------|------|---------|---------------------|-----------------|-----------------|-------------|-------|---------|------------------|------|---------|
|   | W0-I (low)           |      |         | W1-I (moderate)     |                 |                 | W2-I (high) |       |         | W3-I (very high) |      |         |
|   | Floor                | Wall | Ceiling | Floor               | Wall            | Ceiling         | Floor       | Wall  | Ceiling | Floor            | Wall | Ceiling |
| Knauf gypsum board EN 520                         | –                    | ●    | ●       | X                   | L-R-B           | ●               | –           | –     | –       | –                | –    | –       |
| Drystar Board                                     | –                    | ●    | ●       | X                   | L-R-B           | ●               | –           | –     | –       | –                | –    | –       |
| Gypsum fibre boards EN 15283-2                    | ●                    | ●    | ●       | L-R-B <sup>1)</sup> | L-R-B           | ●               | –           | –     | –       | –                | –    | –       |
| Knauf gypsum plaster EN 13279-1, e.g. MP 75       | X                    | ●    | ●       | X                   | L-R-B           | ●               | X           | –     | –       | X                | –    | –       |
| Knauf lime-cement plasters EN 998-1, e.g. Rotkalk | X                    | ●    | ●       | X                   | ● <sup>2)</sup> | ●               | X           | L-R-B | D       | X                | MR   | S       |
| Knauf flowing screeds EN 13813, e.g. FE 80        | ●                    | X    | X       | L-R-B <sup>1)</sup> | X               | X               | –           | X     | X       | –                | X    | X       |
| AQUAPANEL Cement Board Indoor/SkyLite             | X                    | ●    | ●       | X                   | ● <sup>2)</sup> | ● <sup>2)</sup> | X           | L-R-B | S       | X                | MR   | S       |
| Wood and wooden composite boards                  | –                    | –    | –       | –                   | –               | –               | –           | –     | –       | –                | –    | –       |

1) Not permissible in areas with drains used systematically (e.g. Barrier free shower areas)

2) Detailed sealing required if water can ingress moisture-sensitive component layers, e.g. insulation.

#### Legend of symbols

- No sealing is necessary provided that water-repellent surfaces available (apply sealing if deemed necessary and requested by the client or planner)
- X Application not possible
- Application not permissible

#### Legend of abbreviations

L-R-B S/B liquid or rolls/sheets or board form

MR-R-B S/B-L exclusively mineral-based or reaction resin or S/B sheets or board form

MR S/B-L exclusively mineral-based or reaction resin

S Sealing recommended

S/B Sealing bonded with the substrate and the wearing and protective layer made of tiles and boards

S/B-L Sealing materials in liquid form for application bonded with tiles and boards

S/B-B Application of board type sealing materials bonded with tiles and boards

|             |   |
|-------------|---|
| <b>Note</b> | Divergences from the table are permissible, if the application in industrial structural wood frame panel construction observes the QDF guidelines <sup>3)</sup> or a proof of the equivalence of the measures in the form of a survey by a technically qualified bodies is submitted. A list of the technically qualified bodies is available from the Quality Association of German Pre-fabrication (QDF). |
|-------------|---|

3) QDF: *Qualitätsgemeinschaft Deutscher Fertigung* - Quality Association of German Pre-fabrication

W0-I / W1-I  
 W11.de  
 W6+de  
 W62.de  
 D11.de  
 D13.de  
 W2-I / W3-I  
 W38.de  
 W68.de  
 D28.de

## Basics

### Corrosion

Corrosion is the chemical reaction of metallic materials with substances in the environment. These materials often lose their good surface qualities and structural properties due to corrosion. The changes are measurable. Corrosion is often an electro-chemical phenomenon.

### Corrosion protection

In rooms, in which the relative humidity only briefly exceeds 60 % in the course of the day and where condensation and corrosive impurities can be excluded with certainty, standard metal profiles are used in wall and ceiling systems. An example here would be domestic applications.

On the other hand, in rooms with high levels of air humidity or special atmospheric conditions, measures for enhanced corrosion protection are required. Knauf offers the wet room stud frame with additional protection against corrosion specially for this field of application. The damp room stud frames fulfil the demands of the corrosivity category C3 (high) and C5-M (high).

### Definition of corrosion acc. to EN ISO 8044

Corrosion means the physicochemical interaction between a metal and its environment which leads to a change in the properties of the metal

and is liable to cause substantial impairment of the function of the metal, the environment or the technical system of which the metal is a part. This interaction is often of an electro-chemical nature.

For determination of the required level of corrosion protection or the corrosivity category, the table "Approximate assignment of the atmospheric conditions of the EN ISO 12944" can be used.

### Normative background

The topic of corrosion protection in drywalling is the subject of several different standards. Corrosion protection conditions and notes on the implementation can be addressed in the EN 13964 "Suspended ceilings - Requirements and test methods" as well as in the DIN 18168 part 1 "Ceiling linings and suspended ceilings with gypsum plasterboards" for drywalling. In order to provide an assessment basis for partition stud frames, the standard EN 12944 "Corrosion protection of steel structures by protective paint systems" or DIN 55634 "Paints, varnishes and coatings – Corrosion protection of supporting thin-walled building components made of steel" can be used as a reference.

### Wet area stud frame

The requirements of the building are diverse. This is why Knauf offers a comprehensive range of profiles and accessories in corrosion protection quality C3 or C5-M. For more detailed information see "Wet area grid" on page 26.

## Corrosivity, extract from the standard series EN ISO 12944

| Corrosivity category<br>Corrosion stress | Corrosivity  | Durability |              | Condensing of<br>water vapour<br>Hours | Influence of salt<br>spray<br>Hours | Examples of typical environments  |
|--|--|------------|--------------|--|-------------------------------------|---|
|  |  | Class      | Years        |  |                                     |   |
| C1<br>very low                           | Very low,<br>hardly aggressive,<br>internal  | Low        | 2 to 5       | –                                      | –                                   | Interior<br><br>Heated buildings with neutral atmospheres, e.g. offices, shops, schools, hotels   |
|  |  | Medium     | 5 to 15      | –                                      | –                                   |   |
|  |  | High       | more than 15 | –                                      | –                                   |   |
| C2<br>low                                | Very low,<br>moderately<br>aggressive,<br>external/internal  | Low        | 2 to 5       | 48                                     | –                                   | Unheated buildings where condensation can occur, e.g. stores, sports halls  |
|  |  | Medium     | 5 to 15      | 48                                     | –                                   |   |
|  |  | High       | more than 15 | 120                                    | –                                   |   |
| C3<br>medium                             | Moderate,<br>hardly aggressive,<br>external/internal   | Low        | 2 to 5       | 48                                     | 120                                 | Production rooms with high levels of moisture and some air pollution, e.g. plants for manufacturing foodstuffs, laundries, breweries, dairies |
|  |  | Medium     | 5 to 15      | 120                                    | 240                                 |   |
|  |  | High       | more than 15 | 240                                    | 480                                 |   |
| C4<br>high                               | High, moderately<br>aggressive,<br>external/internal   | Low        | 2 to 5       | 120                                    | 240                                 | Chemical plants, swimming pools, bathhouses above sea water   |
|  |  | Medium     | 5 to 15      | 240                                    | 480                                 |   |
|  |  | High       | more than 15 | 480                                    | 720                                 |   |
| C5-M<br>very high (maritime)             | Very high,<br>maritime,<br>external/internal   | Low        | 2 to 5       | 240                                    | 480                                 | Buildings or areas with almost permanent condensation and high degree of contamination  |
|  |  | Medium     | 5 to 15      | 480                                    | 720                                 |   |
|  |  | High       | more than 15 | 720                                    | 1440                                |   |
| <b>Notes</b>                             | When exposed to corrosive substances on the surface or in the air, the minimum requirement is always C5-M.<br>Walls and ceiling surfaces in non splash water areas generally do not require sealing. |            |              |  |                                     |   |

#### ► Good to know

The durability is the expected service life of a coating system until the first maintenance cycle. The durability is not a warranty period.

Necessary corrosion protection in dependence on the substrate and water action class

| Substrate                      | Corrosion protection |      |         |                 |                       |         |             |      |         |                  |         |         |
|--------------------------------|----------------------|------|---------|-----------------|-----------------------|---------|-------------|------|---------|------------------|---------|---------|
|                                | W0-I (low)           |      |         | W1-I (moderate) |                       |         | W2-I (high) |      |         | W3-I (very high) |         |         |
|                                | Floor                | Wall | Ceiling | Floor           | Wall                  | Ceiling | Floor       | Wall | Ceiling | Floor            | Wall    | Ceiling |
| Knauf gypsum board EN 520      |                      | Z100 | Z100    |                 | Z100                  | Z100    | –           | –    | –       | –                | –       | –       |
| Drystar-Board                  | Z100                 | Z100 | Z100    |                 | Z100                  | Z100    | –           | –    | –       | –                | –       | –       |
| Gypsum fibre boards EN 15283-2 | Z100                 | Z100 | Z100    | Z100            | Z100                  | Z100    | –           | –    | –       | –                | –       | –       |
| AQUAPANEL Cement Board         |                      | Z100 | Z100    |                 | Z100/C3 <sup>1)</sup> | Z100    | –           | C3   | C3      | –                | C3/C5-M | C3      |

1) Z100 with seal or C3 without seal

|              |   |
|--------------|---|
| <b>Notes</b> | Z100 describes the protective coating of the profiles in acc. to DIN 18182-1 in conjunction with the EN 14195.                      |
|              | Z100 means 100g/m <sup>2</sup> of zinc layer on both sides – corresponding to 7 µm per side in acc. to DIN 18168-1:2007-04 table 2. |

**► Good to know**  
The definition of the necessary corrosion protection is undertaken by the planner in dependence on the conditions existing on-site.

W0-I / W1-I  
W11.de  
W6.t.de  
W62.de  
D11.de  
D13.de  
W2-I / W3-I  
W38.de  
W68.de  
D28.de

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W66.de

D28.de



## **System components**

Product overview

Knauf GKBI/GKFI

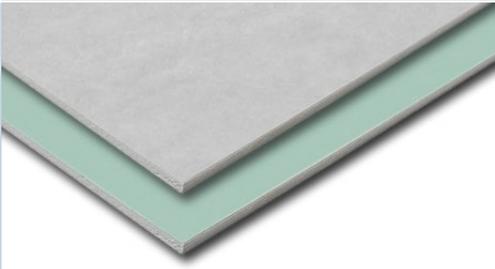
Drystar-Board

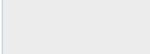
AQUAPANEL Cement Board Indoor

AQUAPANEL Cement Board SkyLite

Wet area stud frame

### Comparison of the fields of application of Knauf boards in wet and damp areas

| Water action class  | Application surfaces  | Knauf GKB/GKF   | Knauf Drystar Board<br>Knauf GKB/GKFI  |
|---|---|---|--|
|   |   | Knauf Wallboard (GKB)<br>Knauf DIY Board (GKB)<br>Knauf Piano fire-resistant board (GKF)<br>Knauf Feuerschutzplatte fire-resistant board (GKF)<br>Solid Board (GKF) | Knauf Wallboard (GKBI)<br>Knauf DIY Board (GKBI)<br>Knauf Piano fire-resistant board (GKFI)<br>Knauf Feuerschutzplatte fire-resistant board (GKFI)<br>Solid Board (GKFI)<br>Diamant (GKFI) |
|   |   |   |   |
| <br>W0-I<br>(0 – low)        | <b>Wall</b><br>Guest WC   | ✓ ✓   | ✓  |
|   | <b>Ceiling</b><br>Domestic bathroom   | ✓ ✓   | ✓  |
|   | <b>Floor</b><br>In domestic areas, e.g. in kitchens,<br>domestic utility rooms, guest WCs |   |  |
| <br>W1-I<br>(A0 – moderate) | <b>Wall</b><br>Domestic bathroom<br>(Shower and bathtub area)                             | ✓   | ✓ ✓  |
|   | <b>Ceiling</b><br>Sports facilities/wellness areas<br>(Ceiling height ≥ 3 m)              | ✓   | ✓ ✓  |
|   | <b>Floor</b><br>Domestic bathroom away from the<br>shower area                            |   |  |
| <br>W2-I<br>(A – high)      | <b>Wall</b><br>Public showers or wet rooms of sports<br>facilities                        |   |  |
|   | <b>Ceiling</b><br>Swimming pools / public showers   |   |  |
| <br>W3-I<br>(C – high)      | <b>Wall</b><br>Commercial kitchens or laundries with<br>chemical exposure                 |   |  |
|   | <b>Ceiling</b><br>Commercial kitchens or laundries with<br>chemical exposure              |   |  |

 Recommended
  Suitable
  Not suitable

| AQUAPANEL Cement Board Indoor  | AQUAPANEL Cement Board SkyLite   | Pre-fab screed Brio   |
|--|--|---|
|  |  |  |
| ✓  |  |   |
| ✓  | ✓  |   |
|  |  | ✓ ✓   |
| ✓  |  |   |
| ✓  | ✓  |   |
|  |  | ✓ ✓   |
| ✓ ✓  |  |   |
| ✓  | ✓ ✓  |   |
| ✓ ✓  |  |   |
| ✓  | ✓ ✓  |   |

- W0-I / W1-I
- W11.de
- W6.1.de
- W62.de
- D11.de
- D13.de
- W2-I / W3-I
- W38.de
- W68.de
- D28.de

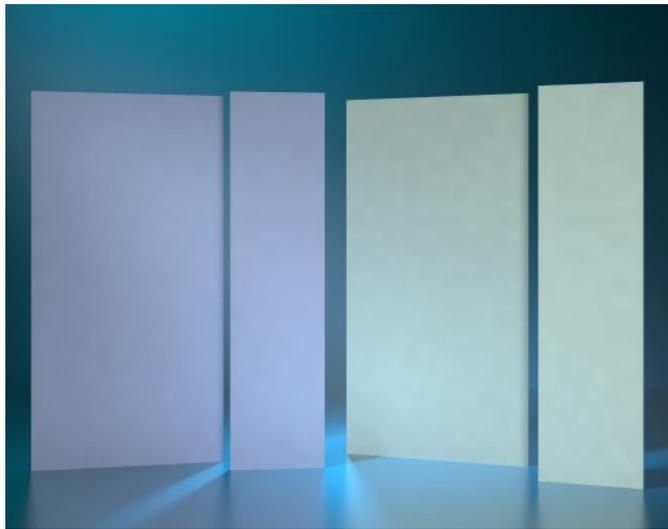
### Gypsum boards for areas with moderate humidity

Solutions are required, particularly in residential construction, which are universal in application and not just to resist moisture, but also all other situations encountered on a daily basis.

#### Product description

Knauf boards GKBI/GKFI have special features for the application in rooms with moderate levels of humidity. They are gypsum boards with an impregnated gypsum core. This impregnation guarantees reduced water absorption. Diverse fields of application on walls and ceilings are possible.

Knauf Diamant GKFI boards are used in all fields of interior works as cladding of premium drywall systems with enhanced requirements for sound insulation and fire protection, and in case of special requirements on mechanical resistance and in rooms with moderately high humidity.



#### Properties and added value

- Impregnated for reduced water absorption
- Easy application
- Non-combustible
- Low expansion and shrinkage when climate conditions change
- Flexible method of construction even with arched components or design units
- Convenient format (Knauf DIY Board)
- Good coherence of structure when exposed to fire (GKFI)
- Universal application (Knauf Diamant)
- Increased permissible wall heights due to high strength (Knauf Diamant)
- High dowel load capacity (Knauf Diamant)
- Robust surface (Knauf Diamant)
- Flexurally ductile special gypsum core for high sound insulation (Knauf Diamant)
- Bending is possible (board thickness 12.5 mm)
- Narrow format (DIY Board, Solid Board, Knauf Diamant 18)
- Suitable for larger substructure clearances (Knauf Diamant 18 / Solid Board)
- Solid character (Solid Board)
- High stability even with single-layer constructions (Solid Board)

#### Fields of application

The gypsum boards for basis systems in drywalling convince with their simple application and a high level of form stability. The impregnation of the boards make ideal for cost-effective cladding in domestic applications.

- Kitchen
- Guest WC
- Bathroom

For enhanced demands regarding sound insulation and fire resistance as well as robustness, we recommend the use of Knauf Feuerschutzplatten fire-resistant board, Feuerschutzplatten Knauf Piano fire-resistant board or Knauf Diamant.

#### Application areas

- Ceiling linings and suspended ceilings
- Attic linings
- Metal stud partitions
- Installation walls
- Timber stud partitions, non-load bearing
- Structural wood frame partitions
- Furrings
- Dry lining (Knauf DIY Board)
- Installation walls

Features

| Board width<br>mm   | Board thickness<br>mm | Minimum weight<br>kg/m <sup>2</sup> | Edges                            |                      | Board liner colour | Rear side marking | Board type |        |
|---|-----------------------|-------------------------------------|----------------------------------|----------------------|--------------------|-------------------|------------|--------|
|   |                       |                                     | Long edges with paper lining     | Front edges          |                    |                   | DIN 18180  | EN 520 |
| <b>Knauf Wallboard GKBI 12.5</b>  |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>1250   | 12.5                  | ≥ 8.5                               | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Green              | Blue              | GKBI       | H2     |
| <b>Knauf DIY Board GKBI 12.5</b>  |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>600    | 12.5                  | ≥ 8.5                               | Half-rounded edge (HRK)          | Cut square edge (SK) | Green              | Blue              | GKBI       | H2     |
| <b>Knauf Piano fire-resistant board GKFI 12.5</b>   |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>1250 | 12.5                  | ≥ 10.0                              | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Green              | Red               | GKFI       | DFH2   |
| <b>Knauf Feuerschutzplatte fire-resistant board GKFI 15</b>                                 |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>1250 | 15                    | ≥ 12.0                              | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Green              | Red               | GKFI       | DFH2   |
| <b>Solid Board GKFI 20</b>  |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>625  | 20                    | ≥ 16.0                              | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Green              | Red               | GKFI       | DFH2   |
| <b>Solid Board GKFI 25</b>  |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>625  | 25                    | ≥ 20.0                              | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Green              | Red               | GKFI       | DFH2   |

Legend for board types: see next page

W0-I / W1-I  
W11.de  
W6.t.de  
W62.de  
D11.de  
D13.de  
W2-I / W3-I  
W38.de  
W68.de  
D28.de

### Features (continued)

| Board width<br>mm   | Board thickness<br>mm | Nominal weight<br>kg/m <sup>2</sup> | Edges                            |                      | Board liner colour | Rear side marking | Board type |        |
|---|-----------------------|-------------------------------------|----------------------------------|----------------------|--------------------|-------------------|------------|--------|
|   |                       |                                     | Long edges with paper lining     | Front edges          |                    |                   | DIN 18180  | EN 520 |
| <b>Knauf Diamant GKFI 12.5</b>  |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>1250  | 12.5                  | 12.8                                | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Blue               | Red               | GKFI       | DFH2IR |
| <b>Knauf Diamant GKFI 15</b>  |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>1250  | 15                    | 15.5                                | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Blue               | Red               | GKFI       | DFH2IR |
| <b>Knauf Diamant GKFI 18</b>  |                       |                                     |                                  |                      |                    |                   |            |        |
| <br>625 | 18                    | 18.0                                | Half-rounded tapered edge (HRAK) | Cut square edge (SK) | Blue               | Red               | GKFI       | DFH2IR |

Legend for board types:

D = Gypsum plasterboard with controlled density

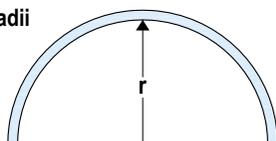
F = Gypsum boards with mat reinforcement with improved core adhesion at high temperature

H2 = Gypsum boards with mat reinforcement with reduced water absorption rate ≤ 10 %

I = Gypsum plasterboard with enhanced surface hardness

R = Gypsum plasterboard with enhanced strength

#### Minimum permissible bending radii



| Board GKBI/GKFI                                      | Permissible bending radius r |             |
|--|------------------------------|-------------|
|  | Dry bending                  | Wet bending |
| Knauf Wallboard GKBI 12.5                            | r ≥ 2500 mm                  | r ≥ 1000 mm |
| Knauf DIY Board GKBI 12.5                            | r ≥ 2500 mm                  | r ≥ 1000 mm |
| Knauf Piano fire-resistant board GKFI 12.5           | r ≥ 2500 mm                  | r ≥ 1000 mm |
| Knauf Feuerschutzplatte fire-resistant board GKFI 15 | –                            | –           |
| Solid Board GKFI 20                                  | –                            | –           |
| Solid Board GKFI 25                                  | –                            | –           |
| Diamant GKFI 12.5                                    | r ≥ 2500 mm                  | r ≥ 1000 mm |
| Diamant GKFI 15                                      | –                            | –           |
| Diamant GKFI 18                                      | –                            | –           |

Special accessories

Uniflott impregnated

Uniflott impregnated is a special gypsum-based synthetically enhanced powdery filling material set by the use of additives. Uniflott impregnated is water-repellent and matched to impregnated (green) Knauf boards.



Diamant screws

An important component for sophisticated Knauf Diamant systems is the Knauf Diamantschraube screw. The special thread geometry ensures easy insertion and tightening of the screw-in hard gypsum boards.

Diamant screw XTN



Diamant screw XTB



Fasteners

Ceiling Steel Dowel



Knauf access panels

Access panel for installation in walls (drywall partitions and furrings/linings) and in suspended ceilings consisting of:

- Anodised aluminium frame
- Openable and fully detachable hatch
- Flush adhesively bonded or screw fixed gypsum board Diamant GKFI (with dimensions > 600 mm only for screw fastened gypsum board Diamant GKFI)
- Self-activating drop catch



Access panel without fire resistance

- E112.de REVO 12.5
- E112a.de REVO 18 Variant
- E112b.de REVO 25 Variant
- E112d.de REVO Airtight / Dust-proof 12.5
- E141.de F-TEC Airtight / Dust-proof and Smoke-proof

Access panels with fire resistance

- E121.de REVO BS30 Decke
- E125a.de REVO BS30 Wall 12.5
- E125b.de REVO BS90 Wall 25

Access panel with splash water protection

E143.de F-TEC Drystar driving-rain proof

Knauf traverses

Knauf multi-purpose traverses



The multi-purpose traverse is suitable for accepting loads attached to the wall up to 1.5 kN/m wall length, e.g. cupboards, boilers, folding wall attached seats, folding handles and similar.

It consists of a 23 mm thick multi-layer wooden board and galvanized sheet metal profiles.

Knauf steel anchoring traverse with gypsum fibre insert



The steel anchoring traverse with gypsum fibre insert is suitable for accepting loads attached to the wall up to 1.5 kN/m wall length, e.g. cupboards, shelves, handrails and similar.

It consists of 0.75 mm thick sheet metal as well as an 18 mm thick gypsum fibre board.

Knauf steel anchoring traverse



The steel anchoring traverse is suitable for accepting loads attached to the wall up to 1.0 kN/m wall length, e.g. towel holders, cupboards, shelves and similar. Not suitable for dynamic loads such as folding wall attached seats.

The steel anchoring traverse consists of 0.75 mm thick sheet metal.

W0-I / W1-I  
 W11.de  
 W6+.de  
 W62.de  
 D11.de  
 D13.de  
 W2-I / W3-I  
 W38.de  
 W68.de  
 D28.de

## Drystar-Board

### Special gypsum boards for rooms with high levels of air humidity and temporary exposure to splash water

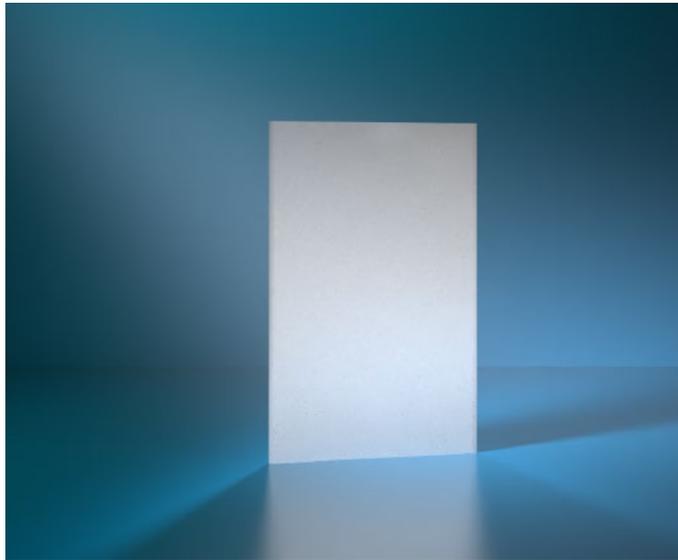
High levels of damp and moisture in rooms require coordinated drywall solutions to meet these demands. Particular attention must be paid to the influences from exposure to chemicals as well as to corrosion protection. This is decisive for the materials and construction materials to be used. Ceilings and walls must meet these demands over the entire life cycle.

The special gypsum board Knauf Drystar Board has special properties for application in damp and wet rooms.

Knauf Drystar Board is a special gypsum board laminated with grey-coloured special fleece. Diverse fields of application on walls and ceilings are possible.

### Product description

Knauf Drystar Board, type GM-FH1IR corresponds to EN 15283-1 and features a low-level of water absorption of less than 3 % in combination with a high resistance to mould. The special fleece surrounds the water-repellent gypsum core and is an ideal substrate for tiles or other surface coatings. Drystar-Board as well as other Knauf gypsum boards are impressive thanks to their simple and fast application.



### Features

| Board width<br>mm  | Board thickness<br>mm | Nominal weight<br>kg/m <sup>2</sup> | Edges                              |                      | Surface fleece colour | Rear side marking | Board type |
|--|-----------------------|-------------------------------------|------------------------------------|----------------------|-----------------------|-------------------|------------|
|  |                       |                                     | Fleece laminated longitudinal edge | Front edge           |                       |                   |            |
| <b>Knauf Drystar-Board 12.5</b>  |                       |                                     |                                    |                      |                       |                   |            |
| <br>1250 | 12.5                  | 11.0                                | Tapered edge (AK)                  | Cut square edge (SK) | Light grey            | Red               | GM-FH1IR   |

Legend for board types:

Drystar Board = GM-FH1IR

GM = Gypsum boards with mat reinforcement

F = Gypsum boards with mat reinforcement with improved core adhesion at high temperature

H1 = Gypsum boards with mat reinforcement with reduced water absorption rate ≤ 5 %

I = Gypsum plasterboard with enhanced surface hardness

R = Gypsum plasterboard with enhanced strength

20 FN01.de Drywall Solutions in Damp and Wet Rooms

### Properties and added value

- Insensitive to wet and damp
- Mould resistant
- Non-combustible
- Easy application, analogue to conventional gypsum boards
- Ideal substrate for tiles and sealing
- Low expansion and shrinkage when climate conditions change
- Flexible method of construction even with arched components or design units

### Fields of application

Knauf Drystar-Board satisfies special requirements in wet and damp rooms. It can be installed in wall and ceiling systems and used in many areas of interior fitting as cladding for drywall systems in wet and damp rooms. Knauf Drystar-Board is an ideal substrate for sealing and tiles as well as coatings. Creative ideas with ceiling and wall design and architectural challenges know no limits. Whether it's folding or bending, Knauf Drystar Board leaves nothing to be desired in room design.

- Swimming pools
- Wellness areas
- Schools and similar educational buildings
- Hospitals

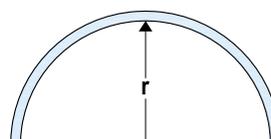
In the representation of the areas of application, it becomes evident that the Knauf Drystar Board optimally supplements the Knauf product range for interior fitting in damp and wet rooms.

### Application areas

- Ceiling linings and suspended ceilings
- Metal stud partitions
- Furrings

### Minimum permissible bending radii

Dry bending:  $r \geq 2750 \text{ mm}$



### Special accessories

The system components perfectly matched to one another facilitate safe and durable wall and ceiling constructions, which are resistant to mould and damp.

#### Drystar-Filler

Knauf Drystar Filler is a limestone-based, synthetically bonded powdery material set by the use of additives to be ideal to its field of application and is used for jointing Drystar systems.



#### Drystar screws

An important component for the Knauf Drystar Systems is the corrosion-protected Knauf Drystar screw.

Drystar Schraube XTN screw



Drystar Schraube XTB screw



Drystar Schraube LN screw



#### Fasteners

Ceiling steel dowel corrosion protection A4



#### Access panel F-TEC Drystar splash waterproof

Splash waterproof access panel (EN 1027, classification EN 12208) for the installation in walls (drywall partitions, furrings, solid walls) and in suspended ceilings.

All-purpose use for cladding thickness 12.5 and 25 mm consisting of:

- An anodised aluminium outer frame with openable and fully detachable hatch
- Flush screw fastened face board made of Drystar-Board (for standard sizes)
- With dimensions > 600 mm supplied only as a screw fixed variant, with dimensions > 800 mm supplied only with trimmer profiles
- Seal
- Self-activating drop catch



#### Available sizes

Width x length  
 300 x 300 mm  
 400 x 400 mm  
 500 x 500 mm  
 600 x 600 mm  
 700 x 700 mm  
 800 x 800 mm

## AQUAPANEL Cement Board Indoor

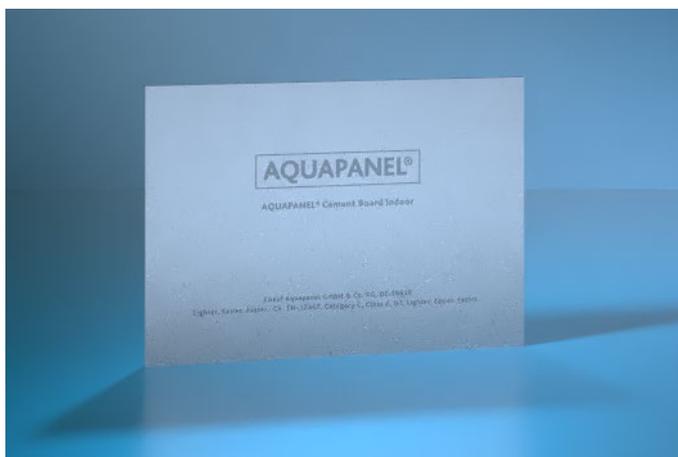
### Cementitious wallboard for walls, whose rooms are exposed to damp and wet conditions

In many building sectors resistance to moisture and water is decisive for quality and durability. A building material for these areas must meet diverse requirements.

AQUAPANEL Cement Board Indoor is manufactured from mineral materials, features very good water vapour diffusion behaviour and is resistant to water. Even under the most difficult conditions it offers exceptional durability in wet areas, even when exposed to the effects of chlorine. When exposed to water it will only exhibit extremely minor and system safe changes in shape. The cement board will not change its coherence of structure nor its structural properties. Furthermore, is it resistant to mould growth and thus suitable for use in areas where increased levels of humidity are expected.

### Product description

The cement board compliant to EN 12467 consists of a core made of Portland cement and lightweight aggregates and is reinforced with a glass gauze fabric on the front and rear. The ends are cut and the edges are reinforced (EasyEdge™).



### Properties and added value

- For all damp and wet rooms
- 100 % water resistant
- Mould resistant
- Safe to apply
- Ecological and eco-friendly, made from natural materials
- Stable and robust with a high level of impact resistance
- Apply with scoring and breaking
- Simple and easy to install
- Can be shaped when dry, bending radius  $\geq 1$  m with full board length
- Tiles can be applied directly after installation, even with single-layer cladding (spacing 625 mm)
- Can bear up to 50 kg of tiles per  $m^2$  of wall on one side or 25 kg of tiles on both wall sides
- Surface quality up to AQ4
- Non-combustible

### Fields of application

The board can be used in all domestic and commercial wet areas.

- Laboratories
- Kitchens
- Swimming pools
- Saunas
- Protection against moisture is also important in cellars and garages as these constructional components are often subjected to the dangers of moisture from masonry, floors, ground water or even flooding.

### Application areas

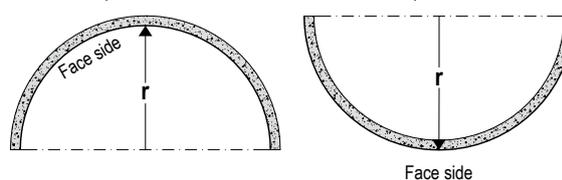
- Metal stud partitions
- Timber stud partitions (non-load bearing)
- Installation shaft walls
- Suspended ceilings

### Features

| Board width<br>mm                         | Board thickness<br>mm | Nominal weight<br>kg/m <sup>2</sup> | Edges<br>Long edge or front edge |
|---|-----------------------|-------------------------------------|----------------------------------|
| <b>AQUAPANEL Cement Board Indoor 12.5</b> |                       |                                     |                                  |
| 900                                       | 1250                  | 12.5                                | 11.0                             |
|   |                       |                                     | EasyEdge™                        |

### Minimum permissible bending radii

Dry bending:  $r \geq 1000$  mm (Stud spacing  $\leq 312.5$  mm)  
 Inside arch, concave      Outside arch, convex



### Special accessories

#### AQUAPANEL Fugenkleber (PU) joint adhesive

AQUAPANEL Fugenkleber (PU) joint adhesive is used for frictional bonding of AQUAPANEL Cement Board Indoor in the wall areas.



#### AQUAPANEL Grundierung primer

AQUAPANEL Grundierung primer is a solvent-free synthetic emulsion for priming AQUAPANEL Cement Board Indoor boards, guaranteeing the maximum adhesion of tiles and plasters. The concentrate is pigmented pink.



Special accessories (continued)

**AQUAPANEL Fugen- und Flächenspachtel – weiß joint filler & skim coating – white**

AQUAPANEL Fugen- und Flächenspachtel weiß joint filler & skim coating white is a cementitious filler for full surface skimming of AQUAPANEL Cement Board Indoor, e.g. as a substrate for decorative plasters or paint coats. It is applied to the full surface with embedded AQUAPANEL Gewebe mesh.



**AQUAPANEL Q4 Finish**

AQUAPANEL Q4 Finish is a ready-mixed, water-repellent surface filler for premium, smooth surfaces up to quality level AQ4.



**AQUAPANEL Fugenband joint tape**

AQUAPANEL Fugenband joint tape (10 cm) is a glass fibre tape with an alkali-resistant coating. It is used to reinforce joints and must be embedded in the AQUAPANEL joint filler and skim coating.



**AQUAPANEL Gewebe reinforcing mesh**

AQUAPANEL Gewebe reinforcing mesh is an alkali-resistant glass fabric and is used to reinforce AQUAPANEL joint filler & skim coating – white.



**AQUAPANEL Maxi Schrauben screws**

AQUAPANEL Maxi Schrauben screws have been specially developed for fixing AQUAPANEL Cement Board onto timber and metal frameworks of differing thicknesses. Both sharp point and cutting point versions with countersunk are available. AQUAPANEL Maxi Schrauben screws can be used for both wall and ceiling applications in interior and exterior applications. The screws have a special corrosion-proof coating that guarantees a very high level of corrosion resistance.

AQUAPANEL Maxi Schrauben screws SN



AQUAPANEL Maxi Schrauben screws SB



**AQUAPANEL traverses**

**AQUAPANEL damp room traverse M C3**



- Sheet metal t = 0.75 mm, coated black
- Height 290 mm
- Max. loading for cladding with AQUAPANEL Cement Board Indoor:
 

|                             |          |
|-----------------------------|----------|
| Single-layer cladding       | 1.0 kN/m |
| Single-layer cladding tiled | 1.5 kN/m |
| Double-layer cladding       | 1.5 kN/m |

**AQUAPANEL damp room traverse MH C3**



- Sheet metal t = 0.75 mm, coated black with MDF insert
- Height 290 mm
- Max. loading for cladding with AQUAPANEL Cement Board Indoor:
 

|                             |          |
|-----------------------------|----------|
| Single-layer cladding       | 1.5 kN/m |
| Single-layer cladding tiled | 1.5 kN/m |
| Double-layer cladding       | 1.5 kN/m |

**Note** AQUAPANEL damp room traverses are not available ex-stock and are custom manufactured.

W0-I / W1-I  
 W11.de  
 W6 t1.de  
 W6 t1.de  
 W62.de  
 D11.de  
 D13.de  
 W2-I / W3-I  
 W38.de  
 W68.de  
 D28.de

### Cementitious wallboard for ceilings, whose rooms are exposed to damp and wet conditions

AQUAPANEL Cement Board SkyLite is 100% water- and moisture-resistant as well as resistant to mould and mildew. Due to its low weight of approx. 10.5 kg/m<sup>2</sup> it is the ideal cement board when performing overhead work.

#### Product description

The cement board is a light and durable board for installation in suspended ceilings. It consists of a core made of Portland cement and aggregates and is reinforced with a glass gauze fabric on the front and rear. The ends are cut and the edges are reinforced (EasyEdge™).



#### Properties and added value

- Suitable for interior and exterior application
- 100 % water resistant
- Resistant to mould and mildew
- Ecological and eco-friendly
- Stable and robust
- Apply with scoring and breaking
- Light and easy to install above your head
- Can be shaped when dry, bending radius  $\geq 1$  m with full board length
- Non-combustible
- Diverse design options

#### Fields of application

AQUAPANEL Cement Board SkyLite has been developed for use in suspended ceilings and soffits in exterior applications (wind load  $< 1.5$  kN/m<sup>2</sup>) and for damp and wet rooms in exteriors in interiors.

The ceiling system comes into its own wherever ceilings are subjected to wet and damp conditions.

- Swimming pools
- Communal showers

#### Application areas

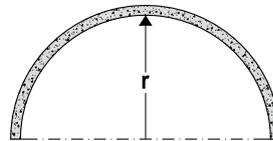
- Suspended ceilings

#### Features

| Board width<br>mm                       | Board thickness<br>mm | Nominal weight<br>kg/m <sup>2</sup> | Edges<br>Long edge or front edge |
|---|-----------------------|-------------------------------------|----------------------------------|
| <b>AQUAPANEL Cement Board SkyLite 8</b> |                       |                                     |                                  |
| 900                                     | 8                     | 10.5                                | EasyEdge™                        |

#### Minimum permissible bending radii

Dry bending:  $r \geq 1000$  mm



#### Special accessories

##### AQUAPANEL Grundierung primer

AQUAPANEL Grundierung primer is a solvent-free synthetic emulsion for priming AQUAPANEL Cement Board SkyLite boards, guaranteeing the maximum adhesion of plasters. The concentrate is pigmented pink.



##### AQUAPANEL SkyLite joint filler & skim coating

AQUAPANEL SkyLite joint filler & skim coating is a cementitious filling material for joint filling and full-surface skim coating (max. surface quality AQ3) to a layer thickness of 4 mm on AQUAPANEL Cement Board SkyLite in ceiling applications, e.g. before the application of decorative plasters or paint coats.



##### AQUAPANEL Fugenband joint tape

AQUAPANEL Fugenband joint tape (10 cm) is a glass fibre tape with an alkali-resistant coating. It is used to reinforce joints and must be embedded in the AQUAPANEL SkyLite joint filler and skim coating.



**AQUAPANEL SkyLite Gewebe mesh**

AQUAPANEL SkyLite Gewebe reinforcing mesh is an alkali-resistant glass fabric and is used to reinforce AQUAPANEL SkyLite joint filler & skim coating.

**AQUAPANEL Maxi Schrauben SN screws**

AQUAPANEL Maxi Schrauben SN screws have been specially developed for fixing AQUAPANEL Cement Board onto timber and metal frameworks of differing thicknesses. The screws have a special corrosion-proof coating that guarantees a very high level of corrosion resistance.



### The grid with corrosion protection

#### The wet room metal grid in detail

The requirements of the building are diverse. This is why Knauf offers a comprehensive range of profiles and accessories in corrosion protection quality C3 (high) or C5M (high). To ensure that there is no confusion on the building site, the wet room profile C3 is coated black and the wet room profile C5M is coated blue. All other accessory parts are coated black and can be used in the corrosivity categories C3 / C5M (high), thus excluding mix-ups. For re-coating of the cut edges on the profiles or small parts, we recommend the grey corrosion protection lacquer C3/C5M. On-site, it will be immediately recognizable if all the required subsequent work has been carried out.



#### Wet room grid for ceilings and walls

Knauf offers everything from a single source for ceiling and wall grids in wet and damp rooms.



### Product portfolio wet area stud frame

| Profiles  | Length in mm           |                        |
|-----------|------------------------|------------------------|
|           | C3                     | C5M                    |
| CW 50/50  | 2600, 3000, 3500, 4000 | 2600, 3000, 3500, 4000 |
| CW 75/50  | 2600, 3000, 3500, 4000 | 2600, 3000, 3500, 4000 |
| CW 100/50 | 2600, 3000, 3500, 4000 | 3000, 3500, 4000       |
| CW 125/50 | Customized length      | –                      |
| CW 150/50 | Customized length      | –                      |
| UW 50/40  | 4000                   | 4000                   |
| UW 75/40  | 4000                   | 4000                   |
| UW 100/40 | 4000                   | 4000                   |
| UW 125/40 | 4000                   | –                      |
| CD 60/27  | 4000                   | 4000                   |
| UD 28/27  | 3000                   | 3000                   |
| UA 50/40  | 2600, 3000, 3500, 4000 | 3000, 3500, 4000       |
| UA 75/40  | 2600, 3000, 3500, 4000 | 3000, 4000             |
| UA 100/40 | 2600, 3000, 3500, 4000 | 3000, 4000             |

| Installation components                              | Length in mm             |
|--|--------------------------|
| Universal bracket for CD 60/27 C3-C5M                | 120                      |
| Nonius hanger top C3/C5M                             | 200, 300, 400, 600, 1000 |
| Nonius hanger bottom for CD 60/27 C3-C5M             | –                        |
| Nonius-Bügel stirrup for UA 50/40 C3-C5M             | –                        |
| Connection Angle for UA 50 C3-C5M                    | –                        |
| Connection Angle for UA 75 C3-C5M                    | –                        |
| Connection Angle for UA 100 C3-C5M                   | –                        |
| Intersection connector for CD 60/27 C3-C5M           | –                        |
| Intersection Connector for UA with CD Channel C3-C5M | –                        |
| CD longitudinal connector C3-C5M                     | –                        |
| Nonius-Klammer top pins C3-C5M                       | –                        |
| Anti-corrosive lacquer C3/C5M                        | 750 ml, colour grey      |

| Fastening technology   | Corrosion protection           |
|--|--------------------------------|
| Ceiling steel dowel corrosion protection A4  |                                |
|  | Corrosion protection class III |

#### Applying the profiles

Cut the profile for wet area metal grid using a plate shears or slowly rotating machine tools to ensure that the corrosion protection coating is not damaged. The cut edges should be coated on-site with corrosion protection lacquer C3/C5M.



## **Water action classes W0-I and W1-I**

### **Metal stud partition systems with gypsum boards**

W111.de Metal stud partition, single metal stud frame, single-layer cladding

W112.de Metal stud partition, single metal stud frame, double-layer cladding

W113.de Metal stud partition, single metal stud frame, triple-layer cladding

W115.de Metal stud partition, double metal stud frame, double-layer cladding

W116.de Installation wall, double metal stud frame, single/double-layer cladding

### W111.de Metal stud partition, single-layer cladding

| Knauf System | Fire resistance class | Cladding per wall side |                                      |                 |         |               | Weight<br>Without insulation layer<br>approx. kg/m <sup>2</sup> | Wall thickness<br>D mm | Knauf profile<br>CW Z100<br>Cavity<br>h mm | Sound insulation                            |   |
|--------------|-----------------------|------------------------|--------------------------------------|-----------------|---------|---------------|---|------------------------|--|---|---|
|              |                       | Knauf Wallboard (I)    | Knauf Plano fire-resistant board (I) | Solid Board (I) | Diamant | Drystar-Board |   |                        |  | Insulation layer<br>Minimum thickness<br>mm | Sound reduction index<br>R <sub>w</sub> dB<br>R <sub>w,R</sub> dB |
|              | -                     | •                      |                                      |                 | 12.5    | 22            | 75  | 50                     | 40   | 44.2  | 42  |
|              |                       |                        |                                      |                 |         |               | 100   | 75                     | 60   | 47.6  | 45  |
|              | -                     |                        |                                      |                 | 12.5    | 26            | 75  | 50                     | 40   | 44  | 42  |
|              |                       |                        |                                      |                 |         |               | 100   | 75                     | 60   | 47.8  | 45  |
|              | F30                   |                        |                                      |                 | 12.5    | 25            | 75  | 50                     | 40   | 45.9  | 43  |
|              |                       |                        |                                      |                 |         |               | 100   | 75                     | 60   | 48.3  | 46  |
|              | F30                   |                        |                                      |                 | 12.5    | 29            | 75  | 50                     | 40   | 48.7  | 46  |
|              |                       |                        |                                      |                 |         |               | 100   | 75                     | 60   | 51.5  | 49  |
|              | F30                   |                        |                                      |                 | 15      | 35            | 80  | 50                     | 40   | 50.7  | 48  |
|              |                       |                        |                                      |                 |         |               | 105   | 75                     | 60   | 53.7  | 51  |
|              | F30                   |                        |                                      |                 | 15      | 35            | 130   | 100                    | 80   | 54.2  | 52  |
|              |                       |                        |                                      |                 |         |               |   |                        |  |   |   |

(I) Gypsum core special impregnation

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

■ With fire resistance: Backing for front edge joints with profiles provided no insulation installed.

■ With ceramic coverings:

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

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

■ Required for fire resistance: none

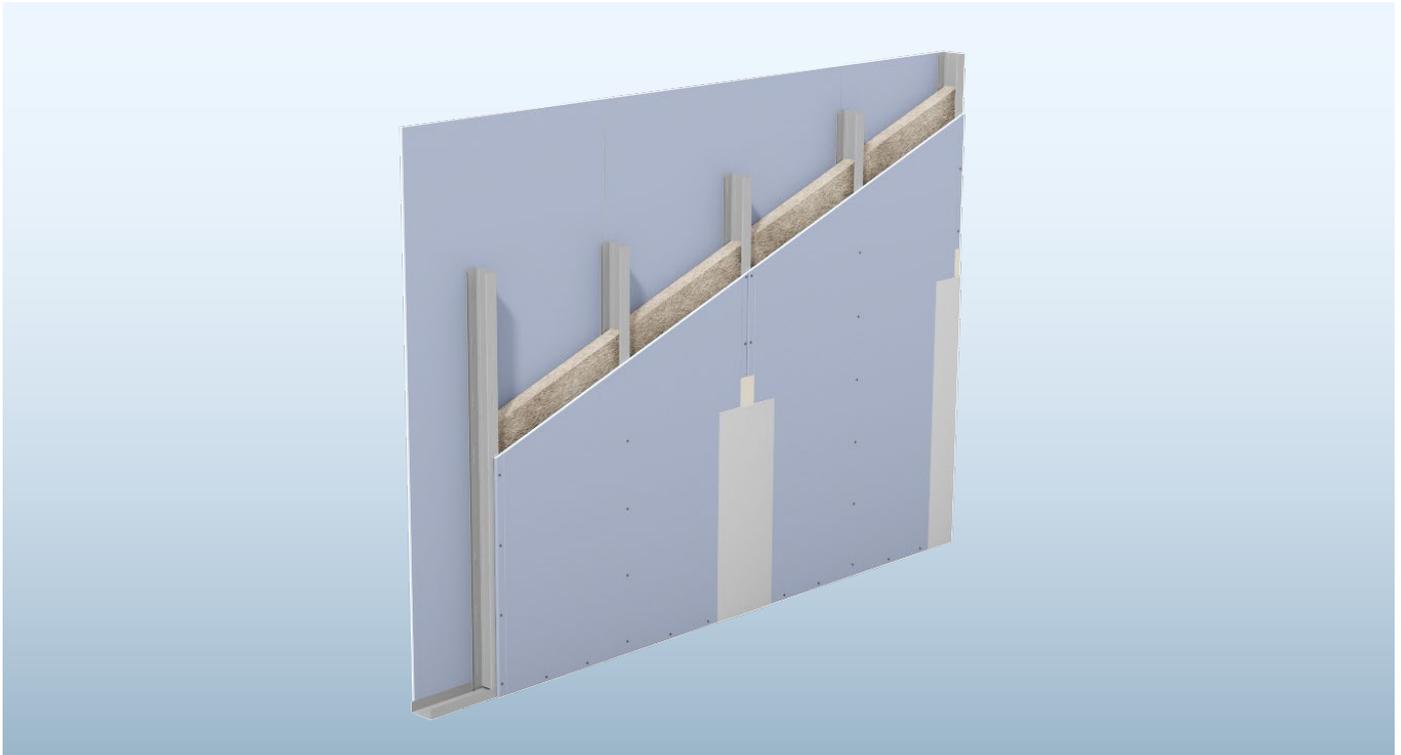
■ Fire resistance permissible: Mineral wool **G** ≥ 40 mm thick

■ Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de. |

### Wall heights

W111.de Metal stud partition, single metal stud frame, single-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br><b>a</b><br>mm | Knauf boards 12.5 mm       |                         | Diamant 12.5 mm / 15 mm    |                         | Drystar-Board 12.5 mm      |
|--------------------|------------------------------------|----------------------------|-------------------------|----------------------------|-------------------------|----------------------------|
|                    |                                    | Without<br>fire resistance | With<br>fire resistance | Without<br>fire resistance | With<br>fire resistance | Without<br>fire resistance |
| Metal gauge 0.6 mm |                                    | m                          | m                       | m                          | m                       | m                          |
| CW 50              | 625                                | 3.20 <sup>1)</sup>         | 3.20 <sup>1)</sup>      | 4.00                       | 4.00                    | 3.20 <sup>1)</sup>         |
|                    | 417                                | 3.85                       | 3.85                    | 4.00                       | 4.00                    | 3.85                       |
|                    | 312.5                              | 4.00                       | 4.00                    | 4.00                       | 4.00                    | 4.00                       |
| CW 75              | 625                                | 4.00                       | 4.00                    | 4.75                       | 4.75                    | 4.00                       |
|                    | 417                                | 4.35                       | 4.35                    | 5.40                       | 5.00                    | 4.35                       |
|                    | 312.5                              | 4.85                       | 4.85                    | 5.80                       | 5.00                    | 4.85                       |
| CW 100             | 625                                | 5.10                       | 5.00                    | 6.55                       | 5.00                    | 5.10                       |
|                    | 417                                | 5.95                       | 5.00                    | 7.20                       | 5.00                    | 5.95                       |
|                    | 312.5                              | 6.60                       | 5.00                    | 7.70                       | 5.00                    | 6.60                       |
| CW 125             | 625                                | 6.65                       | 5.00                    | 8.30                       | 5.00                    | 6.65                       |
|                    | 417                                | 7.60                       | 5.00                    | 8.95                       | 5.00                    | 7.60                       |
|                    | 312.5                              | 8.30                       | 5.00                    | 9.35                       | 5.00                    | 8.30                       |
| CW 150             | 625                                | 8.20                       | 5.00                    | 9.65                       | 5.00                    | 8.20                       |
|                    | 417                                | 9.15                       | 5.00                    | 10.20                      | 5.00                    | 9.15                       |
|                    | 312.5                              | 9.70                       | 5.00                    | 10.65                      | 5.00                    | 9.70                       |

1) only for installation zone 1

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de. |

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

| Knauf System | Fire resistance class | Cladding per wall side |                                      |                 |         |               | Weight<br>Without insulation layer<br>approx. kg/m <sup>2</sup> | Wall thickness<br>D mm | Profil Knauf profile CW Z100<br>Cavity<br>h mm | Sound insulation                            |   |                       |
|--------------|-----------------------|------------------------|--------------------------------------|-----------------|---------|---------------|---|------------------------|--|---|---|-----------------------|
|              |                       | Knauf Wallboard (I)    | Knauf Plano fire-resistant board (I) | Solid Board (I) | Diamant | Drystar-Board |   |                        |  | Insulation layer<br>Minimum thickness<br>mm | Sound reduction index<br>R <sub>w</sub> dB<br>R <sub>w,R</sub> dB |                       |
|              | F30                   | •                      |                                      |                 | 2x 12.5 | 42            | 100   | 50                     | 40   | 54.1  | 52  |                       |
|              |                       |                        |                                      |                 |         |               | 125   | 75                     | 60   | 55.9  | 53  |                       |
|              | F90                   |                        | •                                    |                 | 2x 12.5 | 48            | 100   | 50                     | 40   | 56.4  | 54  |                       |
|              |                       |                        |                                      |                 |         |               | 125   | 75                     | 60   | 57.2  | 55  |                       |
|              |                       |                        |                                      |                 |         |               | 150   | 100                    | 80   | 59.8  | 57  |                       |
|              |                       |                        |                                      |                 |         |               | 100   | 50                     | 40   | 59.0  | 56  |                       |
|              |                       |                        |                                      |                 |         |               | 125   | 75                     | 60   | 59.7  | 57  |                       |
|              |                       |                        |                                      |                 |         |               | 150   | 100                    | 80   | 63.0  | 60  |                       |
|              | F90                   |                        |                                      | •               |         | 25 + 12.5     | 74  | 100                    | 50   | 40  | 59.4 / 60.1 <sup>1)</sup>   | 57 / 58 <sup>1)</sup> |
|              |                       |                        |                                      |                 |         |               |   | 125                    | 75   | 60  | 61.5 / 63.0 <sup>1)</sup>   | 59 / 61 <sup>1)</sup> |
|              |                       |                        |                                      |                 |         |               |   | 150                    | 100  | 80  | 63.2 / 64.5 <sup>1)</sup>   | 61 / 62 <sup>1)</sup> |
|              |                       |                        |                                      |                 |         |               |   | 125                    | 50   | 40  | 64.4  | 62                    |
|              |                       |                        |                                      |                 |         |               |   | 150                    | 75   | 60  | 66.2  | 64                    |
|              |                       |                        |                                      |                 |         |               |   | 175                    | 100  | 80  | 68.0  | 66                    |
| F90          |                       |                        | •                                    |                 | 2x 12.5 | 49            | 100   | 50                     | 40   | 54  | 52  |                       |
|              |                       |                        |                                      |                 |         |               | 125   | 75                     | 60   | 56.8  | 54  |                       |
|              |                       |                        |                                      |                 |         |               | 150   | 100                    | 80   | 58  | 56  |                       |

1) Upper board layer stapled.

(I) Gypsum core special impregnation

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

- With combined cladding always use Diamant as a cover layer
- F60 on request

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

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G plus**
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

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

- When applied with insulation layer **G** in conjunction with
  - Wall height > 5.00 m (F90)
  - Cladding with Knauf Wallboard
 Prior consultation in acc. to page 100 is recommended.

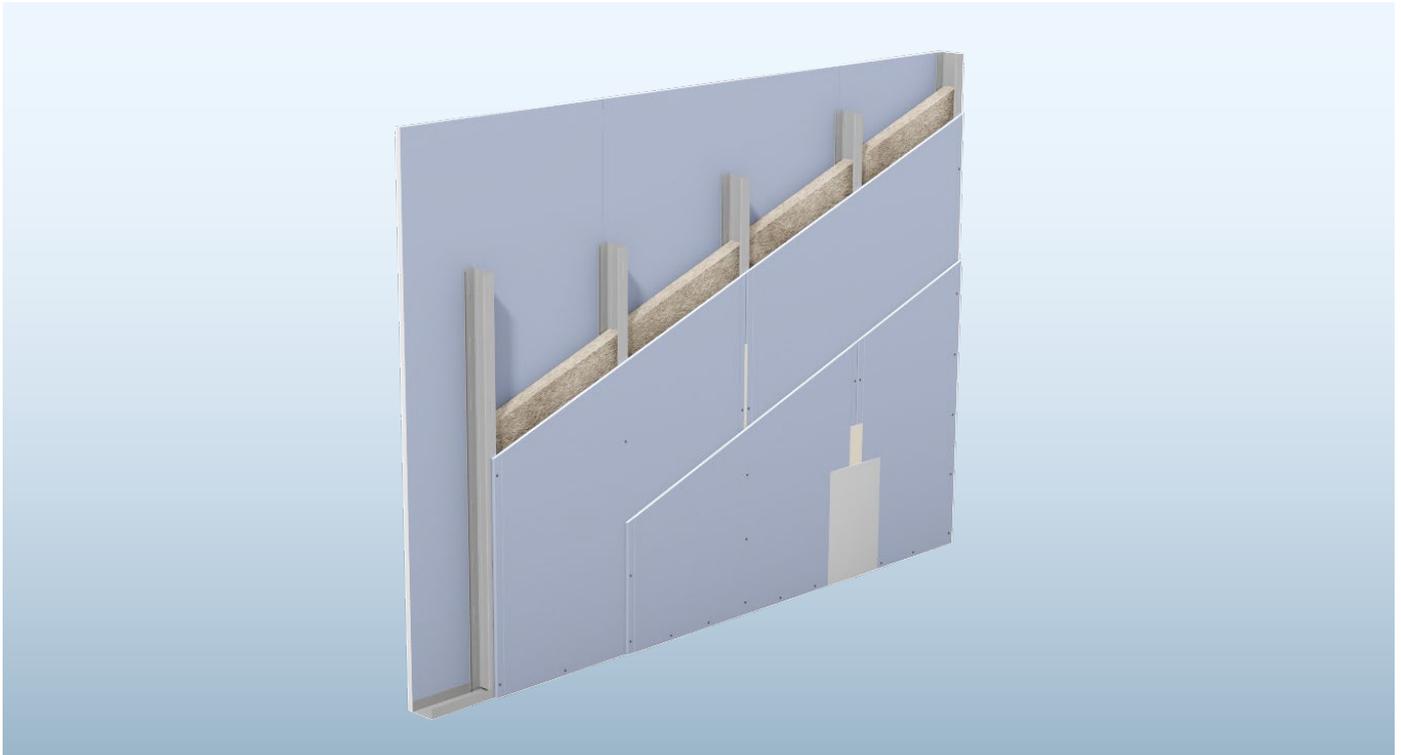
#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

### Wall heights

W112.de Metal stud partition, single metal stud frame, double-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs | Knauf boards 2x 12.5 mm |                      |       | Diamant 2x 12.5 mm / Solid Board 25 mm + Diamant 12.5 mm / (All board layers fastened to frame with screws) |                      | Drystar Board 2x 12.5 mm |                      |
|--------------------|------------------|-------------------------|----------------------|-------|---|----------------------|--------------------------|----------------------|
|                    |                  | Without fire resistance | With fire resistance |       | Without fire resistance   | With fire resistance | Without fire resistance  | With fire resistance |
| Metal gauge 0.6 mm | a mm             | m                       | F30 m                | F90 m | m   | F90 m                | m                        | F90 m                |
| CW 50              | 625              | 4.00                    | 4.00                 | 4.00  | 4.75  | 4.75                 | 4.00                     | 4.00                 |
|                    | 417              | 4.00                    | 4.00                 | 4.00  | 5.40  | 5.40                 | 4.00                     | 4.00                 |
|                    | 312.5            | 4.35                    | 4.35                 | 4.35  | 5.80  | 5.80                 | 4.35                     | 4.35                 |
| CW 75              | 625              | 5.05                    | 5.00                 | 5.05  | 7.20  | 7.00                 | 5.05                     | 5.00                 |
|                    | 417              | 5.95                    | 5.00                 | 5.95  | 7.85  | 7.00                 | 5.95                     | 5.00                 |
|                    | 312.5            | 6.50                    | 5.00                 | 6.50  | 8.20  | 7.00                 | 6.50                     | 5.00                 |
| CW 100             | 625              | 7.15                    | 5.00                 | 7.00  | 9.30  | 7.00                 | 7.15                     | 5.00                 |
|                    | 417              | 8.05                    | 5.00                 | 7.00  | 9.75  | 7.00                 | 8.05                     | 5.00                 |
|                    | 312.5            | 8.55                    | 5.00                 | 7.00  | 10.00   | 7.00                 | 8.55                     | 5.00                 |
| CW 125             | 625              | 9.05                    | 5.00                 | 7.00  | 10.80   | 7.00                 | 9.05                     | 5.00                 |
|                    | 417              | 9.65                    | 5.00                 | 7.00  | 11.20   | 7.00                 | 9.65                     | 5.00                 |
|                    | 312.5            | 10.10                   | 5.00                 | 7.00  | 11.55   | 7.00                 | 10.10                    | 5.00                 |
| CW 150             | 625              | 10.35                   | 5.00                 | 7.00  | 12.00   | 7.00                 | 10.35                    | 5.00                 |
|                    | 417              | 10.95                   | 5.00                 | 7.00  | 12.00   | 7.00                 | 10.95                    | 5.00                 |
|                    | 312.5            | 11.40                   | 5.00                 | 7.00  | 12.00   | 7.00                 | 11.40                    | 5.00                 |

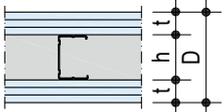
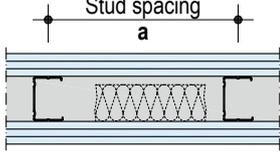
With upper board layer stapled: Wall heights acc. to system W111.de.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

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

| Knauf System  | Fire resistance class | Cladding per wall side |                                      |                 |         |                           | Weight  | Wall thickness | Knauf profile CW Z100 Cavity | Sound insulation          |                       |                     |
|---|-----------------------|------------------------|--------------------------------------|-----------------|---------|---------------------------|---|----------------|------------------------------|---------------------------|-----------------------|---------------------|
|   |                       | Knauf Wallboard (I)    | Knauf Plano fire-resistant board (I) | Solid Board (I) | Diamant | Drystar-Board             |   |                |                              | Insulation layer          | Sound reduction index |                     |
|     |                       |                        |                                      |                 |         | Minimum thickness<br>t mm | Without insulation layer<br>approx. kg/m <sup>2</sup> | D mm           | h mm                         | mm                        | R <sub>w</sub> dB     | R <sub>w,R</sub> dB |
| <b>W113.de Metal stud partition, Single metal stud frame, triple-layer cladding</b> |                       |                        |                                      |                 |         |                           |   |                |                              |                           |                       |                     |
|    | F30                   | ●                      |                                      |                 |         | 3x 12.5                   | 61  | 125            | 50                           | 40                        | 58.7                  | 56                  |
|   |                       |                        |                                      |                 |         |                           |   | 150            | 75                           | 60                        | 58.7                  | 56                  |
|   |                       |                        |                                      |                 |         |                           |   | 175            | 100                          | 80                        | 63.9                  | 61                  |
|   | F90                   | ●                      |                                      |                 |         | 3x 12.5                   | 71  | 125            | 50                           | 40                        | 61.0                  | 59                  |
|   |                       |                        |                                      |                 |         |                           |   | 150            | 75                           | 60                        | 61.1                  | 59                  |
|   |                       |                        |                                      |                 |         |                           |   | 175            | 100                          | 80                        | 64.5                  | 62                  |
|   |                       |                        |                                      |                 | 3x 12.5 | 83                        | 125   | 50             | 40                           | 64.8 / 66.6 <sup>1)</sup> | 62 / 64 <sup>1)</sup> |                     |
|   |                       |                        |                                      |                 | 3x 12.5 | 83                        | 150   | 75             | 60                           | 66.3 / 67.1 <sup>1)</sup> | 64 / 65 <sup>1)</sup> |                     |
|   |                       |                        |                                      |                 | 3x 12.5 | 83                        | 175   | 100            | 80                           | 67.7 / 68.0 <sup>1)</sup> | 65 / 66 <sup>1)</sup> |                     |

1) Upper board layer stapled.

(I) Gypsum core special impregnation

With combined cladding always use Diamant as a cover layer

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

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G plus**
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

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

- When applied with insulation layer **G**  
Prior consultation in acc. to page 100 is recommended.

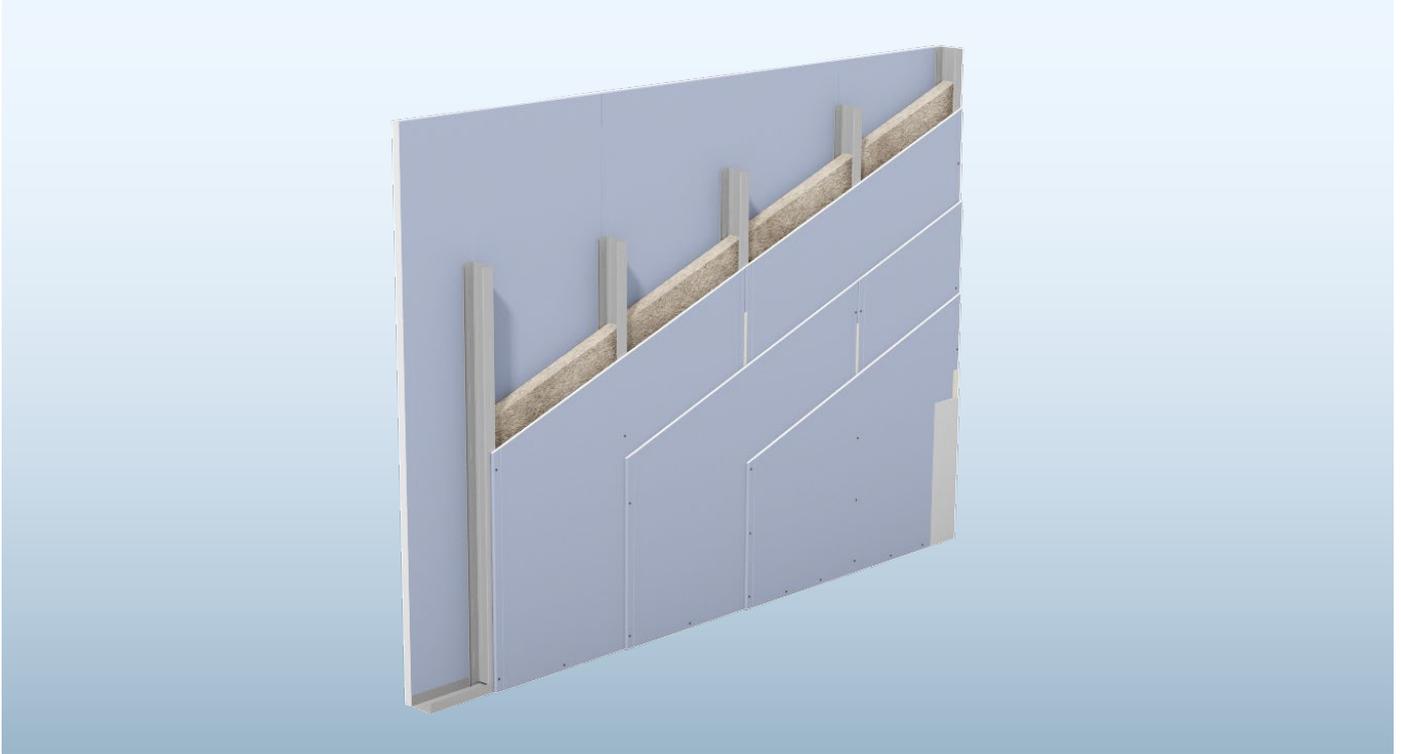
#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

### Wall heights

W113.de Metal stud partition, single metal stud frame, triple-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br><b>a</b><br>mm | Knauf boards 3x 12.5 mm         |                         |          | Diamant 3x 12.5 mm<br>(All board layers fastened to frame with screws) |                                     |
|--------------------|------------------------------------|---------------------------------|-------------------------|----------|--|-------------------------------------|
|                    |                                    | Without<br>fire resistance<br>m | With<br>fire resistance |          | Without<br>fire resistance<br>m  | With<br>fire resistance<br>F90<br>m |
| Metal gauge 0.6 mm |                                    |                                 | F30<br>m                | F90<br>m |  |                                     |
| CW 50              | 625                                | 5.20                            | 5.00                    | 5.20     | 7.65   | 7.65                                |
|                    | 417                                | 6.05                            | 5.00                    | 6.05     | 8.15   | 8.15                                |
|                    | 312.5                              | 6.50                            | 5.00                    | 6.50     | 8.45   | 8.45                                |
| CW 75              | 625                                | 7.65                            | 5.00                    | 7.65     | 9.85   | 9.00                                |
|                    | 417                                | 8.35                            | 5.00                    | 8.35     | 10.20  | 9.00                                |
|                    | 312.5                              | 8.75                            | 5.00                    | 8.75     | 10.40  | 9.00                                |
| CW 100             | 625                                | 9.60                            | 5.00                    | 9.00     | 11.50  | 9.00                                |
|                    | 417                                | 10.05                           | 5.00                    | 9.00     | 11.85  | 9.00                                |
|                    | 312.5                              | 10.40                           | 5.00                    | 9.00     | 12.00  | 9.00                                |
| CW 125             | 625                                | 11.00                           | 5.00                    | 9.00     | 12.00  | 9.00                                |
|                    | 417                                | 11.50                           | 5.00                    | 9.00     | 12.00  | 9.00                                |
|                    | 312.5                              | 11.85                           | 5.00                    | 9.00     | 12.00  | 9.00                                |
| CW 150             | 625                                | 12.00                           | 5.00                    | 9.00     | 12.00  | 9.00                                |
|                    | 417                                | 12.00                           | 5.00                    | 9.00     | 12.00  | 9.00                                |
|                    | 312.5                              | 12.00                           | 5.00                    | 9.00     | 12.00  | 9.00                                |

With upper board layer stapled: Wall heights acc. to system W112.de.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

### W115.de Double metal stud frame, double-layer cladding

| Knauf System                                   | Fire resistance class | Cladding per wall side |                                      |                 |                           |               | Weight<br>Without insulation layer<br>approx. kg/m <sup>2</sup> | Wall thickness<br>D mm | Knauf profile CW Z100<br>Cavity<br>h mm | Sound insulation                            |   |
|--|-----------------------|------------------------|--------------------------------------|-----------------|---------------------------|---------------|---|------------------------|---|---|---|
|  |                       | Knauf Wallboard (I)    | Knauf Plano fire-resistant board (I) | Solid Board (I) | Diamant                   | Drystar-Board |   |                        |   | Insulation layer<br>Minimum thickness<br>mm | Sound reduction index<br>R <sub>w</sub> dB<br>R <sub>w,R</sub> dB |
|  |                       |                        |                                      |                 | Minimum thickness<br>t mm |               |   |                        |   |   |   |
|  |                       |                        |                                      |                 |                           |               |   |                        |   |   |   |
| <b>W115.de Metal stud partition</b>            |                       |                        |                                      |                 |                           |               |   |                        |   |   |   |
| Double metal stud frame, double-layer cladding |                       |                        |                                      |                 |                           |               |   |                        |   |   |   |
|  | F90                   | •                      |                                      |                 | 2x 12.5                   | 50            | 155   | 2x 50<br>105           | 2x 40                                   | 67.3  | 64  |
|  |                       |                        |                                      |                 |                           |               | 205   | 2x 75<br>155           | 2x 60                                   | 69.7  | 67  |
|  |                       |                        |                                      |                 |                           |               | 255   | 2x 100<br>205          | 2x 80                                   | 71.9  | 69  |
|  |                       | •                      |                                      | •               | 12.5<br>+<br>12.5         | 54            | 155   | 2x 50<br>105           | 2x 40                                   | 68.0  | 65  |
|  |                       |                        |                                      |                 |                           |               | 205   | 2x 75<br>155           | 2x 60                                   | 70.6  | 68  |
|  |                       |                        |                                      |                 |                           |               | 255   | 2x 100<br>205          | 2x 80                                   | 73.2  | 70  |
|  |                       | •                      |                                      | •               | 2x 12.5                   | 58            | 155   | 2x 50<br>105           | 2x 40                                   | 69.7  | 66  |
|  |                       |                        |                                      |                 |                           |               | 205   | 2x 75<br>155           | 2x 60                                   | 72.2  | 69  |
|  |                       |                        |                                      |                 |                           |               | 255   | 2x 100<br>205          | 2x 80                                   | 74.4  | 71  |
|  |                       | •                      |                                      |                 | 2x 12.5 plus              | 51            | 155   | 2x 50<br>105           | 2x 40                                   | –   | –   |
|  |                       |                        |                                      |                 |                           |               | 205   | 2x 75<br>155           | 2x 60                                   | –   | –   |
|  |                       |                        |                                      |                 |                           |               | 255   | 2x 100<br>205          | 2x 80                                   | –   | –   |

(I) Gypsum core special impregnation

With combined cladding always use Diamant as a cover layer

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

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G plus**
- Required for sound insulation reasons: Mineral wool **G**  
Length related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

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

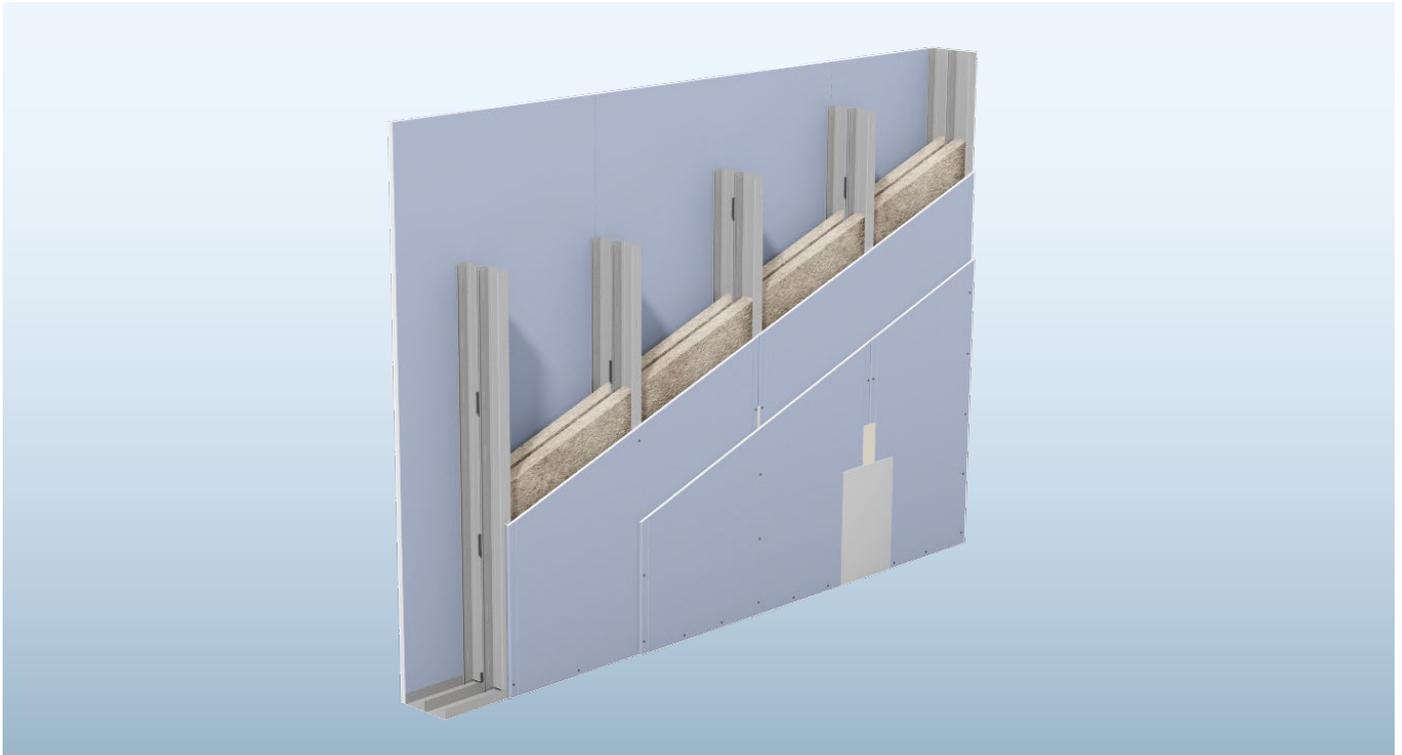
- When applied with insulation layer **G** in conjunction with a wall height > 5.00 m
- When cladding with Drystar-Board  
Prior consultation in acc. to page 100 is recommended.

**Notes**

Observe notes from page 100.  
For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

### Wall heights

W115.de Installation wall, double metal stud frame, double-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profiles              | Spacing of studs<br>a<br>mm | Knauf boards 2x 12.5 mm |                      |                         |                      | Diamant 2x 12.5 mm      |                      |                         |                      | Drystar-Board 2x 12.5 mm |                      |                         |                      |
|-----------------------------|-----------------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|--------------------------|----------------------|-------------------------|----------------------|
|                             |                             | Installation zone 1     |                      | Installation zone 2     |                      | Installation zone 1     |                      | Installation zone 2     |                      | Installation zone 1      |                      | Installation zone 2     |                      |
|                             |                             | Without fire resistance | With fire resistance | Without fire resistance  | With fire resistance | Without fire resistance | With fire resistance |
| Metal gauge 0.6 mm          |                             | m                       | F90 m                | m                        | F90 m                | m                       | F90 m                |
| <b>Knauf recommendation</b> |                             |                         |                      |                         |                      |                         |                      |                         |                      |                          |                      |                         |                      |
| CW 50                       | 625                         | 3.30                    | 3.30                 | 2.80                    | 2.80                 | 3.60                    | 3.60                 | 3.30                    | 3.30                 | 3.30                     | 3.30                 | 2.80                    | 2.80                 |
| CW 75                       | 625                         | 4.50                    | 4.50                 | 4.00                    | 4.00                 | 5.00                    | 5.00                 | 4.50                    | 4.50                 | 4.50                     | 4.50                 | 4.00                    | 4.00                 |
| CW 100                      | 625                         | 5.50                    | 5.50                 | 5.00                    | 5.00                 | 6.00                    | 6.00                 | 5.50                    | 5.50                 | 5.00                     | 5.00                 | 5.00                    | 5.00                 |
| <b>Acc. to DIN 18183-1</b>  |                             |                         |                      |                         |                      |                         |                      |                         |                      |                          |                      |                         |                      |
| CW 50                       | 625                         | 4.50                    | 4.50                 | 4.00                    | 4.00                 | X                       |                      | X                       |                      | X                        |                      |                         |                      |
| CW 75                       | 625                         | 6.00                    | 6.00                 | 5.50                    | 5.50                 |                         |                      |                         |                      |                          |                      |                         |                      |
| CW 100                      | 625                         | 6.50                    | 6.50                 | 6.00                    | 6.00                 |                         |                      |                         |                      |                          |                      |                         |                      |

**Notes** Observe notes from page 100.  
For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

### W116.de Installation wall, single/double layer cladding

| Knauf System  | Fire resistance class | Cladding per wall side |                                      |                 |         |               | Weight  | Wall thickness | Profil Knauf profile CW Z100 Cavity | Sound insulation |                       |                     |
|---|-----------------------|------------------------|--------------------------------------|-----------------|---------|---------------|---|----------------|-------------------------------------|------------------|-----------------------|---------------------|
|   |                       | Knauf Wallboard (l)    | Knauf Plano fire-resistant board (l) | Solid Board (l) | Diamant | Drystar-Board |   |                |                                     | Insulation layer | Sound reduction index |                     |
|   |                       |                        |                                      |                 |         | t mm          | Without insulation layer<br>approx. kg/m <sup>2</sup> | D mm           | h mm                                | mm               | R <sub>w</sub> dB     | R <sub>w,R</sub> dB |
| <b>W116.de Installation wall, Double metal stud frame, single/double-layer cladding</b> |                       |                        |                                      |                 |         |               |   |                |                                     |                  |                       |                     |
|   | -                     |                        |                                      |                 |         | 18            | 48  | ≥ 141          | 2x 50<br>≥ 105                      | 40               | 52.5                  | 50                  |
|   |                       |                        |                                      |                 |         |               |   |                |                                     | 2x 40            | 56.0                  | 54                  |
|   | F30                   | •                      |                                      |                 |         | 2x 12.5       | 46  | ≥ 155          | 2x 50<br>≥ 105                      | 40               | 54.0                  | 52                  |
|   |                       |                        | •                                    |                 |         | 2x 12.5       | 53  |                |                                     | 40               | 54                    | 52                  |
|   |                       |                        |                                      | •               |         | 2x 12.5       | 61  |                |                                     | 40               | 62.5                  | 60                  |
|   | F90                   |                        |                                      | •               |         | 2x 12.5       | 61  | ≥ 155          | 2x 50<br>≥ 105                      | 2x 40            | 63.5                  | 61                  |
|   |                       |                        |                                      |                 | •       | 2x 12.5 plus  | 53  |                |                                     | 40               | 54                    | 52                  |

(l) Gypsum core special impregnation

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

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

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G plus**
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

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

- When applied with insulation layer **G** in conjunction with
  - Wall height > 5.00 m (F90)
  - Cladding with Knauf Wallboard
- When cladding with Drystar-Board  
Prior consultation in acc. to page 100 is recommended.

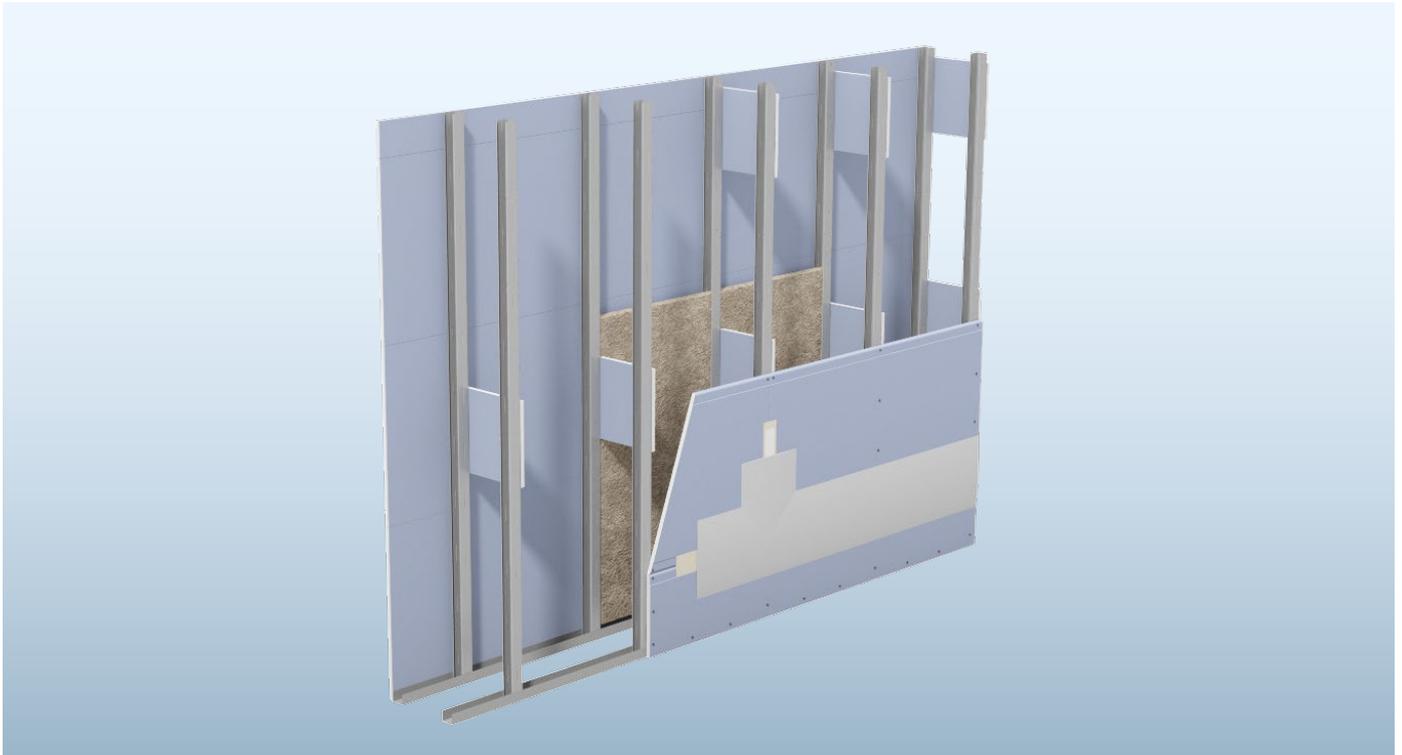
#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

### Wall heights

W116.de Metal stud partition, double metal stud frame, single/double-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profiles     | Spacing of studs<br><br>a<br>mm | Knauf recommendation<br>Diamant 18 mm          |  | Acc. to DIN 18183-1<br>Knauf boards 2x 12.5 mm |                      |                         |                      |                         |                      | Drystar-Board 2x 12.5 mm |                      |      |          |
|--------------------|---------------------------------|--|--|--|----------------------|-------------------------|----------------------|-------------------------|----------------------|--------------------------|----------------------|------|----------|
|                    |                                 | Installation zone 1<br>Without fire resistance | Installation zone 2<br>Without fire resistance | Installation zone 1                            |                      | Installation zone 2     |                      | Installation zone 1     |                      | Installation zone 2      |                      |      |          |
|                    |                                 |  |  | Without fire resistance                        | With fire resistance | Without fire resistance | With fire resistance | Without fire resistance | With fire resistance | Without fire resistance  | With fire resistance |      |          |
| Metal gauge 0.6 mm |                                 | m  | m  | m  | F30<br>m             | F90<br>m                | m                    | F30<br>m                | F90<br>m             | m                        | F90<br>m             | m    | F90<br>m |
| CW 50              | 625                             | 4.00   | 3.50   | 4.50   | 4.50                 | 4.50                    | 4.00                 | 4.00                    | 4.00                 | 4.50                     | 4.50                 | 4.00 | 4.00     |
| CW 75              | 625                             | 4.00   | 3.50   | 6.00   | 5.00                 | 6.00                    | 5.50                 | 5.00                    | 5.50                 | 6.00                     | 5.00                 | 5.50 | 5.00     |
| CW 100             | 625                             | 4.00   | 3.50   | 6.50   | 5.00                 | 6.50                    | 6.00                 | 5.00                    | 6.00                 | 6.50                     | 5.00                 | 6.00 | 5.00     |

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Metal Stud Partitions W11.de.

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



## Water action classes W0-I and W1-I

### Furring systems with gypsum boards

W623.de Furring directly anchored, metal grid CD 60/27 single-/double-layer cladding

W625.de Furring, detached, metal studs CW, single-layer cladding

W626.de Furring, detached, metal studs CW, double-layer cladding

W653.de Furring detached, metal studs CW, single-layer cladding, Solid Board

### W623.de Directly anchored, metal grid CD 60/27, single-/double-layer cladding

| Knauf System   | Cladding            |                 |         |                              | Weight   | Minimum thickness | Knauf CD Z100 | Cavity  | Sound insulation |                            |                                   |
|--|---------------------|-----------------|---------|------------------------------|--|-------------------|---------------|---------|------------------|----------------------------|-----------------------------------|
|  | Knauf Wallboard (I) | Solid Board (I) | Diamant | Drystar-Board                |  |                   |               |         | Insulation layer | Improvement index          | Resonance frequency <sup>1)</sup> |
|  |                     |                 |         | Minimum thickness<br>t<br>mm | Without insulation layer<br>approx.<br>kg/m <sup>2</sup> | D<br>mm           |               | h<br>mm | G<br>mm          | $\Delta R_{w,heavy}$<br>dB | $f_0$<br>Hz                       |
| <b>W623.de Furring directly anchored</b> Metal grid CD 60/27, directly anchored with damping universal brackets, single-/double-layer cladding |                     |                 |         |                              |  |                   |               |         |                  |                            |                                   |
|  | •                   |                 |         | 12.5                         | 11   | ≥ 52.5            | 60/27         | ≥ 40    | ≥ 30             | 8                          | 79                                |
|  |                     |                 | •       | 12.5                         | 15   | ≥ 52.5            | 60/27         | ≥ 40    | ≥ 30             | 12                         | 65                                |
|  |                     |                 |         | •                            | 12.5   | 13                | ≥ 52.5        | 60/27   | ≥ 40             | ≥ 30                       | 9                                 |
|  | •                   |                 |         | 2x 12.5                      | 21   | ≥ 65.0            | 60/27         | ≥ 40    | ≥ 30             | 11                         | 57                                |
|  |                     |                 | •       | 2x 12.5                      | 28   | ≥ 65.0            | 60/27         | ≥ 40    | ≥ 30             | 15                         | 47                                |
|  |                     |                 |         | •                            | 2x 12.5  | 24                | ≥ 65.0        | 60/27   | ≥ 40             | ≥ 30                       | –                                 |

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

(I) Gypsum core special impregnation

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m<sup>2</sup>.

■ Measured improvement valis for a basic wall with a mass per unit area of  $m' = 350 \text{ kg/m}^2 \pm 50 \text{ kg/m}^2$ .

■ Sound insulation values on existing walls with Damping Universal Brackets.

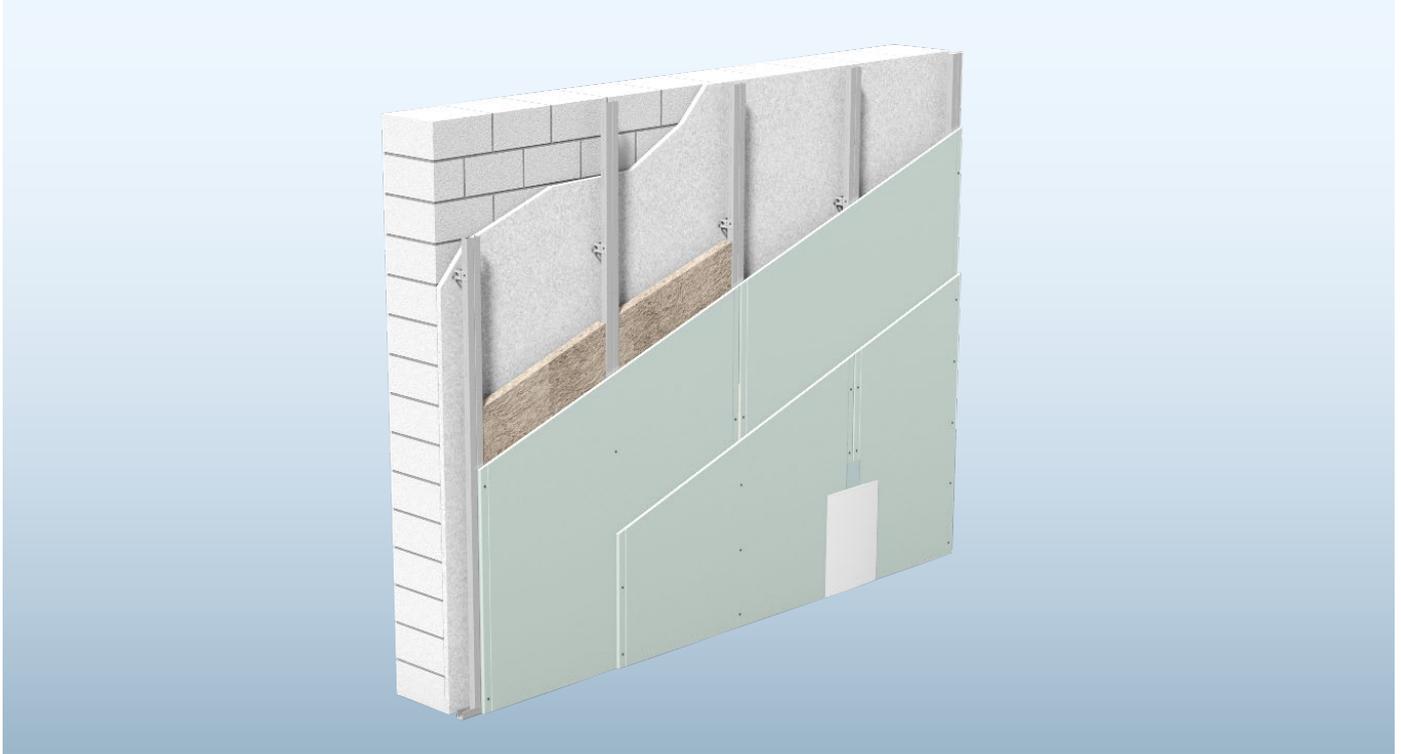
**Requirements for the insulation layer:** (Insulation materials, e.g. from Knauf Insulation)

■ Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design, see system data sheet Knauf Furring W61.de. |

Wall heights

W623.de Furring directly anchored – Metal grid CD 60/27, single-/double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br>a<br>mm | Knauf Wallboard /<br>Diamant 12.5 mm | Drystar-Board<br>12.5 mm | Knauf Wallboard /<br>Diamant 2x 12.5 mm | Drystar-Board<br>2x 12.5 mm |
|--------------------|-----------------------------|--------------------------------------|--------------------------|---|-----------------------------|
| Metal gauge 0.6 mm |                             | m                                    | m                        | m                                       | m                           |
| CD 60/27           | 625                         | 10.00                                | 10.00                    | 10.00                                   | 10.00                       |

- Use universal brackets/damping universal brackets 120 mm
- Max. partition cavity 127 mm

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design, see system data sheet Knauf Furring W61.de. |

### W625.de Detached, metal studs CW, single-layer cladding

### W626.de Detached, metal studs CW, double-layer cladding

| Knauf System                     | Cladding            |                 |         |                              | Weight   | Minimum thickness | Knauf profile CW Z100 | Cavity                                | Sound insulation     |   |  |    |    |
|----------------------------------|---------------------|-----------------|---------|------------------------------|--|-------------------|-----------------------|---------------------------------------|----------------------|---|--|----|----|
|                                  | Knauf Wallboard (I) | Solid Board (I) | Diamant | Drystar-Board                |  |                   |                       |                                       | Insulation layer (G) | Improvement index $\Delta R_{w,heavy}$ dB | Resonance frequency <sup>1)</sup> $f_0$ Hz |    |    |
|                                  |                     |                 |         | Minimum thickness<br>t<br>mm | Without insulation layer<br>approx.<br>kg/m <sup>2</sup> | D<br>mm           | h<br>mm               |                                       |                      |   |  |    |    |
| <b>W625.de Furring, detached</b> |                     |                 |         |                              |  |                   |                       | Metal studs CW, single-layer cladding |                      |   |  |    |    |
|                                  | •                   |                 |         | 12.5                         | 12   |                   | ≥ 72.5                | 50                                    | ≥ 60                 | 40  | 10   | 64 |    |
|                                  |                     |                 |         |                              |  |                   | ≥ 97.5                | 75                                    | ≥ 85                 | 60  | 11   | 54 |    |
|                                  |                     |                 |         |                              |  |                   | ≥ 122.5               | 100                                   | ≥ 110                | 80  | 12   | 47 |    |
|                                  |                     |                 | •       | 12.5                         | 16   |                   |                       | ≥ 72.5                                | 50                   | ≥ 60                                      | 40   | 11 | 53 |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 97.5                                | 75                   | ≥ 85                                      | 60   | 13 | 45 |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 122.5                               | 100                  | ≥ 110                                     | 80   | 14 | 39 |
|                                  |                     |                 |         | 12.5                         | 14   |                   |                       | ≥ 72.5                                | 50                   | ≥ 60                                      | 40   | 11 | 57 |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 97.5                                | 75                   | ≥ 85                                      | 60   | 12 | 48 |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 122.5                               | 100                  | ≥ 110                                     | 80   | 14 | 42 |
| <b>W626.de Furring, detached</b> |                     |                 |         |                              |  |                   |                       | Metal studs CW, double-layer cladding |                      |   |  |    |    |
|                                  | •                   |                 |         | 2x 12.5                      | 22   |                   | ≥ 85                  | 50                                    | ≥ 60                 | 40  | 13   | 46 |    |
|                                  |                     |                 |         |                              |  |                   | ≥ 110                 | 75                                    | ≥ 85                 | 60  | 14   | 39 |    |
|                                  |                     |                 |         |                              |  |                   | ≥ 135                 | 100                                   | ≥ 110                | 80  | 15   | 34 |    |
|                                  |                     |                 | •       | 2x 12.5                      | 29   |                   |                       | ≥ 85                                  | 50                   | ≥ 60                                      | 40   | 14 | 38 |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 110                                 | 75                   | ≥ 85                                      | 60   | 16 | 32 |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 135                                 | 100                  | ≥ 110                                     | 80   | 17 | 28 |
|                                  |                     |                 |         | 2x 12.5                      | 25   |                   |                       | ≥ 85                                  | 50                   | ≥ 60                                      | 40   | –  | –  |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 110                                 | 75                   | ≥ 85                                      | 60   | –  | –  |
|                                  |                     |                 |         |                              |  |                   |                       | ≥ 135                                 | 100                  | ≥ 110                                     | 80   | –  | –  |

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

(I) Gypsum core special impregnation

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m<sup>2</sup>.

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

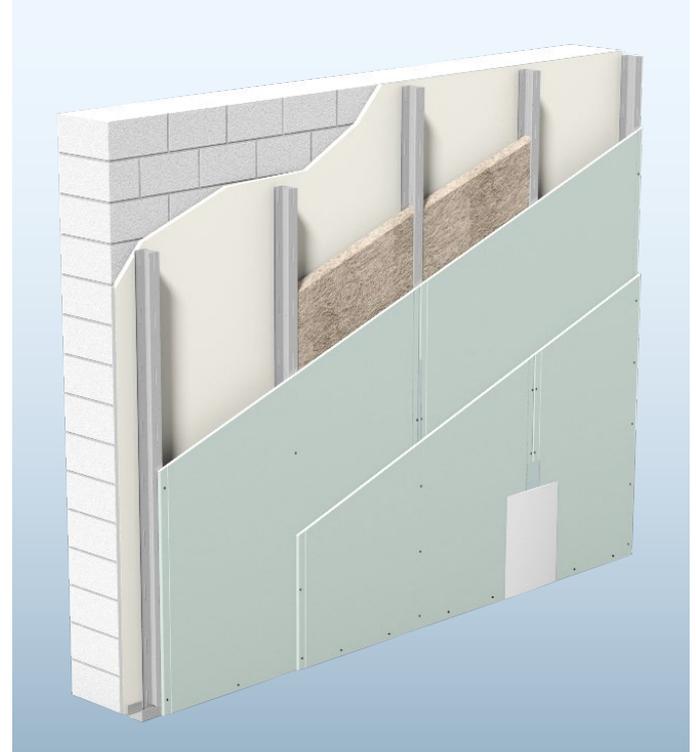
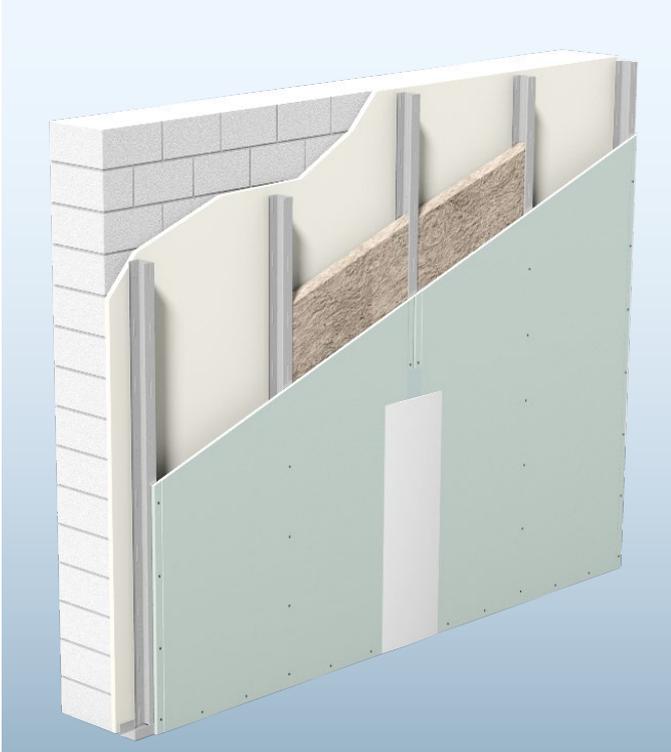
- Required for sound insulation reasons: Mineral wool (G) length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design, see system data sheet Knauf Furring W61.de. |

### Wall heights

W625.de Furring, detached, metal studs CW, single-layer cladding

W626.de Furring, detached, metal studs CW, double-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br>a | W625.de                   |                           |                           | W626.de                    |                           |                           |
|--------------------|-----------------------|---------------------------|---------------------------|---------------------------|----------------------------|---------------------------|---------------------------|
|                    |                       | Knauf Wallboard 12.5 mm   | Diamant 12.5 mm           | Drystar-Board 12.5 mm     | Knauf Wallboard 2x 12.5 mm | Diamant 2x 12.5 mm        | Drystar-Board 2x 12.5 mm  |
| Metal gauge 0.6 mm | mm                    | m                         | m                         | m                         | m                          | m                         | m                         |
| CW 50              | 625                   | 2.70 <sup>1)</sup> / –    | 3.00 <sup>1)</sup> / 2.15 | 2.70 <sup>1)</sup> / –    | 2.95 <sup>1)</sup> / –     | 3.35 <sup>1)</sup> / 2.65 | 2.95 <sup>1)</sup> / –    |
|                    | 417                   | 3.25 <sup>1)</sup> / 2.50 | 3.05                      | 3.25 <sup>1)</sup> / 2.50 | 3.60 <sup>1)</sup> / 3.20  | 4.00                      | 3.60 <sup>1)</sup> / 3.20 |
|                    | 312.5                 | 3.65 <sup>1)</sup> / 3.35 | 3.90                      | 3.65 <sup>1)</sup> / 3.35 | 4.00                       | 4.00                      | 4.00                      |
| CW 75              | 625                   | 4.00                      | 4.00                      | 4.00                      | 4.00                       | 4.00                      | 4.00                      |
|                    | 417                   | 4.00                      | 4.00                      | 4.00                      | 4.00                       | 4.40                      | 4.00                      |
|                    | 312.5                 | 4.15                      | 4.45                      | 4.15                      | 4.55                       | 4.95                      | 4.55                      |
| CW 100             | 625                   | 4.15                      | 4.50                      | 4.15                      | 4.50                       | 4.95                      | 4.50                      |
|                    | 417                   | 4.95                      | 5.30                      | 4.95                      | 5.40                       | 5.90                      | 5.40                      |
|                    | 312.5                 | 5.55                      | 5.90                      | 5.55                      | 6.15                       | 6.65                      | 6.15                      |

1) only for installation zone 1

### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Furring W61.de.

### W653.de Detached, metal studs CW, single-layer cladding, Solid Board

| Knauf System                    | Cladding            |  |         |                   | Weight               | Minimum thickness                         | Knauf profile CW Z100                      | Cavity   | Sound insulation     |   |  |  |  |  |
|---------------------------------|---------------------|--|---------|-------------------|----------------------|---|--|--|----------------------|---|--|--|--|--|
|                                 | Knauf Wallboard (I) | Solid Board (I)                                    | Diamant | Drystar-Board     |                      |   |  |  | Insulation layer (G) | Improvement index $\Delta R_{w,heavy}$ dB | Resonance frequency <sup>1)</sup> $f_0$ Hz |  |  |  |
|                                 | Minimum thickness   | Without insulation layer approx. kg/m <sup>2</sup> | D       | h                 | Insulation layer (G) | Improvement index $\Delta R_{w,heavy}$ dB | Resonance frequency <sup>1)</sup> $f_0$ Hz |  |                      |   |  |  |  |  |
| Knauf Wallboard (I)             |                     | t  | mm      | kg/m <sup>2</sup> | D                    | mm  | h  | mm   | mm                   | dB  | Hz   |  |  |  |
| <b>W653.de Furring detached</b> |                     |  |         |                   |                      |   |  | Metal studs CW, single-layer cladding, Solid Board |                      |   |  |  |  |  |
|                                 | •                   | 20   | 20      | $\geq 105$        | 75                   | $\geq 85$                                 | 60   | 14   | 38                   |   |  |  |  |  |
|                                 |                     |  |         | $\geq 130$        | 100                  | $\geq 110$                                | 80   | 15   | 34                   |   |  |  |  |  |
|                                 | •                   | 25   | 25      | $\geq 110$        | 75                   | $\geq 85$                                 | 60   | 15   | 35                   |   |  |  |  |  |
|                                 |                     |  |         | $\geq 135$        | 100                  | $\geq 110$                                | 80   | 16   | 31                   |   |  |  |  |  |

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

(I) Gypsum core special impregnation

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m<sup>2</sup>.

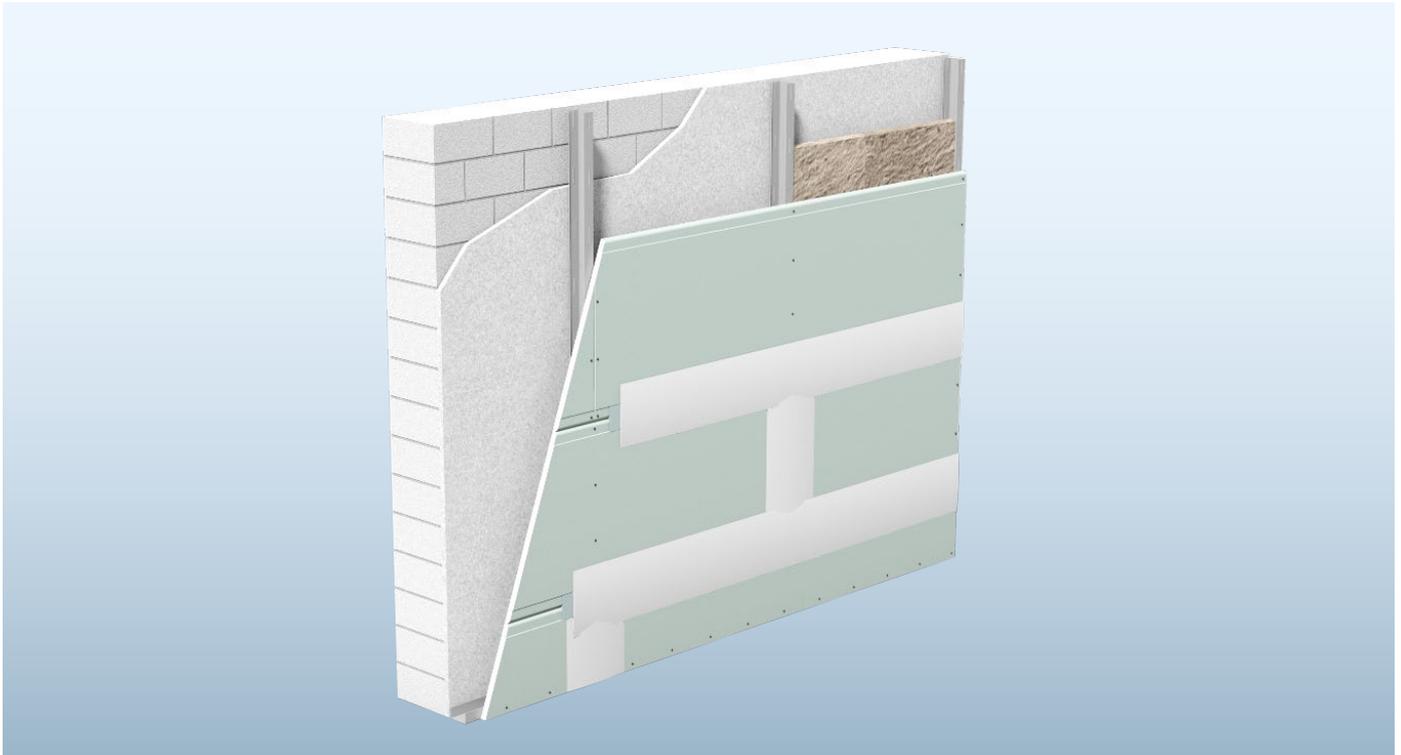
**Requirements for the insulation layer:** (Insulation materials, e.g. from Knauf Insulation)

- Required for sound insulation reasons: Mineral wool (G) length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design, see system data sheet Knauf Furring W61.de. |

Wall heights

W653.de Furring detached, metal studs CW, single-layer cladding, Solid Board



Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br>a<br>mm | Solid Board<br>20 mm<br>m | Solid Board<br>25 mm<br>m |
|--------------------|-----------------------------|---------------------------|---------------------------|
| Metal gauge 0.6 mm |                             |                           |                           |
| CW 75              | 1000                        | 3.05 <sup>1)</sup> / 2.20 | 2.30                      |
|                    | 625                         | 4.00                      | 4.00                      |
|                    | 417                         | 4.00                      | 4.00                      |
|                    | 312.5                       | 4.15                      | 4.30                      |
| CW 100             | 1000                        | 4.00                      | 4.00                      |
|                    | 625                         | 4.10                      | 4.15                      |
|                    | 417                         | 5.00                      | 5.15                      |
|                    | 312.5                       | 5.70                      | 5.90                      |

1) only for installation zone 1

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design, see system data sheet Knauf Furring W61.de. |

- W0-I / W1-I
- W11.de
- W61.de
- W62.de
- D11.de
- D13.de
- W2-I / W3-I
- W38.de
- W68.de
- D28.de

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



## Water action classes W0-I and W1-I

### Installation Shaft Wall system with gypsum boards

W628A.de Installation Shaft Wall, free spanning, double-layer cladding

W630.de Installation Shaft Wall, metal crossbars with CW studs, double-layer cladding

W628B.de Installation Shaft Wall, single metal stud frame with CW single studs, double-layer cladding

W629.de Installation Shaft Wall, single metal stud frame with CW double studs, double-layer cladding

W635.de Installation Shaft Wall, single metal stud frame with UW double studs, double-layer cladding

### W628A.de Free-spanning, double-layer cladding

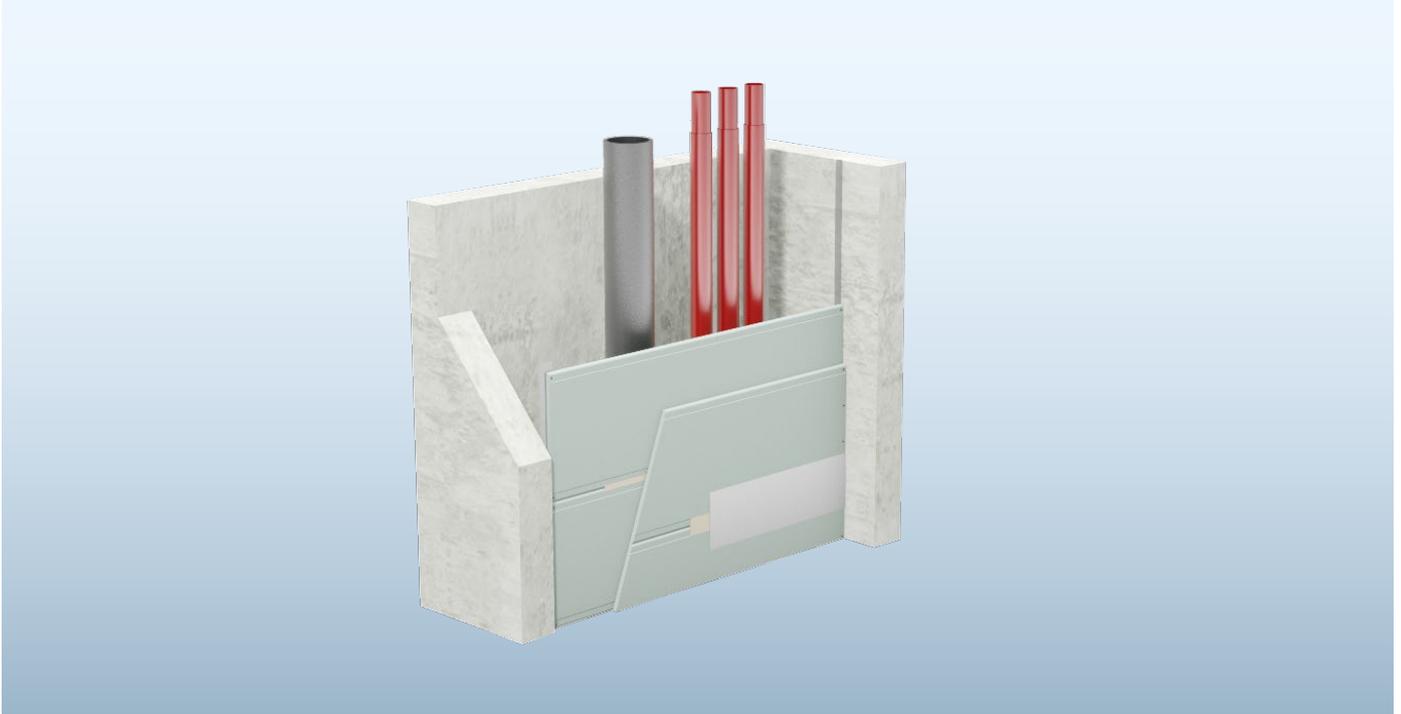
| Knauf System                            | Fire resistance class | Cladding                             |                                |                 |         | Weight                    | Wall thickness  | Knauf angle profile 50/35 Z100 | Insulation layer<br>Fire resistance permissible |                   | Sound insulation |                       |
|---|-----------------------|--------------------------------------|--------------------------------|-----------------|---------|---------------------------|---|--------------------------------|---|-------------------|------------------|-----------------------|
|   |                       | Knauf Plano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant |                           |   |                                | Minimum thickness                               | Minimum thickness | Min. density     | Sound reduction index |
|   |                       |                                      |                                |                 | t mm    | approx. kg/m <sup>2</sup> | D mm  | h mm                           | mm  | kg/m <sup>3</sup> |                  |                       |
|   |                       |                                      |                                |                 |         |                           |   |                                |   |                   |                  |                       |
| <b>W628A.de Installation shaft wall</b> |                       |                                      |                                |                 |         |                           | Without grid, free spanning across shaft width, double layer cladding |                                |   |                   |                  |                       |
|   | F90                   |                                      | •                              |                 | 2x 25   | 46                        | 50  | –                              | Without   |                   | 36               | 33                    |

(I) Gypsum core special impregnation

**Notes** Observe notes from page 100.  
For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

### Wall heights

W628A.de Installation shaft wall free spanning, double-layer cladding



#### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf perimeter runner   | Application                        | Maximum shaft width/installation shaft wall surface execution<br>m | Wall heights<br>m   | Increased wall heights |       |
|--|------------------------------------|--|---------------------|------------------------|-------|
|  |                                    |  |                     | plus                   | m     |
| Angle profile 50/35<br>Alternative<br>CW stud or UW<br>runner possible | 1-sided application                |  | 2.00                | 3.00                   | 15.00 |
|  | 2-sided application<br><b>plus</b> |  | $a + b \leq 2.00$   | 5.00                   | –     |
|  | 3-sided application<br><b>plus</b> |  | $2 a + b \leq 2.00$ | 5.00                   | –     |

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

- When the enhanced wall heights are used
  - With 2- or 3-sided application
- Prior consultation in acc. to page 100 is recommended.

**Notes**

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

### W630.de Metal crossbars with CW studs, double-layer cladding

| Knauf System | Fire resistance class | Cladding                             |                                |                 |         | Weight<br>kg/m <sup>2</sup> | Wall thickness<br>D mm | Knauf profile CW Z100<br>h mm | Insulation layer<br>Fire resistance permissible<br>Cavity<br>Min. thickness mm<br>Min. density kg/m <sup>3</sup> | Sound insulation    |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|--------------|-----------------------|--------------------------------------|--------------------------------|-----------------|---------|-----------------------------|------------------------|-------------------------------|--|---------------------|----------------------------------|---|--|--|--|--|--|--|--|----|----|---------|----|-----|----|------|------|----|----|------|------|----|----|--|--|--|--|--|
|              |                       | Knauf Piano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant |                             |                        |                               |  | Min. thickness t mm | Without insulation layer approx. | Sound reduction index<br>Minimum insulation layer thickness |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             |                        |                               |  |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             |                        |                               |  |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              | F30                   | ●                                    |                                |                 | 2x 12.5 | 26                          | 75                     | 50                            | Without or mineral wool<br><b>G plus</b>   |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             | 100                    | 75                            |  |                     |                                  |   |  |  |  |  |  |  |  | 32 | 30 | 38      | 36 | 38  | 36 | ≥ 38 | ≥ 36 |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             | 125                    | 100                           |  |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             | 75                     | 50                            |  |                     |                                  |   |  |  |  |  |  |  |  | ●  |    | 2x 12.5 | 30 | 100 | 75 | 34   | 31   | 39 | 37 | ≥ 39 | ≥ 37 | 43 | 40 |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             | 125                    | 100                           |  |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             |                        |                               |  |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              | F90                   | ●                                    |                                |                 | 2x 20   | 40                          | 90                     | 50                            | Without or mineral wool<br><b>G plus</b>   |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             | 115                    | 75                            |  |                     |                                  |   |  |  |  |  |  |  |  | 35 | 33 | 43      | 41 | 44  | 42 | ≥ 44 | ≥ 42 |    |    |      |      |    |    |  |  |  |  |  |
|              |                       |                                      |                                |                 |         |                             | 140                    | 100                           |  |                     |                                  |   |  |  |  |  |  |  |  |    |    |         |    |     |    |      |      |    |    |      |      |    |    |  |  |  |  |  |

(I) Gypsum core special impregnation

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

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

- When applied with insulation layer **G**
- Prior consultation in acc. to page 100 is recommended.

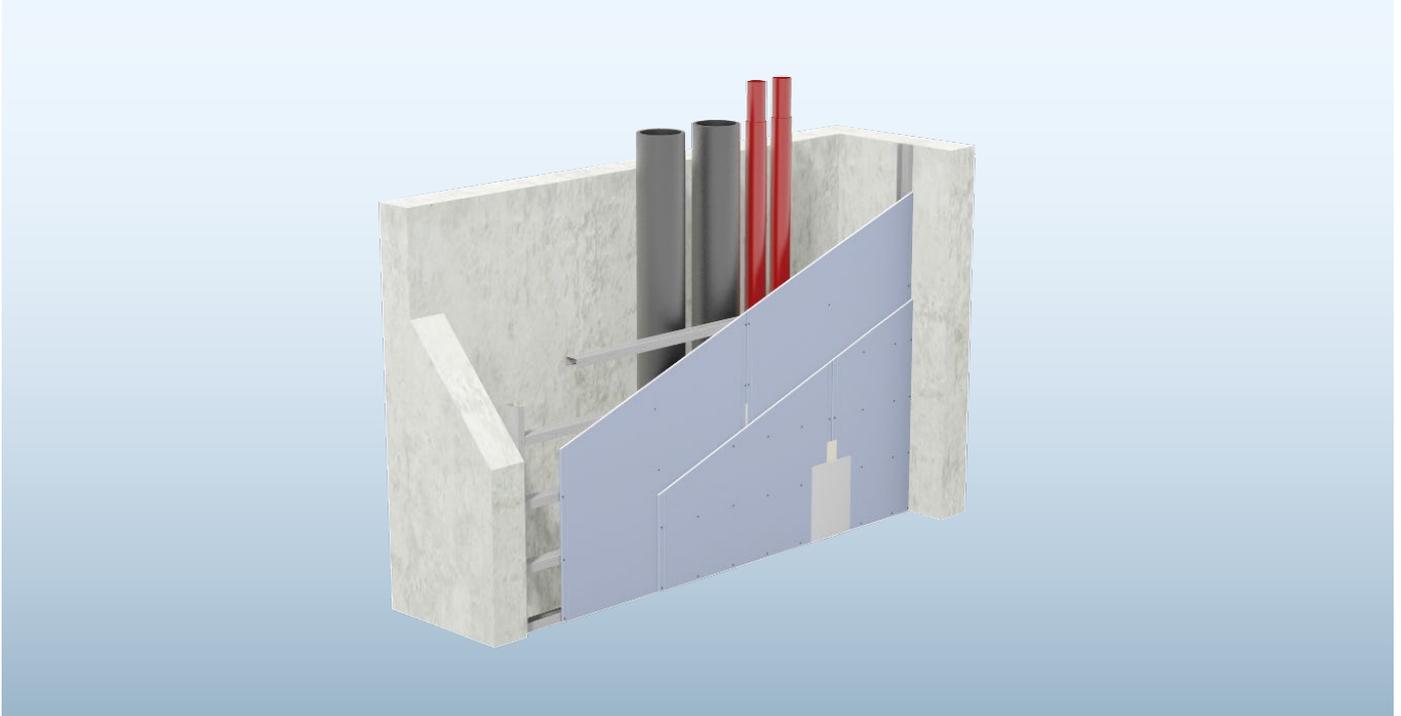
#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

#### Wall heights

W630.de Installation shaft wall metal crossbars with CW studs, double-layer cladding



#### Maximum permissible wall heights

Installation zones 1 and 2

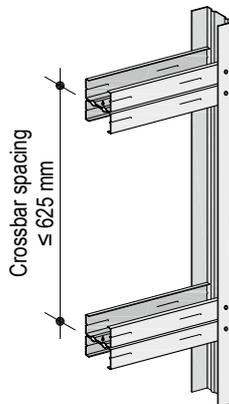
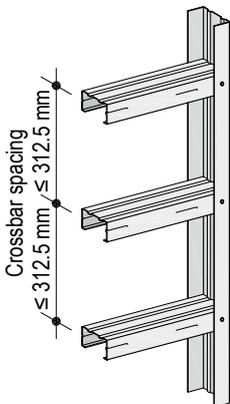
| Knauf profile      | Maximum crossbar spacing | Knauf Piano fire-resistant board / Diamant 2x 12.5 mm |        |                       |        | Solid Board 2x 20 mm          |        |                       |        |
|--------------------|--------------------------|---|--------|-----------------------|--------|-------------------------------|--------|-----------------------|--------|
|                    |                          | Max. installation shaft width                         |        | Max. partition height |        | Max. installation shaft width |        | Max. partition height |        |
| Metal gauge 0.6 mm | mm                       | m   | m plus | m                     | m plus | m                             | m plus | m                     | m plus |
| CW 50              | 312.5 <sup>1)</sup>      | 3.00  | 3.00   | 3.00                  | 15.00  | 3.00                          | 3.00   | 3.00                  | 15.00  |
| CW 75              | 312.5 <sup>1)</sup>      | 3.00  | 4.50   | 3.00                  | 15.00  | 4.00                          | 4.50   | 3.00                  | 15.00  |
| CW 100             | 312.5 <sup>1)</sup>      | 3.00  | 5.00   | 3.00                  | 15.00  | 4.00                          | 5.00   | 3.00                  | 15.00  |

1) For Solid Board an alternative crossbar spacing 625 mm with CW double stud profile possible up to shaft width 4.00 m and shaft height 3.00 m.

#### Crossbar frame spacing

■ CW profile as crossbar

■ CW double profile as crossbar



CW double profile preferred variant with installed layer



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

- When the enhanced shaft widths are used
  - When the enhanced wall heights are used
- Prior consultation in acc. to page 100 is recommended.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

### W628B.de Single metal stud frame with CW single studs, double-layer cladding

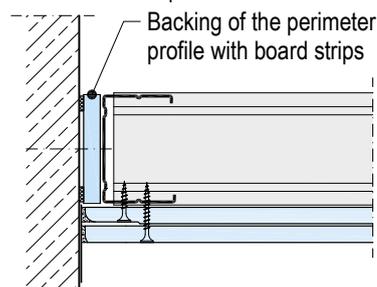
| Knauf System                            | Fire resistance class | Cladding                       |                                 |                 |         | Weight<br>Without insulation layer<br>approx. kg/m <sup>2</sup> | Wall thickness<br>D mm | Knauf profile<br>CW Z100<br>Cavity<br>h mm | Insulation layer<br>Fire resistance permissible<br>Min. thickness<br>Min. density<br>kg/m <sup>3</sup> | Sound insulation  |                       |                     |                   |                     |                                    |       |       |       |
|---|-----------------------|--------------------------------|---------------------------------|-----------------|---------|---|------------------------|--|--|---|-----------------------|---------------------|-------------------|---------------------|------------------------------------|-------|-------|-------|
|   |                       | Knauf fire-resistant board (I) | Knauf fire-resistant board (II) | Solid Board (I) | Diamant |   |                        |  |  | Min. thickness<br>t mm  | Sound reduction index |                     |                   |                     | Minimum insulation layer thickness |       |       |       |
|   |                       |                                |                                 |                 |         |   |                        |  |  |   | R <sub>w</sub> dB     | R <sub>w,R</sub> dB | R <sub>w</sub> dB | R <sub>w,R</sub> dB | – mm                               | 40 mm | 60 mm | 80 mm |
| <b>W628B.de Installation Shaft Wall</b> |                       |                                |                                 |                 |         |   |                        |  |  | Single metal stud frame with CW single studs, double-layer cladding |                       |                     |                   |                     |                                    |       |       |       |
|   | F30                   | •                              |                                 |                 | 2x 12.5 | 25  | 75                     | Without or Mineral wool<br>G plus          |  | 32  | 30                    | 38                  | 36                | 38                  | 36                                 | ≥ 38  | ≥ 36  |       |
|   |                       |                                |                                 |                 |         |   | 100                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 75    |
|   |                       |                                |                                 |                 |         |   | 125                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 100   |
|   |                       |                                |                                 |                 |         |   | 75                     |  |  |   |                       |                     |                   |                     |                                    |       |       | 50    |
|   | F60                   | •                              |                                 |                 | 2x 12.5 | 29  | 75                     | Without or mineral wool<br>G plus          |  | 34  | 31                    | 39                  | 37                | 40                  | 38                                 | 43    | 40    |       |
|   |                       |                                |                                 |                 |         |   | 100                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 75    |
|   |                       |                                |                                 |                 |         |   | 125                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 100   |
|   |                       |                                |                                 |                 |         |   | 80                     |  |  |   |                       |                     |                   |                     |                                    |       |       | 50    |
|   | F90                   | •                              |                                 |                 | 2x 15   | 29  | 80                     | Without or mineral wool<br>G plus          |  | 32  | 30                    | 38                  | 36                | 38                  | 36                                 | ≥ 38  | ≥ 36  |       |
|   |                       |                                |                                 |                 |         |   | 105                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 75    |
|   |                       |                                |                                 |                 |         |   | 130                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 100   |
|   |                       |                                |                                 |                 |         |   | 80                     |  |  |   |                       |                     |                   |                     |                                    |       |       | 50    |
|   | F90 plus              | •                              |                                 |                 | 2x 15   | 34  | 80                     | Without or mineral wool<br>G plus          |  | 32  | 30                    | 38                  | 36                | 38                  | 36                                 | ≥ 38  | ≥ 36  |       |
|   |                       |                                |                                 |                 |         |   | 105                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 75    |
|   |                       |                                |                                 |                 |         |   | 130                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 100   |
|   |                       |                                |                                 |                 |         |   | 90                     |  |  |   |                       |                     |                   |                     |                                    |       |       | 50    |
|   | F90 plus              | •                              |                                 |                 | 2x 20   | 39  | 90                     | Without or mineral wool<br>G plus          |  | 35  | 33                    | 43                  | 41                | 44                  | 42                                 | ≥ 44  | ≥ 42  |       |
|   |                       |                                |                                 |                 |         |   | 115                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 75    |
|   |                       |                                |                                 |                 |         |   | 140                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 100   |
|   |                       |                                |                                 |                 |         |   | 100                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 50    |
|   | F90                   | •                              |                                 |                 | 2x 25   | 47  | 100                    | Without or mineral wool<br>G plus          |  | 36  | 33                    | 43                  | 41                | 44                  | 42                                 | ≥ 44  | ≥ 42  |       |
|   |                       |                                |                                 |                 |         |   | 125                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 75    |
|   |                       |                                |                                 |                 |         |   | 150                    |  |  |   |                       |                     |                   |                     |                                    |       |       | 100   |

(I) Gypsum core special impregnation

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

#### With wall heights > 3.00 m

Connection to the perimeter



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

- When applied with insulation layer **G**
- Prior consultation in acc. to page 100 is recommended.

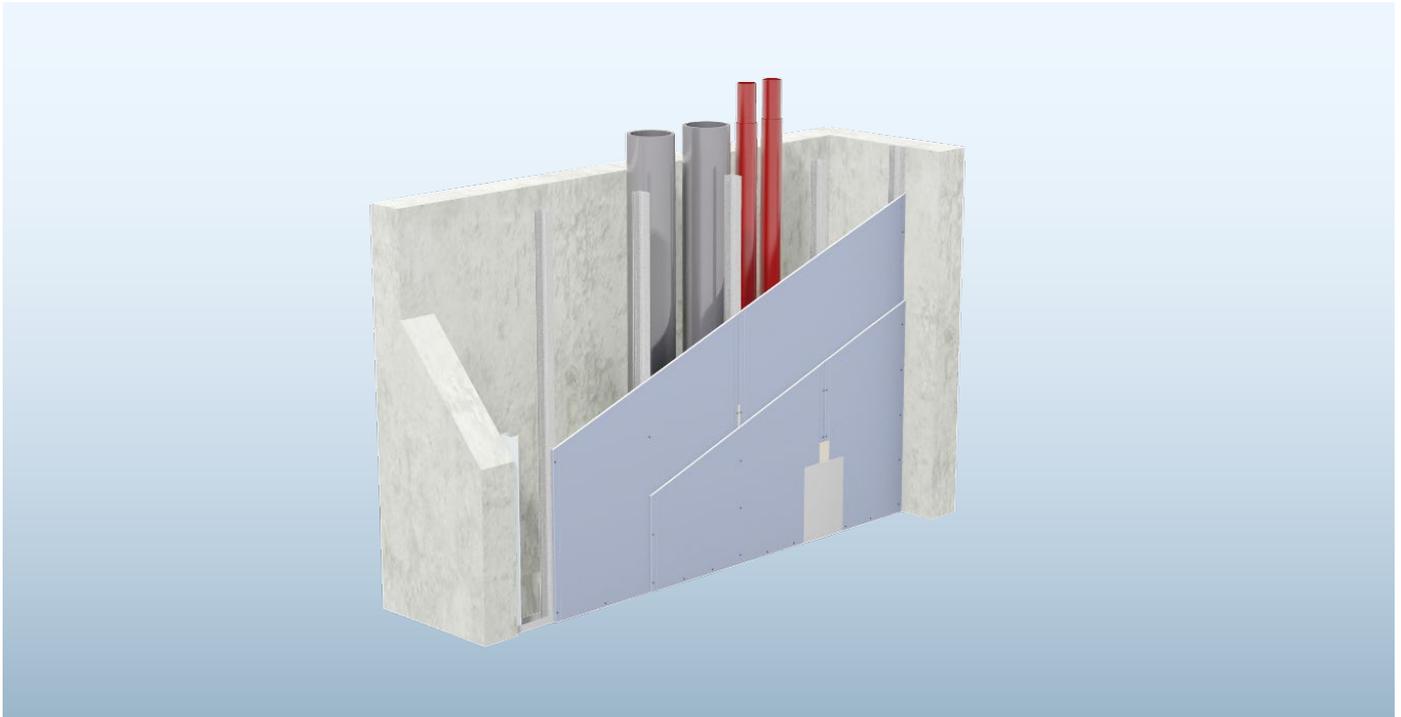
#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

### Wall heights

W628B.de Installation shaft wall single metal stud frame with CW single studs, double-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs | Wall heights                               |  |                    | Increased wall heights, double-layer cladding <sup>plus</sup> |                           |   |            |                           |             |
|--------------------|------------------|--|--|--------------------|---|---------------------------|---|------------|---------------------------|-------------|
|                    |                  | Knauf Piano fire-resistant board / Diamant | Knauf Fire-Resistant Board / Diamant 12.5 mm | Solid Board        | Knauf Piano fire-resistant board                              | Diamant                   | Knauf Feuer-schutzplatte fire-resistant board | Diamant    | Solid Board               | Solid Board |
| Metal gauge 0.6 mm | a mm             | 2x 12.5 mm m                               | 2x 15 mm m                                   | 2x 25 mm m         | 2x 12.5 mm m  | 2x 12.5 mm m              | 2x 15 mm m                                    | 2x 15 mm m | 2x 20 mm m                | 2x 25 mm m  |
| CW 50              | 1000             | –  | –  | 3.00 <sup>1)</sup> | –   | –                         | –   | –          | 2.70                      | 3.10        |
|                    | 625              | 2.95 <sup>1)</sup>                         | 3.00 <sup>1)</sup>                           | 3.00               | 2.95  | 2.65 / 3.35 <sup>1)</sup> | 3.10  | 3.25       | 2.80 / 3.55 <sup>1)</sup> | 4.00        |
|                    | 417              | 3.00                                       | 3.00   | 3.00               | 3.20  | 4.00                      | 3.80  | 4.00       | 4.00                      | 4.00        |
|                    | 312.5            | 3.00                                       | 3.00   | 3.00               | 4.00  | 4.00                      | 4.00  | 4.00       | 4.00                      | 4.05        |
| CW 75              | 1000             | –  | –  | 3.00               | –   | –                         | –   | –          | 3.95                      | 4.00        |
|                    | 625              | 3.00                                       | 3.00   | 3.00               | 4.00  | 4.00                      | 4.00  | 4.00       | 4.00                      | 4.05        |
|                    | 417              | 3.00                                       | 3.00   | 3.00               | 4.00  | 4.40                      | 4.15  | 4.65       | 4.55                      | 5.00        |
|                    | 312.5            | 3.00                                       | 3.00   | 3.00               | 4.55  | 4.95                      | 4.75  | 5.25       | 5.20                      | 5.70        |
| CW 100             | 1000             | –  | –  | 3.00               | –   | –                         | –   | –          | 4.00                      | 4.10        |
|                    | 625              | 3.00                                       | 3.00   | 3.00               | 4.50  | 4.95                      | 5.20  | 5.20       | 5.00                      | 5.40        |
|                    | 417              | 3.00                                       | 3.00   | 3.00               | 5.40  | 5.90                      | 6.20  | 6.20       | 6.10                      | 6.60        |
|                    | 312.5            | 3.00                                       | 3.00   | 3.00               | 6.15  | 6.65                      | 6.95  | 6.95       | 6.90                      | 7.45        |

1) only for installation zone 1

### Ball impact safety

Ball impact safety is provided with spacing of studs ≤ 625 mm.

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

- When the enhanced wall heights are used Prior consultation in acc. to page 100 is recommended.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

### W629.de Single metal stud frame with CW double studs, double-layer cladding

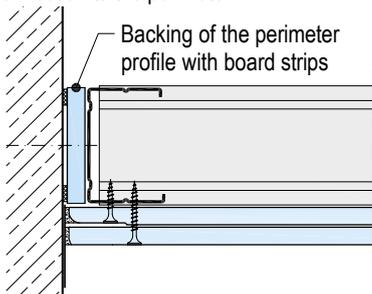
| Knauf System | Fire resistance class | Cladding                             |                                |                 |         | Weight<br>Without insulation layer approx. kg/m <sup>2</sup> | Wall thickness<br>D mm | Knauf profile CW Z100<br>h mm | Insulation layer<br>Fire resistance permissible<br>Min. thickness mm<br>Min. density kg/m <sup>3</sup> | Sound insulation<br>Sound reduction index<br>Minimum insulation layer thickness |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|--------------|-----------------------|--------------------------------------|--------------------------------|-----------------|---------|--|------------------------|-------------------------------|--|---|------|-------|-------|-------|-------------------|---------------------|-------------------|---------------------|----|----|----|----|----|------|------|
|              |                       | Knauf Piano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant |  |                        |                               |  | t mm  | – mm | 40 mm | 60 mm | 80 mm | R <sub>w</sub> dB | R <sub>w,R</sub> dB | R <sub>w</sub> dB | R <sub>w,R</sub> dB |    |    |    |    |    |      |      |
|              | F30                   | •                                    |                                |                 | 2x 12.5 | 26   | 75                     | 50                            | Without or mineral wool<br>G plus  | 32  | 30   | 38    | 36    | 38    | 36                | ≥ 38                | ≥ 36              |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 100                    | 75                            |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 125                    | 100                           |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 75                     | 50                            |  |   |      |       |       |       |                   |                     |                   | 34                  | 31 | 39 | 37 | 40 | 38 | 43   | 40   |
|              |                       |                                      |                                |                 |         |  | 100                    | 75                            |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 125                    | 100                           |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              | F60                   | •                                    |                                |                 | 2x 15   | 31   | 80                     | 50                            | Without or mineral wool<br>G plus  | 32  | 30   | 38    | 36    | 38    | 36                | ≥ 38                | ≥ 36              |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 105                    | 75                            |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 130                    | 100                           |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 80                     | 50                            |  |   |      |       |       |       |                   |                     |                   | 32                  | 30 | 38 | 36 | 38 | 36 | ≥ 38 | ≥ 36 |
|              |                       |                                      |                                |                 |         |  | 105                    | 75                            |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 130                    | 100                           |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              | F90                   | •                                    |                                |                 | 2x 20   | 40   | 90                     | 50                            | Without or mineral wool<br>G plus  | 35  | 33   | 43    | 41    | 44    | 42                | ≥ 44                | ≥ 42              |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 115                    | 75                            |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 140                    | 100                           |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 100                    | 50                            |  |   |      |       |       |       |                   |                     |                   | 36                  | 33 | 43 | 41 | 44 | 42 | ≥ 44 | ≥ 42 |
|              |                       |                                      |                                |                 |         |  | 125                    | 75                            |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |
|              |                       |                                      |                                |                 |         |  | 150                    | 100                           |  |   |      |       |       |       |                   |                     |                   |                     |    |    |    |    |    |      |      |

(I) Gypsum core special impregnation

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

#### With wall heights > 3.00 m

Connection to the perimeter



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

- When applied with insulation layer **G**
- Prior consultation in acc. to page 100 is recommended.

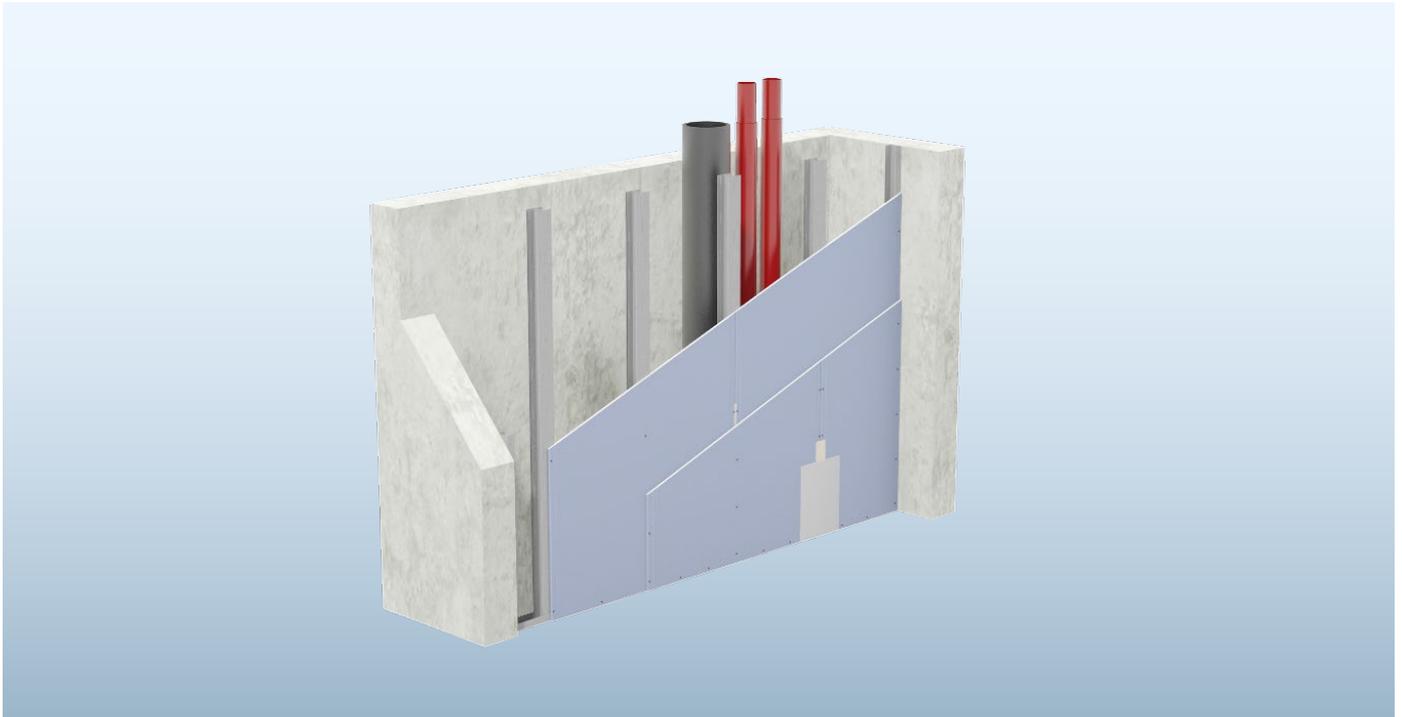
#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

### Wall heights

W629.de Installation shaft wall single metal stud frame with CW double studs, double-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs | Wall heights                               |  |             | Increased wall heights, double-layer cladding <sup>plus</sup> |         |   |         |             |             |
|--------------------|------------------|--|--|-------------|---|---------|---|---------|-------------|-------------|
|                    |                  | Knauf Piano fire-resistant board / Diamant | Knauf Fire-Resistant Board / Diamant 12.5 mm | Solid Board | Feuer-schutzplatte Knauf Piano fire-resistant board           | Diamant | Knauf Feuer-schutzplatte fire-resistant board | Diamant | Solid Board | Solid Board |
| Metal gauge 0.6 mm | a mm             | m  | m  | m           | m   | m       | m   | m       | m           | m           |
| CW 50              | 1000             | –  | –  | 3.00        | –   | –       | –   | –       | 3.95        | 4.00        |
|                    | 625              | 3.00                                       | 3.00   | 3.00        | 4.00  | 4.00    | 4.00  | 4.00    | 4.00        | 4.05        |
|                    | 312.5            | 3.00                                       | 3.00   | 3.00        | 4.05  | 4.45    | 4.30  | 4.75    | 4.80        | 5.45        |
| CW 75              | 1000             | –  | –  | 3.00        | –   | –       | –   | –       | 4.15        | 4.55        |
|                    | 625              | 3.00                                       | 3.00   | 3.00        | 4.55  | 4.95    | 4.75  | 5.25    | 5.20        | 5.70        |
|                    | 312.5            | 3.00                                       | 3.00   | 3.00        | 6.00  | 6.45    | 6.30  | 6.80    | 6.90        | 7.00        |
| CW 100             | 1000             | –  | –  | 3.00        | –   | –       | –   | –       | 5.60        | 6.00        |
|                    | 625              | 3.00                                       | 3.00   | 3.00        | 6.15  | 6.65    | 6.40  | 6.95    | 6.90        | 7.00        |
|                    | 312.5            | 3.00                                       | 3.00   | 3.00        | 7.00  | 7.00    | 7.00  | 7.00    | 7.00        | 7.00        |

### Ball impact safety

Ball impact safety is provided with spacing of studs ≤ 625 mm.



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

- When the enhanced wall heights are used
- Prior consultation in acc. to page 100 is recommended.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

W635.de Single metal stud frame with UW double runners, double-layer cladding

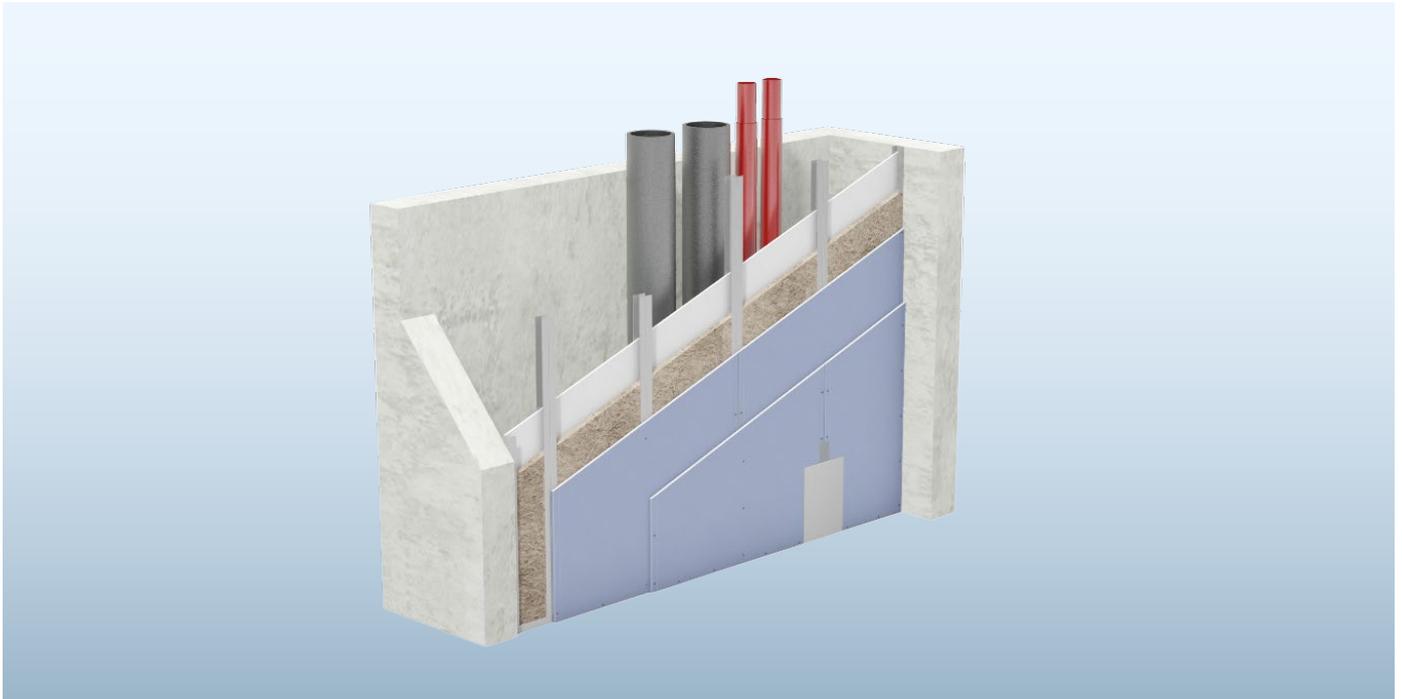
| Knauf System  | Fire resistance class | Cladding                             |                                |                 |                           | Weight  | Wall thickness   | Knauf profile UW Z100 | Insulation layer           |                   | Sound insulation      |                     |                                    |                     |
|---|-----------------------|--------------------------------------|--------------------------------|-----------------|---------------------------|---|------------------|-----------------------|----------------------------|-------------------|-----------------------|---------------------|------------------------------------|---------------------|
|   |                       | Knauf Piano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant                   |   |                  |                       | Min. thickness             | Min. density      | Sound reduction index |                     | Minimum insulation layer thickness |                     |
|   |                       |                                      |                                |                 | t mm                      | Without insulation layer<br>approx. kg/m <sup>2</sup> | D mm             | h mm                  | mm                         | kg/m <sup>3</sup> | R <sub>w</sub> dB     | R <sub>w,R</sub> dB | R <sub>w</sub> dB                  | R <sub>w,R</sub> dB |
|   |                       |                                      |                                |                 |                           |   |                  |                       |                            |                   |                       |                     |                                    |                     |
| <b>W635.de Installation Shaft Wall</b> <span style="float: right;">Single metal stud frame with UW double runners, double-layer cladding</span> |                       |                                      |                                |                 |                           |   |                  |                       |                            |                   |                       |                     |                                    |                     |
|   | F90                   | •                                    |                                |                 | 2x 15 + 12.5 intermediate | 46  | 80<br>105<br>130 | 50<br>75<br>100       | Mineral wool<br>S<br>40 30 |                   | 49                    | 47                  | 54                                 | 52                  |

(I) Gypsum core special impregnation

|              |  |
|--------------|--|
| <b>Notes</b> | Observe notes from page 100.   |
|              | For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de. |

### Wall heights

W635.de Installation Shaft Wall, single metal stud frame with UW double studs, double-layer cladding



#### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Stud spacing<br>a<br>mm | Wall heights  | Increased wall heights <span style="background-color: #0070C0; color: white; padding: 2px;">plus</span> |
|--------------------|-------------------------|---|---|
|                    |                         | Diamant 2x 12.5 mm +<br>Knauf Piano fire-resistant board<br>m | Diamant 2x 12.5 mm +<br>Knauf Piano fire-resistant board<br>m   |
| Metal gauge 0.6 mm |                         |   |   |
| UW 50              | 625                     | 3.00  | 4.00  |
| UW 75              | 625                     | 3.00  | 4.50  |
| UW 100             | 625                     | 3.00  | 5.00  |

plus **Extension of the fire resistance Certificate of Usability**  
 ■ When the enhanced wall heights are used  
 Prior consultation in acc. to page 100 is recommended.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Installation Shaft Walls W62.de.

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W66.de

D28.de



## **Water action classes W0-I and W1-I**

### **Solid ceiling systems with gypsum boards**

D112.de Board ceiling, metal grid with CD profiles 60/27

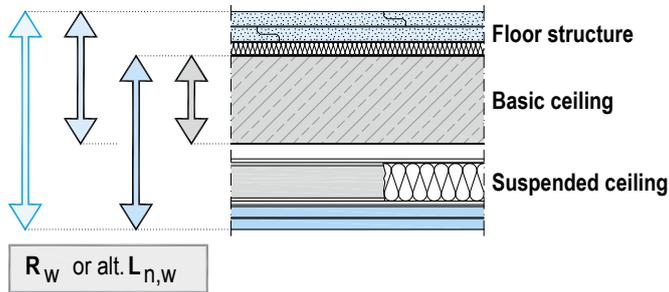
D113.de Board ceiling, metal grid with CD channels 60/27 flush

D116.de Board ceiling, metal grid with UA Profile 50/40 + CD Profile 60/27 large-span

D131.de Free-spanning ceiling

### Sound insulation – Certified airborne and impact sound insulation with Knauf Board Ceilings

#### Test set-up



#### Suspended ceiling D112.de

- Furring channel CD 60/27
- Mineral wool insulation layer 30 mm
- Damping universal bracket
- Cladding

Demands on the insulation layer (e.g. from Knauf Insulation):  
Mineral wool insulation layer 30 mm acc. to EN 13162,  
length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

#### Airborne and impact sound insulation

|  | Basic ceiling    |                 |                  |                   | Basic ceiling + flooring construction |                  |                 |                   |                    |                  |                  |                   |                  |                  |                    |                   |
|--|------------------|-----------------|------------------|-------------------|---------------------------------------|------------------|-----------------|-------------------|--------------------|------------------|------------------|-------------------|------------------|------------------|--------------------|-------------------|
|  | $R_w$<br>dB      | $R_{w,R}$<br>dB | $L_{n,w}$<br>dB  | $L_{n,w,R}$<br>dB | $R_w$<br>dB                           | $R_{w,R}$<br>dB  | $L_{n,w}$<br>dB | $L_{n,w,R}$<br>dB | $R_w$<br>dB        | $R_{w,R}$<br>dB  | $L_{n,w}$<br>dB  | $L_{n,w,R}$<br>dB | $R_w$<br>dB      | $R_{w,R}$<br>dB  | $L_{n,w}$<br>dB    | $L_{n,w,R}$<br>dB |
| <b>Without suspended ceiling</b><br>(all dimensions in mm) | 53               | 51              | 80               | 82                | 58                                    | 56               | 57              | 59                | 62                 | 60               | 49               | 51                | 65               | 63               | 41                 | 43                |
| <b>Basic ceiling + suspended ceiling D112.de</b>           | ↔                |                 |                  |                   |                                       |                  |                 |                   |                    |                  |                  |                   |                  |                  |                    |                   |
| <b>12.5 mm Diamant</b>                                     | 70               | 68              | 55               | 57                | 71 <sup>1)</sup>                      | 67 <sup>1)</sup> | 44              | 48 <sup>4)</sup>  | 74 <sup>1)</sup>   | 70 <sup>1)</sup> | 39               | 43 <sup>4)</sup>  | 70 <sup>2)</sup> | 68 <sup>2)</sup> | 30 <sup>1)</sup>   | 34 <sup>1)</sup>  |
| <b>15 mm Diamant</b>                                       | 70 <sup>3)</sup> | $\geq 68^3)$    | 55 <sup>3)</sup> | $\leq 57^3)$      | 72                                    | 70               | 45              | 47                | 74 <sup>1)3)</sup> | $\geq 70^3)$     | 39 <sup>3)</sup> | $\leq 43^3)4)$    | 70 <sup>2)</sup> | $\geq 68^3)$     | 30 <sup>1)3)</sup> | $\leq 34^3)$      |
| <b>2x 12.5 mm Diamant</b>                                  | 74               | 72              | 52               | 54                | 76                                    | 72 <sup>1)</sup> | 39              | 43 <sup>4)</sup>  | 80 <sup>1)</sup>   | 76 <sup>1)</sup> | 33               | 37 <sup>4)</sup>  | 74 <sup>2)</sup> | 72 <sup>2)</sup> | 24 <sup>1)</sup>   | 28 <sup>1)</sup>  |

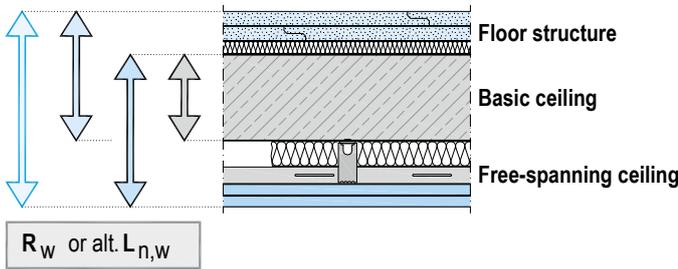
- 1) Calculation based on the detailed procedure acc. to EN 12354
- 2) Values of basic ceiling and suspended ceiling without flooring
- 3) Values derived from cladding 12.5 mm
- 4) Enhanced margin of 4 dB for consideration of the test with partial screed surface.

Larger suspension heights / larger thicknesses of the basic ceiling improve sound insulation.

|              |  |
|--------------|--|
| <b>Notes</b> | Observe notes from page 100.   |
|              | For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de. |

### Sound insulation – Certified airborne and impact sound insulation with Knauf Free-Spanning Ceilings

#### Test set-up



#### Free-spanning ceiling D131.de

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

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

#### Airborne and impact sound insulation

| Basic ceiling<br>Reinforced concrete ceiling<br>140 mm, approx. 320 kg/m <sup>2</sup><br>(standard reference floor) | Without floor                             |                        |                        |                          | Basic ceiling + flooring construction |                        |                        |                          |                      |                        |                        |                          | Flowing screed       |                        |                        |                          |
|---|---|------------------------|------------------------|--------------------------|---------------------------------------|------------------------|------------------------|--------------------------|----------------------|------------------------|------------------------|--------------------------|----------------------|------------------------|------------------------|--------------------------|
|   | R <sub>w</sub><br>dB                      | R <sub>w,R</sub><br>dB | L <sub>n,w</sub><br>dB | L <sub>n,w,R</sub><br>dB | R <sub>w</sub><br>dB                  | R <sub>w,R</sub><br>dB | L <sub>n,w</sub><br>dB | L <sub>n,w,R</sub><br>dB | R <sub>w</sub><br>dB | R <sub>w,R</sub><br>dB | L <sub>n,w</sub><br>dB | L <sub>n,w,R</sub><br>dB | R <sub>w</sub><br>dB | R <sub>w,R</sub><br>dB | L <sub>n,w</sub><br>dB | L <sub>n,w,R</sub><br>dB |
| <br>Without suspended ceiling<br>(all dimensions in mm)   | 53  | 51                     | 80                     | 82                       | 58                                    | 56                     | 57                     | 59                       | 62                   | 60                     | 49                     | 51                       | 65                   | 63                     | 41                     | 43                       |
|   | Basic ceiling + suspended ceiling D131.de |                        |                        |                          | Basic ceiling + flooring + subceiling |                        |                        |                          |                      |                        |                        |                          |                      |                        |                        |                          |
|   | <br>■ 2x CW 75<br>■ 12.5 mm Diamant       | 69 <sup>1)</sup>       | 65                     | 54 <sup>1)</sup>         | 58                                    | 73                     | 71                     | 40                       | 43                   | 77 <sup>1)</sup>       | 71                     | 34 <sup>1)</sup>         | 40                   | 69 <sup>2)</sup>       | 65 <sup>2)</sup>       | 25 <sup>1)</sup>         |
| <br>■ 2x CW 75<br>■ 15 mm Diamant   | 69 <sup>3)</sup>                          | ≥ 65 <sup>3)</sup>     | 54 <sup>3)</sup>       | ≤ 58 <sup>3)</sup>       | 73 <sup>3)</sup>                      | 71 <sup>3)</sup>       | 41 <sup>3)</sup>       | 43 <sup>3)</sup>         | 77 <sup>3)</sup>     | ≥ 71 <sup>3)</sup>     | 34 <sup>3)</sup>       | 40 <sup>3)</sup>         | 69 <sup>3)</sup>     | ≥ 65 <sup>3)</sup>     | 25 <sup>3)</sup>       | 31 <sup>3)</sup>         |
| <br>■ 2x CW 75<br>■ 2x 12.5 mm Diamant  | 70  | 68                     | 50                     | 52                       | 75                                    | 73                     | 37                     | 39                       | 78 <sup>1)</sup>     | 74                     | 34 <sup>1)</sup>       | 38                       | 70 <sup>2)</sup>     | 68 <sup>2)</sup>       | 25 <sup>1)</sup>       | 29                       |

- 1) Calculation based on the detailed procedure acc. to EN 12354
- 2) Values of basic ceiling and suspended ceiling without flooring
- 3) Enhanced margin of 4 dB for consideration of the test with partial screed surface.
- 4) Enhanced margin of 4 dB for consideration of the test with partial screed surface.

Larger spacings to basic ceiling / larger thicknesses of the basic ceiling improve sound insulation.

|       |  |
|-------|--|
| Notes | Observe notes from page 100.   |
|       | For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de. |

D112.de Metal grid with CD profiles 60/27

Without fire resistance / fire resistance solely from below and/or from above

| Requirements on the basic ceiling for fire exposure   | Fire resistance class |            | Cladding (lateral application) |                                      |                                |                 |         |               | Nominal weight<br>Without insulation layer<br>kg/m <sup>2</sup> | Furring channel<br>CD 60/27<br>Z100<br>Maximum spacings<br>(b) | Insulation layer<br>Required for fire resistance |                                   |
|---|-----------------------|------------|--------------------------------|--------------------------------------|--------------------------------|-----------------|---------|---------------|---|--|--|-----------------------------------|
|   | From below            | From above | Knauf Wallboard (I)            | Knauf Piano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant | Drystar-Board |   |  | Minimum thickness<br>mm                          | Min. density<br>kg/m <sup>3</sup> |
| <b>From below</b><br>No fire resistance requirements for basic ceiling/roof construction            | For fire exposure     |            |                                |                                      |                                |                 |         |               | Minimum thickness   |  | Minimum thickness                                | Min. density                      |
| <b>From above (Plenum)</b><br>Raw ceiling must have same fire resistance class as suspended ceiling | From below            | From above |                                |                                      |                                |                 |         |               | mm  | kg/m <sup>2</sup>  | mm   | kg/m <sup>3</sup>                 |

D112.de Board ceiling, metal grid with CD profiles 60/27

|  |     |     |   |  |   |   |         |         |      |     |  |      |     |                        |
|--|-----|-----|---|--|---|---|---------|---------|------|-----|--|------|-----|------------------------|
| <p>e.g. furring channel only</p>         | -   | -   | • |  |   |   |         | 12.5    | 11.7 | 500 | -  |      |     |                        |
|  |     |     | • |  |   |   | •       | 12.5    | 13.5 |     |  |      |     |                        |
|  |     |     | • |  |   |   |         | 2x 12.5 | 21.1 |     |  |      |     |                        |
| <p>e.g. carrying and furring channel</p> | F30 | -   | • |  |   |   |         | 2x 12.5 | 24.3 | 500 | Without or Mineral wool (G)  |      |     |                        |
|  |     |     |   |  |   | • | 2x 12.5 | 28.3    |      |     |  |      |     |                        |
|  |     |     |   |  | • |   | 20      | 19.9    | 625  |     |  |      |     |                        |
|  | F90 | -   |   |  |   |   |         | 2x 20   | 37.5 | 500 | Without or Mineral wool (G)  |      |     |                        |
|  |     |     |   |  |   | • |         |         |      |     |  |      |     |                        |
|  |     |     |   |  |   |   |         | •       | 15   |     |  | 15.5 | 500 | Mineral wool (S) 40 40 |
|  |     |     |   |  |   |   |         | •       | 15   |     |  | 17.9 | 500 | +                      |
|  | F30 | F30 | • |  |   |   |         | 2x 12.5 | 24.3 | 500 | Mineral wool (S) 40 40<br>150 mm wide on carrying channel                                |      |     |                        |
|  |     |     |   |  |   |   | •       | 2x 12.5 | 28.3 |     |  |      |     |                        |
|  |     |     |   |  |   |   |         |         |      |     |  |      |     |                        |
|  | F90 | F90 |   |  |   |   |         | 2x 20   | 37.5 | 500 | Mineral wool (S) 40 40<br>+<br>Mineral wool (S) 40 40<br>150 mm wide on carrying channel |      |     |                        |
|  |     |     |   |  |   |   | •       |         |      |     |  |      |     |                        |

(I) Gypsum core special impregnation

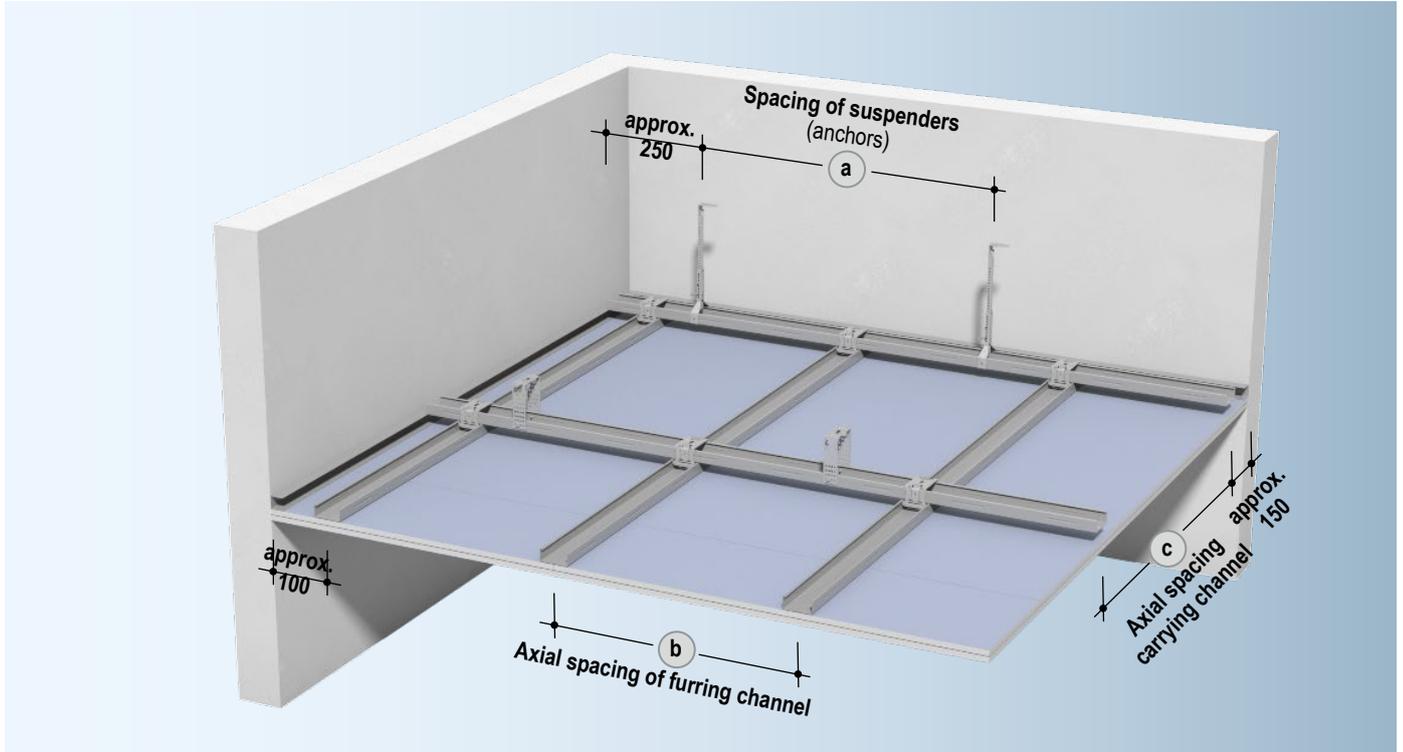
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

**Notes**  
Observe notes from page 100.  
For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Maximum grid spacings

Dimensions in mm

D112.de Board ceiling, metal grid with CD profiles 60/27



Determination of load class

| Load class<br>kN/m <sup>2</sup> | Nominal weight +<br>weight of additional loads<br>kg/m <sup>2</sup> |
|---------------------------------|---|
| Up to 0.65                      | 60  |
| Up to 0.50                      | 50  |
| Up to 0.40                      | 40  |
| Up to 0.30                      | 30  |
| Up to 0.15                      | 20  |
|                                 | 10  |

Without fire resistance/fire resistance solely from below / fire resistance solely (from below and) from above, furring channel only

| Axial spacings<br>furring channel<br>b | Suspender spacings a<br>Load class in kN/m <sup>2</sup> |            |                          |                          |                          |
|--|---|------------|--------------------------|--------------------------|--------------------------|
|  | Up to 0.15  | Up to 0.30 | Up to 0.40 <sup>1)</sup> | Up to 0.50 <sup>1)</sup> | Up to 0.65 <sup>1)</sup> |
| 500                                    | 1300  | 1050       | 950                      | 900                      | 850                      |
| 625                                    | 1200  | 1000       | 900                      | 850                      | 800                      |

Fire protection solely (from below and) from above – carrying and furring channel

| Axial spacings<br>carrying<br>channel c | Suspender spacings a<br>Load class in kN/m <sup>2</sup> |            |                          |                          |
|---|---|------------|--------------------------|--------------------------|
|   | Up to 0.30  | Up to 0.40 | Up to 0.50 <sup>1)</sup> | Up to 0.65 <sup>1)</sup> |
| 500                                     | 950   | 850        | 800                      | 700                      |
| 600                                     | 900   | 800        | 700                      | 700                      |
| 700                                     | 850   | 750        | 700 <sup>2)</sup>        | 650 <sup>2)</sup>        |
| 800                                     | 800   | –          | –                        | –                        |

1) Use suspenders of load carrying capacity class 0.40 kN

2) Only permissible for furring channel spacing b max. 500 mm

Without fire resistance/fire resistance solely from below - carrying channel and furring channel

| Axial spacings<br>carrying<br>channel c | Suspender spacings a<br>Load class in kN/m <sup>2</sup> |            |                          |                          |
|---|---|------------|--------------------------|--------------------------|
|   | Up to 0.15  | Up to 0.30 | Up to 0.50 <sup>1)</sup> | Up to 0.65 <sup>1)</sup> |
| 500                                     | 1200  | 950        | 800                      | 750                      |
| 600                                     | 1150  | 900        | 750                      | 700                      |
| 700                                     | 1100  | 850        | 700                      | 650                      |
| 800                                     | 1050  | 800        | 700                      | –                        |
| 900                                     | 1000  | 800        | –                        | –                        |
| 1000                                    | 950   | 750        | –                        | –                        |
| 1100                                    | 900   | 750        | –                        | –                        |
| 1200                                    | 900   | –          | –                        | –                        |

**Notes**  
 Customized dimensioning of the ceiling substructure is possible on request.  
 It is recommended that the substructure is designed to accommodate a possible additional ceiling (≤ 0.15 kN/m<sup>2</sup>).  
 Observe notes from page 100.  
 For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

**plus** Extension of the fire resistance Certificate of Usability  
 Prior consultation in acc. to page 100 is recommended.

D113.de Metal grid with CD channels 60/27 flush

Without fire resistance / fire resistance solely from below and/or from above

| Requirements on the basic ceiling for fire exposure  | Fire resistance class |            | Cladding (lateral application) |                                      |                                |                 |         |                   | Nominal weight<br>Without insulation layer<br>kg/m <sup>2</sup> | Furring channel<br>CD 60/27<br>Z100<br>Maximum spacings<br>(b) | Insulation layer<br>Required for fire resistance |                   |
|--|-----------------------|------------|--------------------------------|--------------------------------------|--------------------------------|-----------------|---------|-------------------|---|--|--|-------------------|
|  | From below            | From above | Knauf Wallboard (I)            | Knauf Plano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant | Drystar-Board     |   |  | Minimum thickness                                | Min. density      |
| From below<br>No fire resistance requirements for basic ceiling/roof construction            | For fire exposure     |            |                                |                                      |                                |                 |         | Minimum thickness |   |  | mm   | kg/m <sup>3</sup> |
| From above (Plenum)<br>Raw ceiling must have same fire resistance class as suspended ceiling | From below            | From above |                                |                                      |                                |                 |         | mm                | kg/m <sup>2</sup>   | mm   | mm   | kg/m <sup>3</sup> |
| <b>D113.de Board Ceiling, metal grid with CD channels 60/27 flush</b>                        |                       |            |                                |                                      |                                |                 |         |                   |   |  |  |                   |
|  | -                     | -          | •                              |                                      |                                |                 |         | 12.5              | 11.7  |  |  |                   |
|  | -                     | -          |                                |                                      |                                |                 | •       | 12.5              | 13.5  | 500  | -  |                   |
|  |                       |            | •                              |                                      |                                |                 |         | 2x 12.5           | 21.1  |  |  |                   |
|  | F30                   | -          | •                              |                                      |                                |                 |         | 2x 12.5           | 24.3  | 500  | Without or                                       |                   |
|  |                       |            |                                |                                      |                                |                 | •       | 2x 12.5           | 28.3  | 500  | Mineral wool                                     | G                 |
|  |                       |            |                                |                                      |                                |                 |         |                   |   |  |  |                   |
|  | -                     | F30        |                                | •                                    |                                |                 |         | 15                | 15.5  | 500  | Mineral wool                                     | S                 |
|  |                       |            |                                |                                      |                                |                 | •       | 15                | 17.9  | 500  | 40   | 40                |
|  | F30                   | F30        | •                              |                                      |                                |                 |         | 2x 12.5           | 24.3  | 500  | Without or                                       |                   |
|  |                       |            |                                |                                      |                                |                 | •       | 2x 12.5           | 28.3  | 500  | mineral wool                                     | G                 |
|  | F90                   | F90        |                                | •                                    |                                |                 |         | 2x 20             | 37.5  | 400  | Mineral wool                                     | S                 |
|  |                       |            |                                |                                      |                                |                 |         |                   |   |  | 2x 40  | 40                |

(I) Gypsum core special impregnation

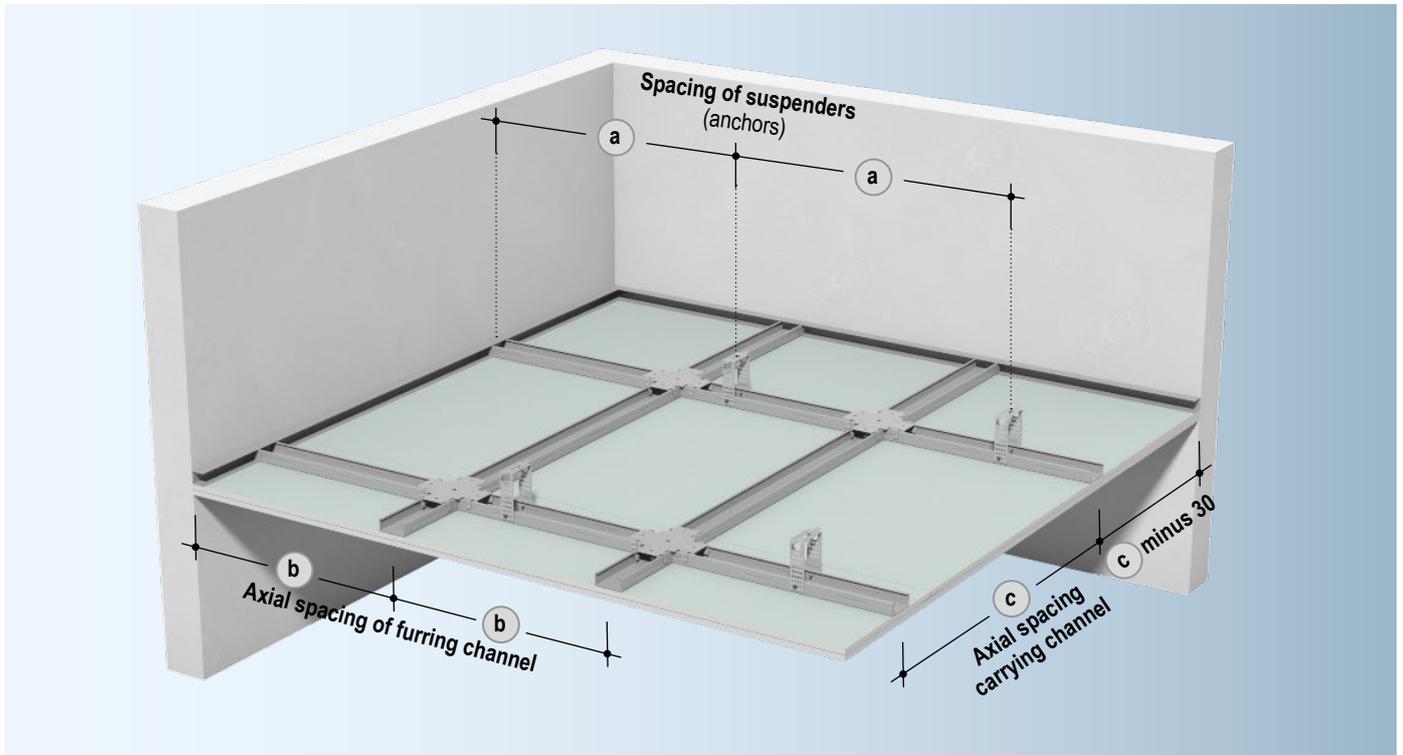
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

**Notes**  
Observe the notes on page 100.  
For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Maximum grid spacings

Dimensions in mm

D113.de Board ceiling, metal grid with CD channels 60/27 flush



Determination of load class

| Load class<br>kN/m <sup>2</sup> | Nominal weight +<br>weight of additional loads<br>kg/m <sup>2</sup> |
|---------------------------------|---|
| Up to 0.65                      | 60  |
| Up to 0.50                      | 50  |
| Up to 0.40                      | 40  |
| Up to 0.30                      | 30  |
| Up to 0.15                      | 20  |
|                                 | 10  |

Without fire resistance / fire resistance solely from below - Carrying and furring channel

| Axial spacings<br>carrying<br>channel (c) | Suspender spacings (a)          |               |                          |                          |
|---|---------------------------------|---------------|--------------------------|--------------------------|
|   | Load class in kN/m <sup>2</sup> |               |                          |                          |
|   | Up to 0.15                      | Up to 0.30    | Up to 0.40 <sup>1)</sup> | Up to 0.50 <sup>1)</sup> |
| 500                                       | 1200                            | 950           | 850                      | 800                      |
| 600                                       | 1150                            | 900           | 800                      | 750                      |
| 700                                       | 1100                            | 850           | 750                      | 700                      |
| 800                                       | 1050                            | 800           | 750                      | 700                      |
| 900                                       | 1000                            | 800           | 700                      | -                        |
| 1000                                      | 950                             | 750           | 700                      | -                        |
| 1100                                      | 900                             | 750           | -                        | -                        |
| 1200                                      | 900                             | 700           | -                        | -                        |
| 1250                                      | 900<br>(1100)                   | 650<br>(1000) | -                        | -                        |

Fire protection solely (from below and) from above - Carrying and furring channel

| Axial spacings<br>carrying<br>channel (c) | Suspender spacings (a)          |                          |                          |                          |
|---|---------------------------------|--------------------------|--------------------------|--------------------------|
|   | Load class in kN/m <sup>2</sup> |                          |                          |                          |
|   | Up to 0.30                      | Up to 0.40 <sup>1)</sup> | Up to 0.50 <sup>1)</sup> | Up to 0.65 <sup>1)</sup> |
| 500                                       | 850                             | 750                      | 700                      | 600                      |
| 600                                       | 800                             | 700                      | 650                      | 550                      |
| 700                                       | 750                             | 650                      | 600                      | 550                      |
| 800                                       | 700                             | 650                      | 600                      | -                        |
| 900                                       | 700                             | 600                      | 550                      | -                        |
| 1000                                      | 650                             | 600                      | 550                      | -                        |
| 1100                                      | 650                             | 600                      | -                        | -                        |
| 1200                                      | 600                             | 550                      | -                        | -                        |
| 1250                                      | 600<br>(850)                    | -                        | -                        | -                        |

1) Use suspenders of load carrying capacity class 0.40 kN

Values in brackets ( ) only apply when the cladding is screw fastened to the carrying channel.

**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

Notes

Customized dimensioning of the ceiling substructure is possible on request.

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

### D116.de Metal grid with UA profiles 50/40 + CD profile 60/27 large-span

Without fire resistance / fire resistance solely from below and/or from above

| Requirements on the basic ceiling for fire exposure   | Fire resistance class |                   | Cladding (lateral application) |                                      |                                |                 |         |               | Rated weight<br>Without insulation layer<br>kg/m <sup>2</sup> | Furring channel<br>CD 60/27<br>Z100<br>Maximum spacings<br>(b) | Insulation layer<br>Required for fire resistance |  |  |
|---|-----------------------|-------------------|--------------------------------|--------------------------------------|--------------------------------|-----------------|---------|---------------|---|--|--|--|--|
|   | From below            | From above        | Knauf Wallboard (I)            | Knauf Plano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant | Drystar-Board |   |  | Minimum thickness<br>mm                          | Min. density<br>kg/m <sup>3</sup>  |  |
| <b>From below</b><br>No fire resistance requirements for basic ceiling/roof construction            | For fire exposure     |                   |                                |                                      |                                |                 |         |               | 12.5  | 14.5   |  |  |  |
| <b>From above (Plenum)</b><br>Raw ceiling must have same fire resistance class as suspended ceiling | <b>From below</b>     | <b>From above</b> |                                |                                      |                                |                 |         |               | 12.5  | 16.3   | 500  |  |  |
|   |                       |                   |                                |                                      |                                |                 |         |               | 2x 12.5   | 23.9   |  |  |  |
|   | F30                   | -                 |                                |                                      |                                |                 |         |               | 2x 12.5   | 27.1   | 500  | Without or mineral wool (G)  |  |
|   |                       |                   |                                |                                      |                                |                 |         |               | 2x 12.5   | 31.1   | 500  |  |  |
|   |                       |                   |                                |                                      |                                |                 |         |               |   | 20   | 22.7   |  |  |
|   | F90                   | -                 |                                |                                      |                                |                 |         |               | 2x 20   | 40.3   | 500  | Without or mineral wool (G)  |  |
|   |                       |                   |                                |                                      |                                |                 |         |               | 15  | 31.5   | 500  |  |  |
|   |                       |                   |                                |                                      |                                |                 |         |               |   | 15   | 20.7   |  |  |
|   | F30                   | F30               |                                |                                      |                                |                 |         |               | 2x 12.5   | 27.1   | 500  | Mineral wool (S)<br>40 40<br>+<br>mineral wool (S)<br>40 40<br>150 mm wide on carrying channel |  |
|   |                       |                   |                                |                                      |                                |                 |         |               | 2x 12.5   | 31.1   | 500  |  |  |
|   |                       |                   |                                |                                      |                                |                 |         |               |   | 2x 20  | 40.3   |  |  |
|   | F90                   | F90               |                                |                                      |                                |                 |         |               | 2x 20   | 40.3   | 500  | Mineral wool (S)<br>40 40<br>+<br>mineral wool (S)<br>40 40<br>150 mm wide on carrying channel |  |
|   |                       |                   |                                |                                      |                                |                 |         |               |   |  |  |  |  |
|   |                       |                   |                                |                                      |                                |                 |         |               |   |  |  |  |  |

(I) Gypsum core special impregnation

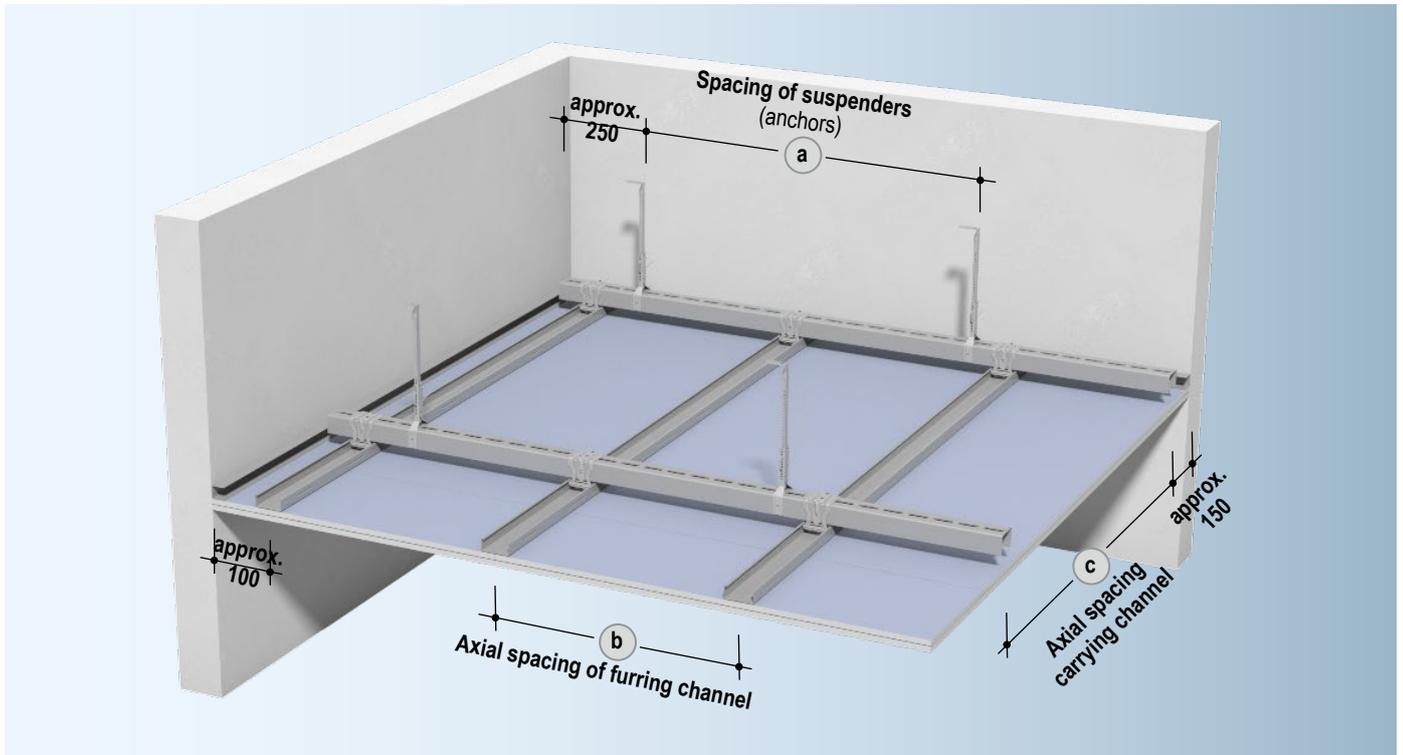
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

**Notes**  
Observe notes from page 100.  
For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Maximum grid spacings

Dimensions in mm

D116.de Board ceiling, metal Grid with UA profiles 50/40 + CD profile 60/27 large-span



Determination of load class

| Load class<br>kN/m <sup>2</sup> | Nominal weight +<br>weight of additional loads<br>kg/m <sup>2</sup> |
|---------------------------------|---|
| Up to 0.65                      | 60  |
| Up to 0.50                      | 50  |
| Up to 0.40                      | 40  |
| Up to 0.30                      | 30  |
| Up to 0.15                      | 20  |
|                                 | 10  |

Without fire resistance/fire resistance solely from below, carrying and furring channel

| Axial spacings<br>carrying<br>channel <b>c</b> | Suspender spacings <b>a</b>     |                    |            |            |
|--|---------------------------------|--------------------|------------|------------|
|  | Load class in kN/m <sup>2</sup> |                    |            |            |
|  | Up to 0.15                      | Up to 0.30         | Up to 0.50 | Up to 0.65 |
| Nonius stirrup 0.40 kN                         |                                 |                    |            |            |
| 500  | 2600                            | 2050 <sup>1)</sup> | 1600       | 1200       |
| 700  | 2300                            | 1850 <sup>1)</sup> | 1100       | 850        |
| 800  | 2200                            | 1650               | 1000       | –          |
| 900  | 2150                            | 1450               | –          | –          |
| 1000   | 2050                            | 1300               | –          | –          |
| 1100   | 2000                            | 1200               | –          | –          |
| 1200   | 1950                            | –                  | –          | –          |
| 1300   | 1900                            | –                  | –          | –          |
| 1500   | 1750                            | –                  | –          | –          |

Fire protection solely (from below and) from above, carrying and furring channel

| Axial spacings<br>carrying<br>channel<br><b>c</b> | Suspender spacings <b>a</b>     |                    |            |                    |
|---|---------------------------------|--------------------|------------|--------------------|
|   | Load class in kN/m <sup>2</sup> |                    |            |                    |
|   | Up to 0.30                      | Up to 0.40         | Up to 0.50 | Up to 0.65         |
| Nonius stirrup 0.40 kN                            |                                 |                    |            |                    |
| 500   | 1150                            | 1000               | 950        | 850                |
| 700   | 1000                            | 900                | 850        | 750                |
| 800   | 950                             | 850                | 800        | –                  |
| 900   | 900                             | 800                | –          | –                  |
| 1000  | 900 <sup>3)</sup>               | –                  | –          | –                  |
| Threaded rod M8                                   |                                 |                    |            |                    |
| 500   | 1700                            | 1500               | 1400       | 1300               |
| 700   | 1500                            | 1350               | 1250       | 1100 <sup>2)</sup> |
| 800   | 1400                            | 1300               | 1200       | –                  |
| 900   | 1400                            | 1250 <sup>2)</sup> | –          | –                  |
| 1000  | 1300 <sup>2)</sup>              | 1200 <sup>2)</sup> | –          | –                  |

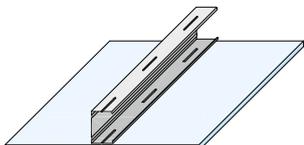
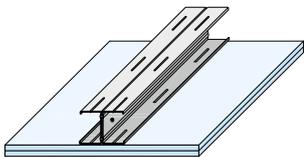
- 1) With fire resistance solely from below: Spacing of suspender **a** max. 1700 mm
- 2) Only permissible for furring channel spacing **b** max. 500 mm

|              |  |
|--------------|--|
| <b>Notes</b> | Customized dimensioning of the ceiling substructure is possible on request.  |
|              | It is recommended that the substructure is designed to accommodate a possible additional ceiling (≤ 0.15 kN/m <sup>2</sup> ). Observe notes from page 100. |
|              | For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.   |

**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

W0-I / W1-I  
W11.de  
W6.de  
W62.de  
D11.de  
D13.de  
W2-I / W3-I  
W38.de  
W68.de  
D28.de

### Wall height without fire protection

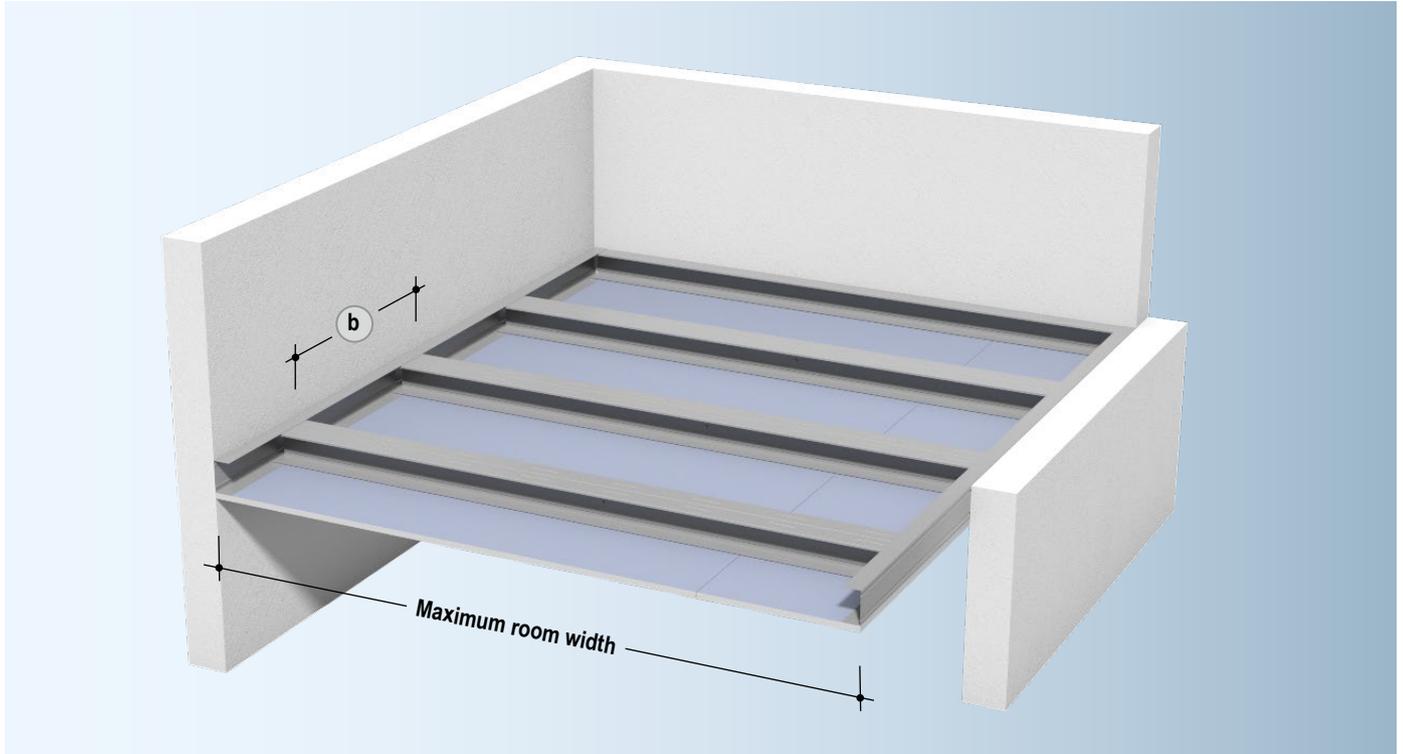
|  | Fire resistance class |            | Cladding (lateral application) |                                      |                                |         |               | Furring channel CW/UA profile Z100 |   | Insulation layer Required for fire resistance |                         |                                   |     |
|--|-----------------------|------------|--------------------------------|--------------------------------------|--------------------------------|---------|---------------|------------------------------------|---|---|-------------------------|-----------------------------------|-----|
|  | From below            | From above | Knauf Wallboard (I)            | Knauf Plano fire-resistant board (I) | Knauf fire-resistant board (I) | Diamant | Drystar-Board | Minimum thickness<br>mm            | Maximum spacings<br>b<br>Single profile<br>mm | double stud<br>mm                             | Minimum thickness<br>mm | Min. density<br>kg/m <sup>3</sup> |     |
| <b>D131.de Free-Spanning Ceiling</b>   |                       |            |                                |                                      |                                |         |               |                                    |   |   |                         |                                   |     |
| <br>e.g. CW single profile   | -                     | -          | •                              |                                      |                                |         |               | 12.5                               | 500   | 500   |                         |                                   |     |
|  |                       |            |                                |                                      |                                | •       |               |                                    | 12.5  | -   |                         |                                   | 500 |
| <br>e.g. CW double profile | -                     | -          |                                |                                      |                                |         | •             | 12.5                               | 500   | 500   | -                       |                                   |     |
|  |                       |            |                                |                                      |                                | •       |               |                                    | 15  | -   |                         |                                   | 500 |
|  |                       |            |                                |                                      |                                | •       |               |                                    |   | 2x 12.5                                       |                         |                                   | -   |

(I) Gypsum core special impregnation

|              |  |
|--------------|--|
| <b>Notes</b> | Observe notes from page 100.   |
|              | For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de. |

### Maximum room widths

#### D131.de Free-spanning ceiling



Without fire resistance, metal grid, free-spanning, single profile

| Knauf profiles                                    | Maximum room width <sup>1)</sup> |                               |
|---|----------------------------------|-------------------------------|
|   | Knauf Wallboard<br>12.5 mm<br>m  | Drystar-Board<br>12.5 mm<br>m |
| <b>Knauf CW single profile Metal gauge 0.6 mm</b> |                                  |                               |
| CW 50   | 2.50                             | 2.45                          |
| CW 75   | 3.15                             | 3.05                          |
| CW 100  | 3.65                             | 3.55                          |
| CW 125  | 4.15                             | 4.05                          |
| CW 150  | 4.60                             | 4.45                          |
| <b>Knauf UA single profile Metal gauge 2.0 mm</b> |                                  |                               |
| UA 50   | 3.00                             | 2.90                          |
| UA 75   | 3.70                             | 3.60                          |
| UA 100  | 4.35                             | 4.25                          |
| UA 125  | 4.95                             | 4.85                          |
| UA 150  | 5.45                             | 5.35                          |

Without fire resistance, metal grid, free-spanning, double profile

| Knauf profiles   | Maximum room width <sup>1)</sup> |                    |                    |                    |                               |
|--|----------------------------------|--------------------|--------------------|--------------------|-------------------------------|
|  | Knauf Wallboard<br>12.5 mm<br>m  | Diamant            |                    |                    | Drystar-Board<br>12.5 mm<br>m |
|  |                                  | 12.5 mm<br>m       | 15 mm<br>m         | 2x 12.5 mm<br>m    |                               |
| <b>Knauf CW double stud profile Metal gauge 0.6 mm</b> |                                  |                    |                    |                    |                               |
| 2x CW 50   | 2.90                             | 2.75               | 2.65               | 2.40               | 2.80                          |
| 2x CW 75   | 3.60                             | 3.45               | 3.35               | 3.05               | 3.50                          |
| 2x CW 100  | 4.25                             | 4.05               | 3.90               | 3.55               | 4.10                          |
| 2x CW 125  | 4.80                             | 4.55               | 4.40               | 4.00               | 4.65                          |
| 2x CW 150  | 5.30                             | 5.05               | 4.90               | 4.45               | 5.15                          |
| <b>Knauf UA double stud profile Metal gauge 2.0 mm</b> |                                  |                    |                    |                    |                               |
| 2x UA 50   | 3.35                             | 3.25               | 3.15               | 2.90               | 3.30                          |
| 2x UA 75   | 4.15                             | 4.00               | 3.90               | 3.60               | 4.05                          |
| 2x UA 100  | 4.85                             | 4.70               | 4.60               | 4.25 <sup>2)</sup> | 4.75                          |
| 2x UA 125  | 5.45                             | 5.30               | 5.15 <sup>2)</sup> | 4.80 <sup>2)</sup> | 5.35                          |
| 2x UA 150  | 6.00 <sup>2)</sup>               | 5.85 <sup>2)</sup> | 5.70 <sup>2)</sup> | 5.35 <sup>3)</sup> | 5.90 <sup>2)</sup>            |

- 1) Max. room widths: Including additional loads ( $0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$ ) for sound insulation layers or fixing loads
- 2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:  
 $\geq 18 \text{ mm}$  Knauf Boards /  $\geq 15 \text{ mm}$  Diamant
- 3) Fixing plate with flanking Metal Stud Partitions on the side of the supporting connection necessary.  
Max. perimeter runner fastening spacing  $\leq 312.5 \text{ mm}$ .

|              |  |
|--------------|--|
| <b>Notes</b> | Free-spanning ceiling profiles may not be joined or extended. (Larger room widths using centre suspension possible). |
|              | Observe notes from page 100.   |
|              | For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.           |

### D131.de Fire protection F30 solely from below

| Requirements on the basic ceiling for fire exposure                                      | Fire resistance class |            | Cladding (lateral application) |                                      |                                |         |                            | Furring channel CW/UA double profile Z100 | Insulation layer<br>Required for fire resistance |                                    |                         |
|--|-----------------------|------------|--------------------------------|--------------------------------------|--------------------------------|---------|----------------------------|---|--|------------------------------------|-------------------------|
|  | From below            | From above | Knauf Wallboard (I)            | Knauf Plano fire-resistant board (I) | Knauf fire-resistant board (I) | Diamant | Drystar-Board              |   | Minimum thickness<br>mm                          | Maximum spacings<br>mm<br><b>b</b> | Minimum thickness<br>mm |
| <b>From below</b><br>No fire resistance requirements for basic ceiling/roof construction |                       |            |                                |                                      |                                |         |                            |   |  |                                    |                         |
| <b>D131.de Free-spanning ceiling</b>   |                       |            |                                |                                      |                                |         |                            |   |  |                                    |                         |
|  | F30                   | -          |                                | •                                    |                                |         | 18                         | 625                                       | mineral wool <b>G</b><br>40                      | -                                  |                         |
|  |                       |            |                                | •                                    |                                |         | 18                         | 625                                       |  |                                    |                         |
|  |                       |            |                                | •                                    |                                |         | 2x 12.5                    | 500                                       | Without<br>or<br>mineral wool <b>G</b>           |                                    |                         |
|  |                       |            |                                | •                                    |                                |         | Solid Board (I)<br>2x 12.5 | 500                                       |  |                                    |                         |

(I) Gypsum core special impregnation

### Permissible wall connections

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

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

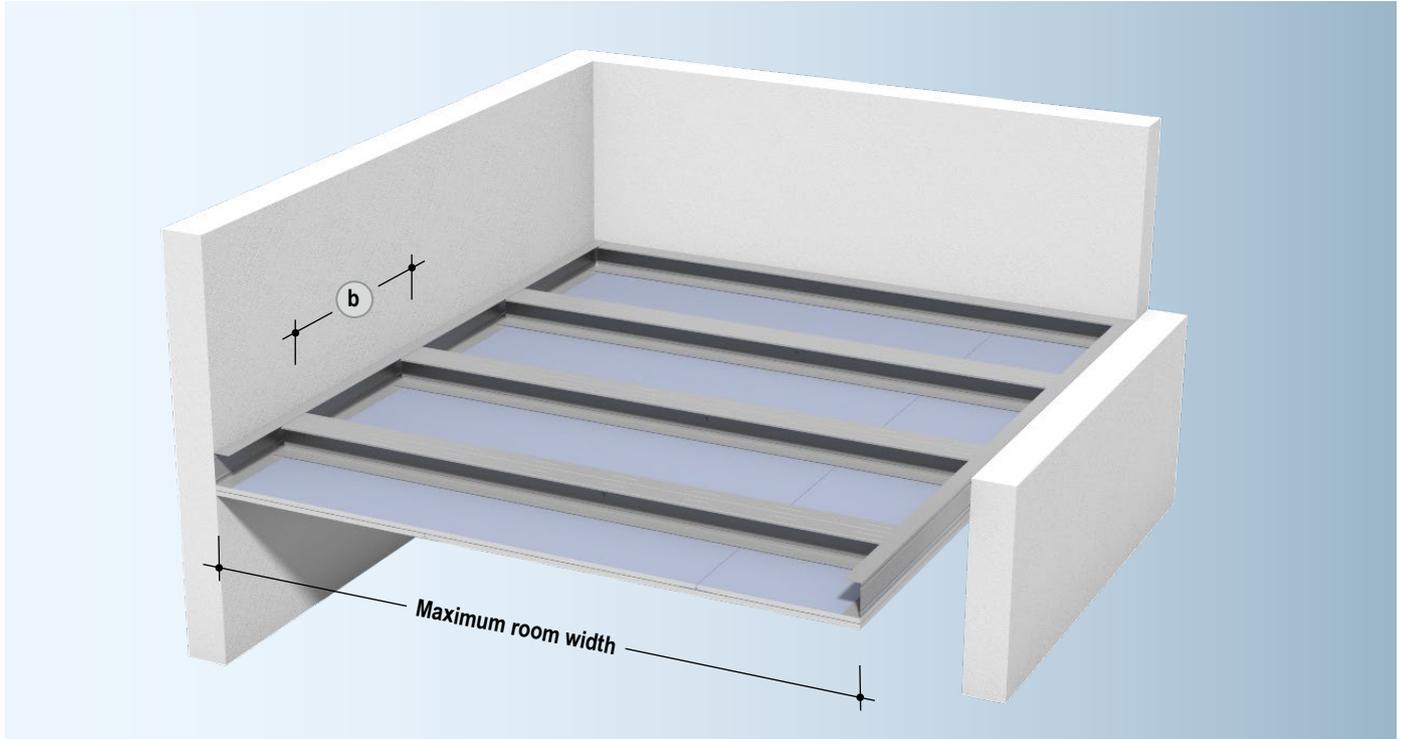
- Due to F30 configuration solely from below  
Prior consultation in acc. to page 100 is recommended.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

**Maximum room widths**  
D131.de Free-spanning ceiling



**F30 solely from below** Metal grid – free-spanning

| Knauf profiles   | Maximum room width <sup>1)</sup> |  |                    |                    |
|--|----------------------------------|--|--------------------|--------------------|
|  | Knauf Piano fire-resistant board | Knauf Feuerschutzplatte fire-resistant board | Diamant            |                    |
|  | 2x 12.5 mm<br>m                  | 18 mm<br>m                                   | 18 mm<br>m         | 2x 12.5 mm<br>m    |
| <b>Knauf CW double stud profile</b> Metal gauge 0.6 mm |                                  |  |                    |                    |
| 2x CW 50   | 2.50                             | 2.55   | 2.45               | 2.40               |
| 2x CW 75   | 3.15                             | 3.15   | 3.05               | 3.05               |
| 2x CW 100  | 3.65                             | 3.70   | 3.60               | 3.55               |
| 2x CW 125  | 4.15                             | 4.20   | 4.10               | 4.00               |
| 2x CW 150  | 4.60                             | 4.65   | 4.50               | 4.45               |
| <b>Knauf UA double stud profile</b> Metal gauge 2.0 mm |                                  |  |                    |                    |
| 2x UA 50   | 3.00                             | 3.00   | 2.95               | 2.90               |
| 2x UA 75   | 3.70                             | 3.75   | 3.65               | 3.60               |
| 2x UA 100  | 4.35 <sup>2)</sup>               | 4.40   | 4.30               | 4.25 <sup>2)</sup> |
| 2x UA 125  | 4.95 <sup>2)</sup>               | 5.00   | 4.85 <sup>2)</sup> | 4.80 <sup>2)</sup> |
| 2x UA 150  | 5.45 <sup>2)</sup>               | 5.50 <sup>2)</sup>                           | 5.40 <sup>2)</sup> | 5.35 <sup>2)</sup> |

- 1) Max. room widths: Including additional loads (0.03 kN/m<sup>2</sup> = 3 kg/m<sup>2</sup>) for insulation layers or fixing loads required for fire protection and/or sound insulation
- 2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:  
≥ 18 mm Knauf Boards / ≥ 15 mm Diamant

**plus** Extension of the fire resistance Certificate of Usability  
 ■ Due to F30 configuration solely from below  
 Prior consultation in acc. to page 100 is recommended.

**Notes**  
 Free-spanning ceiling profiles may not be joined or extended. (Larger room widths using centre suspension possible).  
 Observe notes from page 100.  
 For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

W0-I / W1-I  
 W11.de  
 W6.1.de  
 W62.de  
 D11.de  
 D13.de  
 W2-I / W3-I  
 W38.de  
 W68.de  
 D28.de

### D131.de Fire protection F30 solely from below and from above (plenum)

| Requirements on the basic ceiling for fire exposure   | Fire resistance class |            | Cladding (lateral application) |                                      |                                |                     |               | Furring channel CW/UA double profile Z100 | Insulation layer<br>Required for fire resistance  |                  |                   |
|---|-----------------------|------------|--------------------------------|--------------------------------------|--------------------------------|---------------------|---------------|---|---|------------------|-------------------|
|   | From below            | From above | Knauf Wallboard (I)            | Knauf Plano fire-resistant board (I) | Knauf fire-resistant board (I) | Diamant             | Drystar-Board |   | Minimum thickness   | Maximum spacings | Minimum thickness |
| <b>From below</b><br>No fire resistance requirements for basic ceiling/roof construction<br><br><b>From above (Plenum)</b><br>Raw ceiling must have same fire resistance class as suspended ceiling | For fire exposure     |            |                                |                                      |                                |                     |               | mm  | mm  | mm               | kg/m <sup>3</sup> |
| <b>D131.de Free-spanning ceiling</b>  |                       |            |                                |                                      |                                |                     |               |   |   |                  |                   |
| Covering strips<br><b>25 mm Solid Board</b><br><br>   | F30                   | F30        |                                | •                                    |                                |                     | 18            | 625                                       | Mineral wool <b>S</b><br>60 30<br>Alternative<br>Mineral wool <b>S</b> <b>plus</b><br>40 40 |                  |                   |
|   |                       |            |                                | •                                    |                                | 18                  | 625           |   |   |                  |                   |
|   |                       |            |                                | •                                    |                                | 2x 12.5 <b>plus</b> | 500           |   |   |                  |                   |
|   |                       |            |                                | •                                    |                                | 2x 12.5 <b>plus</b> | 500           |   |   |                  |                   |

(I) Gypsum core special impregnation

#### Permissible wall connections

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

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

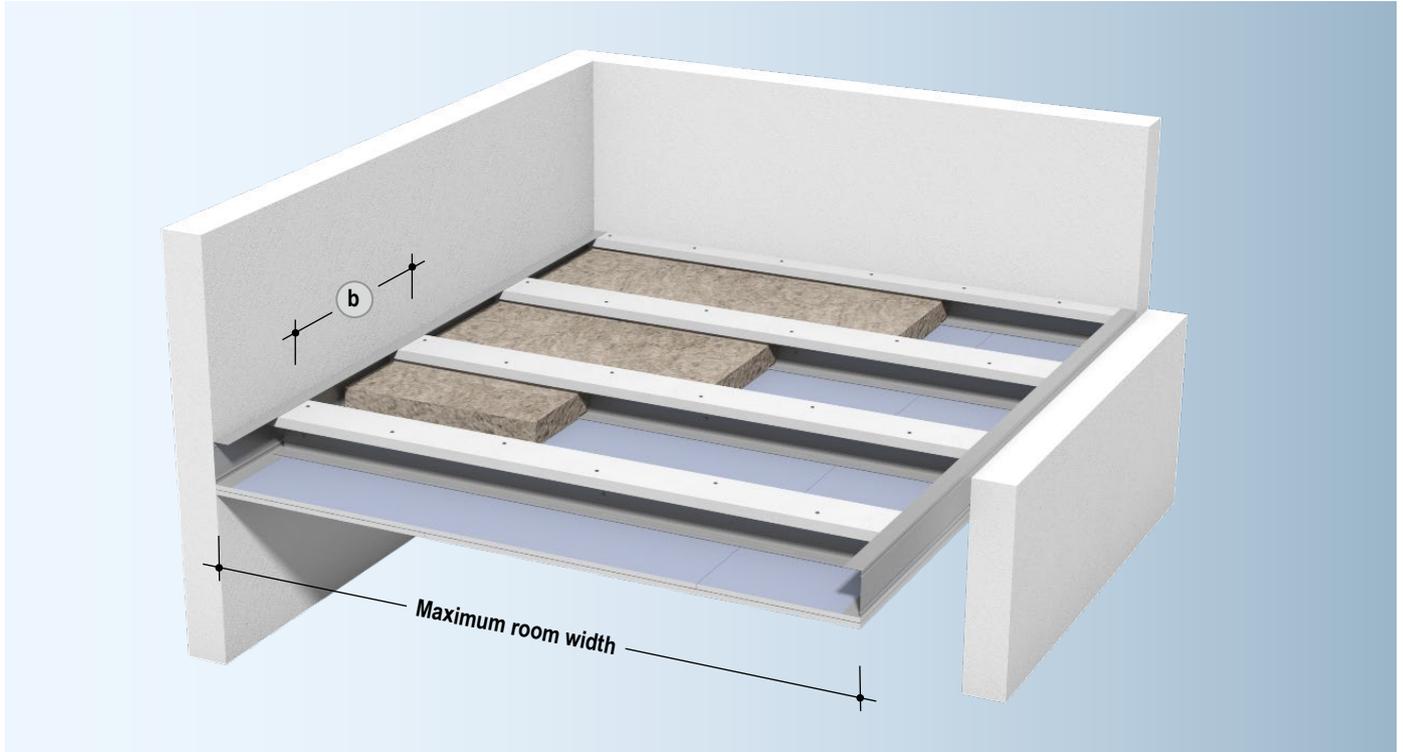
- For cladding with 2x 12.5 mm
  - Connection to lightweight partition
  - Connection to walls with shadow gap
  - When using mineral wool **S** thickness 40 mm, density 40 kg/m<sup>3</sup>
- Prior consultation in acc. to page 100 is recommended.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

Maximum room widths  
D131.de Free-spanning ceiling



F30 solely from below and from above, metal grid, free-spanning

| Knauf profiles   | Maximum room width <sup>1)</sup> |      | Knauf Feuerschutzplatte fire-resistant board |             | Diamant            |                    |             |
|--|----------------------------------|------|--|-------------|--------------------|--------------------|-------------|
|  | Knauf Piano fire-resistant board |      | 18 mm  | 18 mm       | 18 mm              | 18 mm              | 2x12.5 mm   |
|  | 2x 12.5 mm                       |      | m  | m           | m                  | m                  | m           |
|  |                                  |      | <b>plus</b>                                  | <b>plus</b> |                    | <b>plus</b>        | <b>plus</b> |
| <b>Knauf CW double profile</b> Metal gauge 0.6 mm      |                                  |      |  |             |                    |                    |             |
| 2x CW 50   | 2.30                             | –    | 2.35   | –           | 2.20               | 2.15               |             |
| 2x CW 75   | 2.90                             | 3.00 | 3.00   | 2.80        | 2.80               | 2.75               |             |
| 2x CW 100  | 3.45                             | 3.00 | 3.50   | 3.00        | 3.35               | 3.25               |             |
| 2x CW 125  | 3.95 <b>plus</b>                 | 3.00 | 4.05   | 3.00        | 3.85               | 3.75               |             |
| <b>plus Knauf UA double profile</b> Metal gauge 2.0 mm |                                  |      |  |             |                    |                    |             |
| 2x UA 50   | 2.90                             | –    | 2.90   | –           | 2.85               | 2.80               |             |
| 2x UA 75   | 3.55                             | –    | 3.60   | –           | 3.50               | 3.50               |             |
| 2x UA 100  | 4.20 <sup>2)</sup>               | –    | 4.25   | –           | 4.15               | 4.10 <sup>2)</sup> |             |
| 2x UA 125  | 4.80 <sup>2)</sup>               | –    | 4.80 <sup>2)</sup>                           | –           | 4.70 <sup>2)</sup> | 4.65 <sup>3)</sup> |             |

- 1) Max. room widths: Including additional loads (0.03 kN/m<sup>2</sup> = 3 kg/m<sup>2</sup>) for insulation layers or fixing loads required for fire protection and/or sound insulation
- 2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:  
≥ 18 mm Knauf Boards / ≥ 15 mm Diamant
- 3) Fixing plate with flanking Metal Stud Partitions on the side of the supporting connection necessary.  
Max. perimeter runner fastening spacing ≤ 312.5 mm.

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

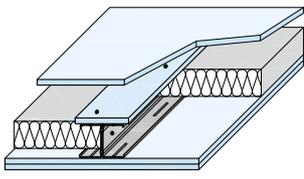
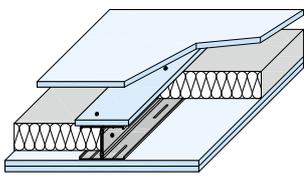
- When the extended maximum room widths are used
- With cladding 2x 12.5 mm
- When UA profiles are used

Prior consultation in acc. to page 100 is recommended.

**Notes**

Free-spanning ceiling profiles may not be joined or extended. (Larger room widths using centre suspension possible).  
Observe notes from page 100.  
For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

### D131.de Fire protection F60 solely from below and from above (plenum)

| Requirements on the basic ceiling for fire exposure   | Fire resistance class |            | Cladding (lateral application) |                                      |                                |         |               | Furring channel CW/UA double profile Z100           | Insulation layer<br>Required for fire resistance |                             |                   |
|---|-----------------------|------------|--------------------------------|--------------------------------------|--------------------------------|---------|---------------|---|--|-----------------------------|-------------------|
|   | From below            | From above | Knauf Wallboard (I)            | Knauf Piano fire-resistant board (I) | Knauf fire-resistant board (I) | Diamant | Drystar-Board |   | Minimum thickness                                | Maximum spacings            | Minimum thickness |
| <b>From below</b><br>No fire resistance requirements for basic ceiling/roof construction<br><br><b>From above (Plenum)</b><br>Raw ceiling must have same fire resistance class as suspended ceiling | For fire exposure     |            |                                |                                      |                                |         |               | Minimum thickness                                   | Maximum spacings<br><b>b</b>                     | Minimum thickness           | Min. density      |
|   |                       |            |                                |                                      |                                |         |               | mm  | mm   | mm                          | kg/m <sup>3</sup> |
| <b>D131.de Free-spanning ceiling</b>  |                       |            |                                |                                      |                                |         |               |   |  |                             |                   |
| Covering strips<br><b>2x 12.5 mm Feuerschutzplatte Knauf Piano fire-resistant board</b><br>                        | F60                   | F60        | •                              |                                      |                                |         |               | 2x 12.5 + 12.5 Additional board layer (cover board) | 500  | Mineral wool <b>S</b><br>50 | 50                |
| Covering strips<br><b>12.5 mm Diamant</b><br>   | F60                   | F60        |                                | •                                    |                                |         |               | 2x 12.5 + 12.5 Additional board layer (cover board) | 500  | Mineral wool <b>S</b><br>50 | 50                |

(I) Gypsum core special impregnation

### Permissible wall connections

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

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

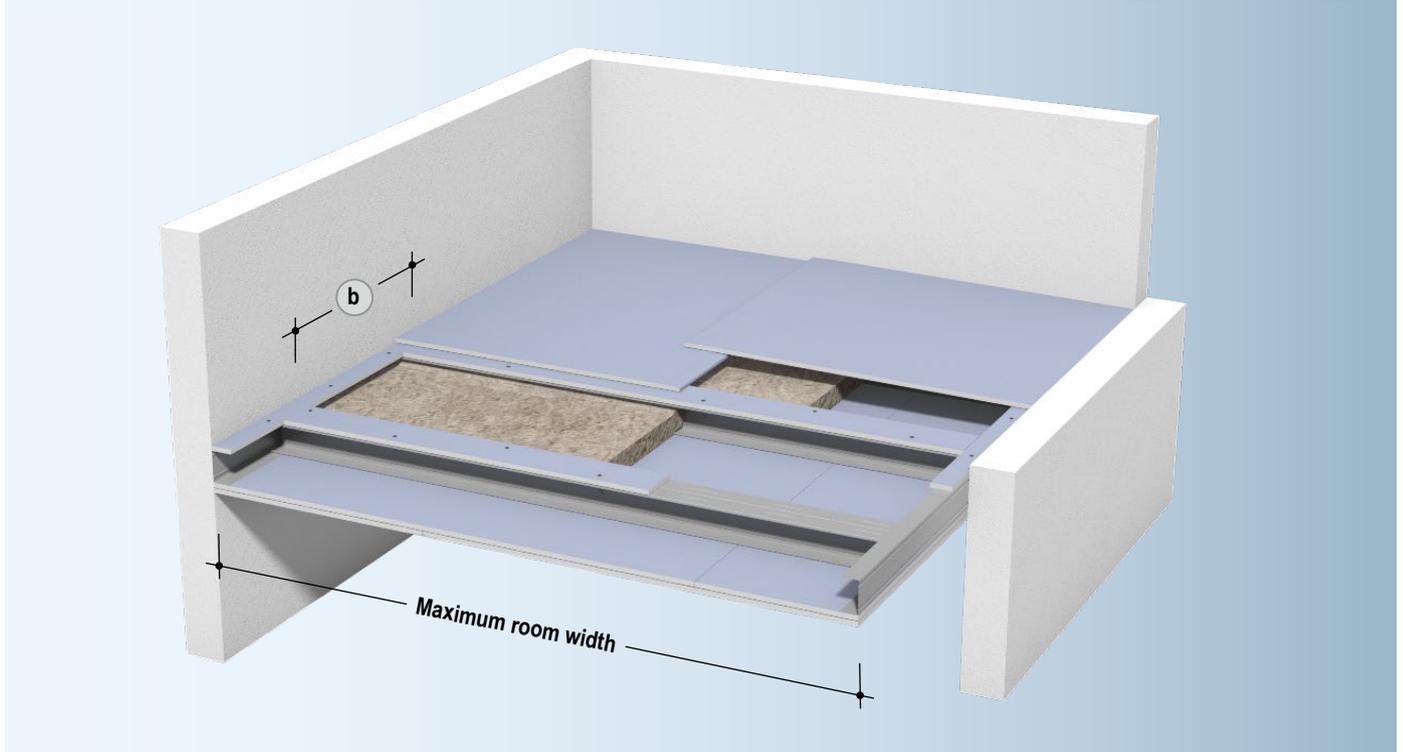
- Connection to lightweight partition
- Prior consultation in acc. to page 100 is recommended.

#### Notes

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

Maximum room widths  
D131.de Free-spanning ceiling



F60 solely from below and from above, metal grid, free-spanning

| Knauf profiles   | Maximum room width <sup>1)</sup>                    |                            |
|--|---|----------------------------|
|  | Knauf Piano fire-resistant board<br>2x 12.5 mm<br>m | Diamant<br>2x 12.5 mm<br>m |
| <b>Knauf CW double profile</b> Metal gauge 0.6 mm  |   |                            |
| 2x CW 50   | 2.25  | 2.20                       |
| 2x CW 75   | 2.85  | 2.75                       |
| 2x CW 100 <span style="background-color: #0070C0; color: white; padding: 2px;">plus</span>   | 3.35  | 3.20 <sup>2)</sup>         |
| 2x CW 125  | 3.80 <sup>2)</sup>                                  | 3.65 <sup>2)</sup>         |
| 2x CW 150  | 4.20 <sup>2)</sup>                                  | 4.05 <sup>2)</sup>         |
| <span style="background-color: #0070C0; color: white; padding: 2px;">plus</span> <b>Knauf UA double profile</b> Metal gauge 2.0 mm |   |                            |
| 2x UA 50   | 2.75  | 2.65                       |
| 2x UA 75   | 3.40 <sup>2)</sup>                                  | 3.30 <sup>2)</sup>         |
| 2x UA 100  | 4.05 <sup>2)</sup>                                  | 3.90 <sup>3)</sup>         |
| 2x UA 125  | 4.60 <sup>3)</sup>                                  | 4.45 <sup>3)</sup>         |
| 2x UA 150  | 5.10 <sup>3)</sup>                                  | 4.95 <sup>3)</sup>         |

- 1) Max. room widths: including additional loads ( $0.03 \text{ kN/m}^2 = 3 \text{ kg/m}^2$ ) for insulation layers or fixing loads required for fire protection and/or sound insulation
- 2) Required cladding thickness with flanking Metal Stud Partitions on the side of the supporting connection:  
 $\geq 18 \text{ mm}$  Knauf Boards /  
 $\geq 15 \text{ mm}$  Diamant
- 3) Fixing plate with flanking Metal Stud Partitions on the side of the supporting connection necessary.  
 Max. perimeter runner fastening spacing  $\leq 312.5 \text{ mm}$ .

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

- When used with double stud profiles CW 50 / 75 / 100 / 125
- When UA profiles are used

Prior consultation in acc. to page 100 is recommended.

**Notes**

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

Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Free-Spanning Ceilings D13.de.

W0-I / W1-I  
 W11.de  
 W61.de  
 W62.de  
 D11.de  
 D13.de  
 W2-I / W3-I  
 W38.de  
 W68.de  
 D28.de

### D112.de Metal grid with CD profiles 60/27 / D116.de Metal grid with UA profiles 50/40 + CD profile 60/27

#### Fire resistance F30 in conjunction with basic ceilings of types I to III

(Specifications apply for basic ceiling types I to III)

| See page 80<br>  | Fire resistance class                 | 1 Ceiling lining/suspended ceiling   |                                 |                   |         |                |                          |                        |                                |                      |  |
|--|---------------------------------------|--------------------------------------|---------------------------------|-------------------|---------|----------------|--------------------------|------------------------|--------------------------------|----------------------|--|
|  |                                       | Cladding (lateral application)       |                                 |                   |         | Nominal weight |                          | Furring channel Z100   | Insulation layer In the plenum |                      | Minimum suspension height                      |
|  |                                       | Knauf Piano fire-resistant board (I) | Knauf fire-resistant board (II) | Solid Board (I)   | Diamant | mm             | Without insulation layer | Maximum Axial spacings | Minimum thickness              | Minimum Density      | Basic ceiling lower edge upper edge cladding a |
| Fire resistance From below and from above 1 + 2 + possibly 3   | Basic ceiling type acc. to DIN 4102-4 | D112 .de                             |                                 | D116 .de          |         | mm             | mm                       | kg/m <sup>3</sup>      | mm                             |                      |  |
| I  | II                                    | III                                  | kg/m <sup>2</sup>               | kg/m <sup>2</sup> | mm      |                |                          |                        |                                |                      |  |
| <b>D112.de / D116.de Board ceilings, metal grid with CD profiles 60/27 / UA profiles 50/40 with CD profile 60/27</b> |                                       |                                      |                                 |                   |         |                |                          |                        |                                |                      |  |
|  | F30                                   |                                      |                                 |                   | •       | 15             | 15.5                     | 18.3                   | 500                            | Permissible <b>G</b> | 40   |
|  |                                       |                                      |                                 |                   | •       | 15             | 17.9                     | 20.7                   |                                | Permissible <b>G</b> | 40   |
|  |                                       |                                      |                                 |                   | •       | 20             | 19.9                     | 22.7                   |                                | Not permissible      | 15   |
| D112.de Furring channel/Hat-shaped channel<br>or<br>   | F30                                   |                                      |                                 |                   | •       | 12.5           | 13.3                     | 16.1                   | 500                            | Not permissible      | 40   |
|  |                                       |                                      |                                 |                   | •       | 12.5           | 15.3                     | 18.1                   |                                | Not permissible      | 40   |
|  |                                       |                                      |                                 |                   | •       | 15             | 15.5                     | 18.3                   |                                | <b>G</b>             | 40   |
| D112.de Carrying channel and furring channel CD<br>or<br>  | F30                                   |                                      |                                 |                   | •       | 15             | 17.9                     | 20.7                   | 500                            | <b>G</b>             | 40   |
|  |                                       |                                      |                                 |                   | •       | 20             | 19.9                     | 22.7                   |                                | Not permissible      | 15   |
|  |                                       |                                      |                                 |                   | •       | 12.5           | 13.3                     | 16.1                   |                                | Not permissible      | 40   |
| D116.de Carrying and furring channel UA+CD   | F30                                   |                                      |                                 |                   | •       | 12.5           | 15.3                     | 18.1                   | 500                            | Not permissible      | 40   |
|  |                                       |                                      |                                 |                   | •       | 12.5           | 13.3                     | 16.1                   |                                | <b>G</b>             | 80   |
|  |                                       |                                      |                                 |                   | •       | 12.5           | 15.3                     | 18.1                   |                                | <b>G</b>             | 80   |
|  |                                       |                                      | •                               | 15                | 15.5    | 18.3           | <b>G</b>                 | 40                     |                                |                      |  |
|  |                                       |                                      | •                               | 15                | 17.9    | 20.7           | <b>G</b>                 | 40                     |                                |                      |  |
|  |                                       |                                      | •                               | 20                | 19.9    | 22.7           | Not permissible          | 15                     |                                |                      |  |

(I) Gypsum core special impregnation

**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

#### Notes

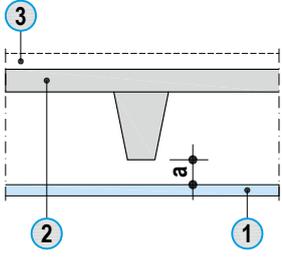
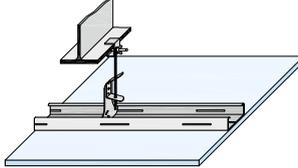
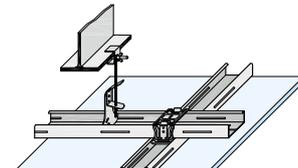
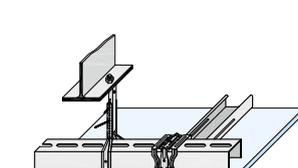
Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

D112.de Metal grid with CD profiles 60/27 / D116.de Metal grid with UA profiles 50/40 + CD profile 60/27

Fire resistance F60 and F90 in conjunction with basic ceilings of types I to III

(Specifications apply for basic ceiling types I to III)

| See page 80<br>   | Fire resistance class                 | 1 Ceiling lining/suspended ceiling   |                                |                 |                   |                   |                          |                        |                                |  |                           |
|--|---------------------------------------|--------------------------------------|--------------------------------|-----------------|-------------------|-------------------|--------------------------|------------------------|--------------------------------|--|---------------------------|
|  |                                       | Cladding (lateral application)       |                                |                 |                   | Nominal weight    |                          | Furring channel Z100   | Insulation layer In the plenum |  | Minimum suspension height |
|  |                                       | Knauf Piano fire-resistant board (I) | Knauf fire-resistant board (I) | Solid Board (I) | Diamant           | mm                | Without insulation layer | Maximum Axial spacings | Minimum thickness              | Minimum Density                                |                           |
| Fire resistance From below and from above 1 + 2 + possibly 3   | Basic ceiling type acc. to DIN 4102-4 |                                      |                                | mm              | kg/m <sup>2</sup> | kg/m <sup>2</sup> | mm                       | mm                     | kg/m <sup>3</sup>              | Basic ceiling lower edge upper edge cladding a |                           |
| D112.de / D116.de Board ceilings, metal grid with CD profiles 60/27 / UA profiles 50/40 with CD profile 60/27                                |                                       |                                      |                                |                 |                   |                   |                          |                        |                                |  |                           |
| <br>D112.de Furring channel/Hat-shaped channel             | F60                                   |                                      |                                |                 | •                 | 2x 15             | 28.7                     | 31.5                   | 500                            | Not permissible                                | 15                        |
|  |                                       |                                      |                                |                 | •                 | 2x 15             | 33.5                     | 36.3                   |                                | Not permissible                                | 15                        |
| or<br><br>D112.de Carrying channel and furring channel CD | F60                                   |                                      |                                |                 | •                 | 2x 15             | 28.7                     | 31.5                   | 500                            | Not permissible                                | 15                        |
|  |                                       |                                      |                                |                 | •                 | 2x 15             | 33.5                     | 36.3                   |                                | Not permissible                                | 15                        |
| or<br><br>D112.de Carrying channel and furring channel CD | F60                                   |                                      |                                |                 | •                 | 12.5              | 13.6                     | 16.4                   | 400                            | Not permissible                                | 80                        |
|  |                                       |                                      |                                |                 | •                 | 12.5              | 15.6                     | 18.4                   |                                | Not permissible                                | 80                        |
| or<br><br>D112.de Carrying channel and furring channel CD | F60                                   |                                      |                                |                 | •                 | 15                | 15.8                     | 18.6                   | 400                            | Not permissible                                | 40                        |
|  |                                       |                                      |                                |                 | •                 | 15                | 18.2                     | 21.0                   |                                | Not permissible                                | 40                        |
| or<br><br>D112.de Carrying channel and furring channel CD | F60                                   |                                      |                                |                 | •                 | 15                | 15.8                     | 18.6                   | 400                            | S  | 80                        |
|  |                                       |                                      |                                |                 | •                 | 15                | 18.2                     | 21.0                   |                                | S  | 80                        |
| <br>D116.de Carrying and furring channel UA+CD            | F90                                   |                                      |                                |                 | •                 | 20                | 20.2                     | 23.0                   | 500                            | Not permissible                                | 15                        |
|  |                                       |                                      |                                |                 | •                 | 15                | 15.5                     | 18.3                   |                                | Not permissible                                | 80                        |
|  |                                       |                                      |                                |                 | •                 | 15                | 17.9                     | 20.7                   | 500                            | Not permissible                                | 80                        |

(I) Gypsum core special impregnation

**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

Notes

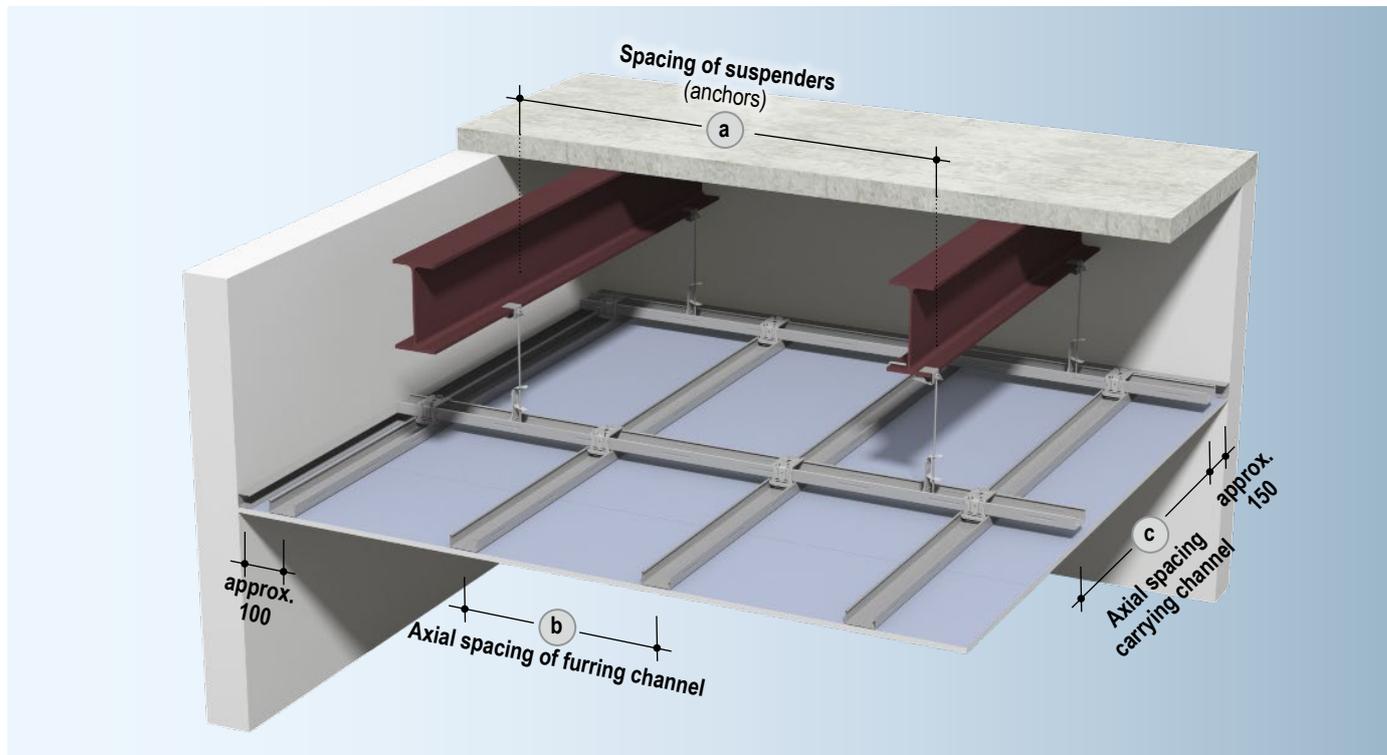
Observe notes from page 100.

For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

### Maximum grid spacings

D112.de Board ceiling, metal grid with CD profiles 60/27

Dimensions in mm



### Determination of load class

| Load class<br>kN/m <sup>2</sup> | Nominal weight +<br>weight of additional loads<br>kg/m <sup>2</sup> |
|---------------------------------|---|
| Up to 0.65                      | 60  |
| Up to 0.50                      | 50  |
| Up to 0.40                      | 40  |
| Up to 0.30                      | 30  |
| Up to 0.15                      | 20  |
|                                 | 10  |

### Fire resistance in conjunction with basic ceilings of types I to III Carrying and furring channel

| Axial spacings<br>carrying<br>channel c | Suspender spacings a            |            |                          |                          |
|---|---------------------------------|------------|--------------------------|--------------------------|
|   | Load class in kN/m <sup>2</sup> |            |                          |                          |
|   | Up to 0.15                      | Up to 0.30 | Up to 0.40 <sup>1)</sup> | Up to 0.50 <sup>1)</sup> |
| 500                                     | 1200                            | 950        | 850                      | 800                      |
| 600                                     | 1100                            | 900        | 800                      | 700                      |
| 700                                     | 1000                            | 850        | 750                      | 700                      |
| 800                                     | 1000                            | 800        | –                        | –                        |
| 900                                     | 1000                            | –          | –                        | –                        |

### Fire resistance in conjunction with basic ceilings of types I to III Furring/hat-shaped channel only

| Axial spacings<br>furring<br>channel b | Suspender spacings a            |            |                          |                          |
|--|---------------------------------|------------|--------------------------|--------------------------|
|  | Load class in kN/m <sup>2</sup> |            |                          |                          |
|  | Up to 0.15                      | Up to 0.30 | Up to 0.40 <sup>1)</sup> | Up to 0.50 <sup>1)</sup> |
| 400                                    | 1400                            | 1150       | 1050                     | 1000                     |
| 500                                    | 1300                            | 1050       | 950                      | 900                      |

1) Use suspenders of load carrying capacity class 0.40 kN

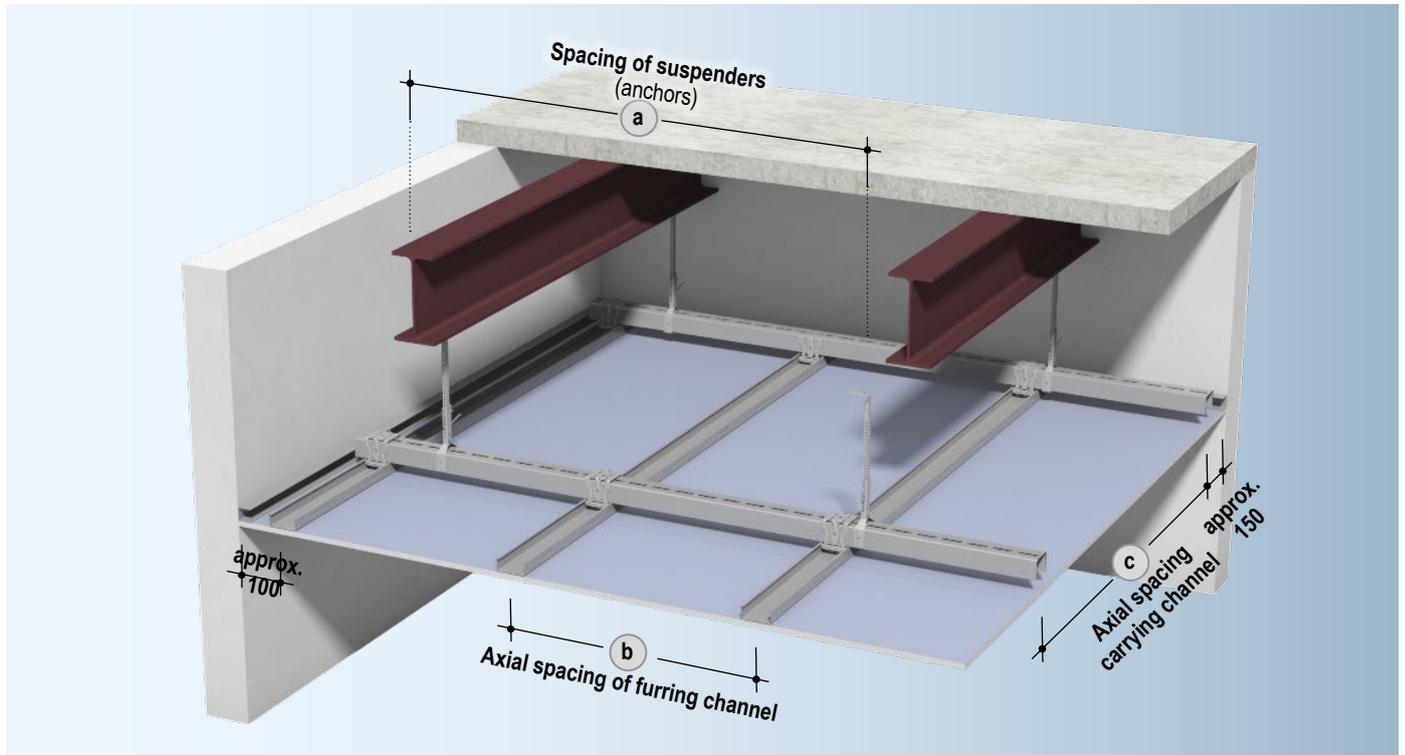
**plus** Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

**Notes** Observe notes from page 100.  
For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

Maximum grid spacings

Dimensions in mm

D116.de Metal Grid with UA Profiles 50/40 + CD Profile 60/27 large-span



Determination of load class

| Load class<br>kN/m <sup>2</sup> | Nominal weight +<br>weight of additional loads<br>kg/m <sup>2</sup> |
|---------------------------------|---|
| Up to 0.65                      | 60  |
| Up to 0.50                      | 50  |
| Up to 0.40                      | 40  |
| Up to 0.30                      | 30  |
| Up to 0.20                      | 20  |
| Up to 0.15                      | 10  |

Fire resistance in conjunction with basic ceilings of types I to III carrying and furring channel UA + CD

| Carrying channel spacings<br>c | Spacings of suspenders/anchors a<br>Nonius stirrup 0.40 kN |            |            |            |            |
|--------------------------------|--|------------|------------|------------|------------|
|                                | Load class in kN/m <sup>2</sup>                            |            |            |            |            |
|                                | Up to 0.15   | Up to 0.30 | Up to 0.40 | Up to 0.50 | Up to 0.65 |
| 500                            | 1400   | 1150       | 1000       | 950        | 850        |
| 600                            | 1350   | 1050       | 950        | 900        | 800        |
| 700                            | 1250   | 1000       | 900        | 850        | 750        |
| 800                            | 1200   | 950        | 850        | 800        | –          |
| 900                            | 1150   | 900        | 800        | –          | –          |
| 1000                           | 1100   | 900        | –          | –          | –          |



Extension of the fire resistance Certificate of Usability  
Prior consultation in acc. to page 100 is recommended.

Notes

Observe notes from page 100.

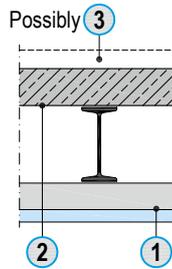
For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de.

### Fire resistance effect of board ceiling systems in conjunction with basic ceilings of types I to III

#### Division of the partial construction elements with demands on the fire resistance

With respect to the fire resistance, the entire ceiling construction acts on the partial construction elements ceiling lining/suspended ceiling, basic ceiling and possibly on floor constructions.

- ③ Floor construction rated for exposure to fire from above (ceiling top) in accordance with the folder "Fire resistance with Knauf", chapter "Floor systems" (German only)
- ② Basic ceilings of type I to III
- ① Ceiling linings / suspended ceilings acc. to system variants table of the Knauf systems



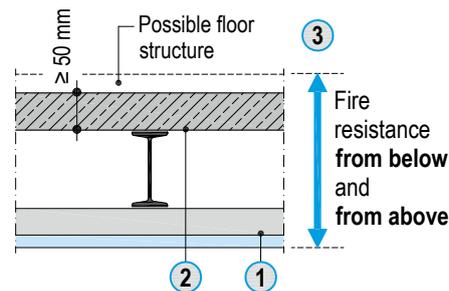
#### Basic ceilings of type I to III

| ② Basic ceilings       | System selection  |
|------------------------|---|
| <b>Ceiling type I</b>  |   |
|                        | Ceilings with exposed steel beams in the plenum area with a U/A ratio $\leq 300 \text{ m}^{-1}$ and an upper cover of pumice concrete hollow core planks or aerated concrete slabs  |
|                        | Ribbed concrete cover with filler joists made of light concrete or bricks   |
|                        |   |
|                        | Reinforced concrete joist ceilings with filler joists made of light concrete or bricks  |
|                        | Reinforced concrete ceiling in conjunction with steel beams embedded in concrete  |
| <b>Ceiling type II</b> |   |
|                        | Ceilings with exposed steel beams in the plenum area with a U/A ratio $\leq 300 \text{ m}^{-1}$ and an upper cover of in-situ concrete or prefabricated boards with structurally active in-situ concrete layer or prefabricated parts made of hollow core planks made of steel or reinforced and prestressed concrete |
|                        |   |

| ② Basic ceilings        | System selection  |
|-------------------------|---|
| <b>Ceiling type III</b> |   |
|                         | Reinforced concrete or prestressed concrete slabs made of standard concrete               |
|                         | Reinforced concrete joist ceilings with beams and filler joists made of standard concrete |
|                         | Two-way flat slab ceiling and dropped ceiling made of standard concrete                   |
|                         | Reinforced concrete or prestressed concrete hollow core slabs                             |
|                         | Ribbed concrete cover without filler joists or with filler joists made of normal concrete |

Load-bearing ceilings subject to fire resistance requirements must generally withstand exposure to fire from the bottom of the ceiling as well as from the top of the top of the ceiling.

If the basic ceiling alone does not comply with the required fire resistance class, an additional suspended ceiling / ceiling lining made of Knauf boards in conjunction with a basic ceiling can provide the required fire resistance. For a rating from above, additional measures may be necessary, e.g. classified screeds acc. to the folder "Brandschutz mit Knauf - Fire protection with Knauf", chapter "Bodensysteme - Floor systems" (German only).



The specifications of the German National Technical Test Certificate (AbP) assume, among other factors, that in the plenum area between basic ceiling and suspended ceiling, that no combustible components are located with the exception of components that are elements of the suspended ceiling construction. Combustible cable insulation and freely exposed not easily flammable materials, which are as evenly distributed as possible, are considered to be quiet safe if the fire load is  $\leq 7 \text{ kWh/m}^2$ .

|              |  |
|--------------|--|
| <b>Notes</b> | Observe notes from page 100.   |
|              | For further information on planning and design, see system data sheet Knauf Board Ceilings D11.de. |



## Water action classes W2-I and W3-I

### Metal stud partition systems with cement boards

W381.de Metal stud partition, single metal stud frame, single-layer cladding

W382.de Metal stud partition, single metal stud frame, double-layer cladding

W383.de Metal stud partition, single metal stud frame, single-layer mixed cladding

W384.de Metal stud partition, single metal stud frame, double-layer mixed cladding

W385.de Metal stud partition, double metal stud frame, single/double-layer / mixed cladding

W386.de Metal stud partition, double metal stud frame, single/double-layer / mixed cladding

### W381.de Single metal stud partition, single-layer cladding

### W382.de Single metal stud frame, double-layer cladding

| Knauf System                        | Fire resistance class | Cladding per wall side<br>AQUAPANEL Cement Board Indoor | Minimum thickness<br>t<br>mm | Weight<br>Without Insulation layer<br>approx.<br>kg/m <sup>2</sup> | Wall thickness<br>D<br>mm | Profile<br>Knauf CW<br>C3/C5M<br>Cavity<br>h<br>mm | Sound insulation                            |                      |   |
|-------------------------------------|-----------------------|---|------------------------------|--|---------------------------|--|---|----------------------|---|
|                                     |                       |   |                              |  |                           |  | Insulation layer<br>Minimum thickness<br>mm | R <sub>w</sub><br>dB | Sound reduction index<br>R <sub>w,R</sub><br>dB |
| <b>W381.de Metal stud partition</b> |                       | Single metal stud frame, single-layer cladding          |                              |  |                           |  |   |                      |   |
|                                     | F30                   | ● 12.5  | 24                           | 75   | 50                        | 50   | 43  | 41                   |   |
|                                     |                       |   |                              | 100  | 75                        | 50   | ≥ 43  | ≥ 41                 |   |
|                                     |                       |   |                              | 125  | 100                       | 50   | ≥ 43  | ≥ 41                 |   |
| <b>W382.de Metal stud partition</b> |                       | Single metal stud frame, double-layer cladding          |                              |  |                           |  |   |                      |   |
|                                     | F90                   | ● 2x 12.5   | 46                           | 100  | 50                        | 40   | 55.0  | 53                   |   |
|                                     |                       |   |                              | 125  | 75                        | 60   | 57.2  | 55                   |   |
|                                     |                       |   |                              | 150  | 100                       | 80   | 60.7  | 58                   |   |

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

#### With fire resistance:

Back the upper and lower as well as the lateral perimeter profiles with mineral wool insulation strips **S**.

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

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 50 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design see Brochure Wet Room Solutions NA.de (German only). |

### Wall heights

**W381.de Metal stud partition, single metal stud frame, single-layer cladding**



**W382.de Metal stud partition, single metal stud frame, double-layer cladding**



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br><b>a</b><br>mm | W381.de<br>AQUAPANEL Cement Board Indoor 12.5 mm |                           |                           | W382.de<br>AQUAPANEL Cement Board Indoor 2x 12.5 mm |                           |                           |
|--------------------|------------------------------------|--|---------------------------|---------------------------|---|---------------------------|---------------------------|
|                    |                                    | Without fire resistance                          | With fire resistance      |                           | Without fire resistance                             | With fire resistance      |                           |
|                    |                                    |  | Without insulation layer  | Mineral wool              |   | Without insulation layer  | Mineral wool              |
| Metal gauge 0.6 mm |                                    | m  | m                         | G                         | m   | m                         | G                         |
| CW 50              | 625                                | 2.85 <sup>1)</sup> / –                           | 2.85 <sup>1)</sup> / –    | 2.85 <sup>1)</sup> / –    | 3.30 <sup>1)</sup> / 2.40                           | 3.30 <sup>1)</sup> / 2.40 | 3.00 <sup>1)</sup> / 2.40 |
|                    | 417                                | 3.50 <sup>1)</sup> / 2.90                        | 3.50 <sup>1)</sup> / 2.90 | 3.00 <sup>1)</sup> / 2.90 | 4.00  | 4.00                      | 3.00                      |
|                    | 312.5                              | 4.00   | 4.00                      | 3.00                      | 4.00  | 4.00                      | 3.00                      |
| CW 75              | 625                                | 4.00   | 4.00                      | 4.00                      | 4.00  | 4.00                      | 4.00                      |
|                    | 417                                | 4.00   | 4.00                      | 4.00                      | 4.55  | 4.55                      | 4.55                      |
|                    | 312.5                              | 4.55   | 4.55                      | 4.55                      | 5.45  | 5.00                      | 5.00                      |
| CW 100             | 625                                | 4.45   | 4.45                      | 4.45                      | 5.10  | 5.00                      | 5.00                      |
|                    | 417                                | 5.45   | 5.00                      | 5.00                      | 6.70  | 5.00                      | 5.00                      |
|                    | 312.5                              | 6.30   | 5.00                      | 5.00                      | 7.90  | 5.00                      | 5.00                      |
| CW 125             | 625                                | 5.80   | 5.00                      | 5.00                      | 7.10  | 5.00                      | 5.00                      |
|                    | 417                                | 7.20   | 5.00                      | 5.00                      | 8.00  | 5.00                      | 5.00                      |
|                    | 312.5                              | 8.00   | 5.00                      | 5.00                      | 8.00  | 5.00                      | 5.00                      |
| CW 150             | 625                                | 7.40   | 5.00                      | 5.00                      | 8.00  | 5.00                      | 5.00                      |
|                    | 417                                | 8.00   | 5.00                      | 5.00                      | 8.00  | 5.00                      | 5.00                      |
|                    | 312.5                              | 8.00   | 5.00                      | 5.00                      | 8.00  | 5.00                      | 5.00                      |

1) only for installation zone 1

#### Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W0-I / W1-I  
 W11.de  
 W6.1.de  
 W6.1.de  
 W6.2.de  
 W6.2.de  
 D11.de  
 D13.de  
 W2-I / W3-I  
 W38.de  
 W68.de  
 D28.de

### W383.de Single metal stud partition, single-layer mixed cladding

### W384.de Single metal stud partition, double-layer mixed cladding

| Knauf System                         | Fire resistance class | Cladding Partition side 1     |                   | Partition side 2              |  |         | Weight   | Wall thickness | Profile Knauf CW C3/C5M | Sound insulation  |                   |                       |
|--------------------------------------|-----------------------|-------------------------------|-------------------|-------------------------------|--|---------|--|----------------|-------------------------|-------------------|-------------------|-----------------------|
|                                      |                       | AQUAPANEL Cement Board Indoor | Minimum thickness | AQUAPANEL Cement Board Indoor | Knauf Piano fire-resistant board (I) <sup>1)</sup> | Diamant |  |                |                         | Minimum thickness | Insulation layer  | Sound reduction index |
|                                      |                       | t mm                          |                   | t mm                          |  | t mm    | approx. kg/m <sup>2</sup>                            | D mm           | h mm                    | mm                | R <sub>w</sub> dB | R <sub>w,R</sub> dB   |
| <b>W383.de Metal stud partition,</b> |                       |                               |                   |                               |  |         | Single metal stud frame, single-layer mixed cladding |                |                         |                   |                   |                       |
|                                      | F30                   | •                             | 12.5              | •                             | 12.5   | 23      | 75   | 50             | 50                      | 44.9              | 42                |                       |
|                                      |                       | •                             | 12.5              | •                             | 12.5   | 23      | 100  | 75             | 50                      | ≥ 44              | ≥ 42              |                       |
|                                      |                       | •                             | 12.5              | •                             | 12.5   | 23      | 125  | 100            | 50                      | ≥ 44              | ≥ 42              |                       |
|                                      |                       | •                             | 12.5              | •                             | 12.5   | 25      | 75   | 50             | 50                      | ≥ 44              | ≥ 42              |                       |
|                                      |                       | •                             | 12.5              | •                             | 12.5   | 25      | 100  | 75             | 50                      | ≥ 44              | ≥ 42              |                       |
|                                      |                       | •                             | 12.5              | •                             | 12.5   | 25      | 125  | 100            | 50                      | ≥ 44              | ≥ 42              |                       |
| <b>W384.de Metal stud partition,</b> |                       |                               |                   |                               |  |         | Single metal stud frame, double-layer mixed cladding |                |                         |                   |                   |                       |
|                                      | F90                   | •                             | 2x 12.5           | •                             | 2x 12.5  | 44      | 100  | 50             | 50                      | 54.2              | 52                |                       |
|                                      |                       | •                             | 2x 12.5           | •                             | 2x 12.5  | 44      | 125  | 75             | 50                      | ≥ 54              | ≥ 52              |                       |
|                                      |                       | •                             | 2x 12.5           | •                             | 2x 12.5  | 44      | 150  | 100            | 50                      | ≥ 54              | ≥ 52              |                       |
|                                      |                       | •                             | 2x 12.5           | •                             | 2x 12.5  | 48      | 100  | 50             | –                       | –                 | –                 |                       |
|                                      |                       | •                             | 2x 12.5           | •                             | 2x 12.5  | 48      | 125  | 75             | 60                      | 57.8              | 55                |                       |
|                                      |                       | •                             | 2x 12.5           | •                             | 2x 12.5  | 48      | 150  | 100            | 80                      | ≥ 57              | ≥ 55              |                       |

1) Knauf Piano fire-resistant board GKF and GKFI (specially impregnated gypsum core)

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

#### With fire resistance:

Back the upper and lower as well as the lateral perimeter profiles with mineral wool insulation strips **S**.

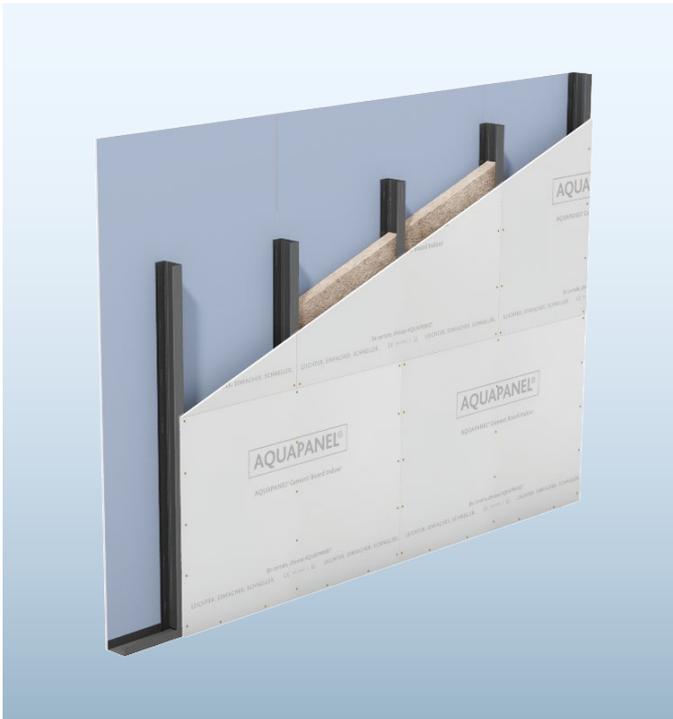
**Requirements for the insulation layer:** (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 50 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

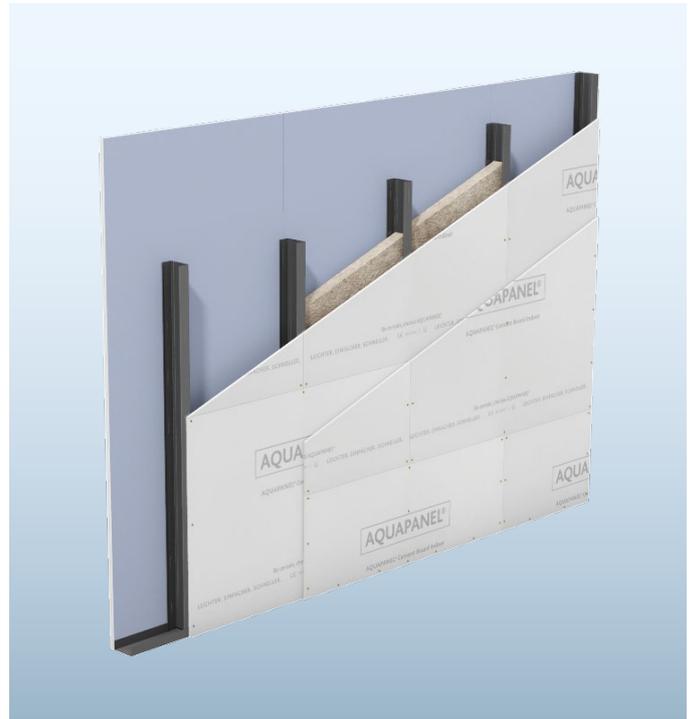
|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design see Brochure Wet Room Solutions NA.de (German only). |

### Wall heights

**W383.de** Metal stud partition, single metal stud frame, single-layer mixed cladding



**W384.de** Metal stud partition, single metal stud frame, double-layer mixed cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs | W383.de<br>AQUAPANEL Cement Board Indoor 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 12.5 mm |                        | W384.de<br>AQUAPANEL Cement Board Indoor 2x 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 2x 12.5 mm |                      |
|--------------------|------------------|--|------------------------|--|----------------------|
|                    |                  | Without fire resistance  | With fire resistance   | Without fire resistance  | With fire resistance |
| Metal gauge 0.6 mm | a mm             | m  | m                      | m  | m                    |
| CW 50              | 625              | 3.00 <sup>1)</sup> / –   | 3.00 <sup>1)</sup> / – | 3.90   | 3.00                 |
|                    | 417              | 3.65 <sup>1)</sup> / 3.30  | 3.00                   | 4.00   | 3.00                 |
|                    | 312.5            | 4.00   | 3.00                   | 4.00   | 3.00                 |
| CW 75              | 625              | 4.00   | 3.00                   | 4.20   | 3.00                 |
|                    | 417              | 4.15   | 3.00                   | 5.25   | 3.00                 |
|                    | 312.5            | 4.70   | 3.00                   | 6.00   | 3.00                 |
| CW 100             | 625              | 4.75   | 3.00                   | 6.05   | 3.00                 |
|                    | 417              | 5.70   | 3.00                   | 7.40   | 3.00                 |
|                    | 312.5            | 6.45   | 3.00                   | 8.00   | 3.00                 |
| CW 125             | 625              | 6.25   | 3.00                   | 8.00   | 3.00                 |
|                    | 417              | 7.40   | 3.00                   | 8.00   | 3.00                 |
|                    | 312.5            | 8.00   | 3.00                   | 8.00   | 3.00                 |
| CW 150             | 625              | 7.80   | 3.00                   | 8.00   | 3.00                 |
|                    | 417              | 8.00   | 3.00                   | 8.00   | 3.00                 |
|                    | 312.5            | 8.00   | 3.00                   | 8.00   | 3.00                 |

1) only for installation zone 1

#### Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W0-I / W1-I  
W11.de  
W6.11.de  
W6.11.de  
W62.de  
D11.de  
D13.de  
W2-I / W3-I  
W38.de  
W68.de  
D28.de

### W385.de Metal stud partition, single/double-layer / mixed cladding

| Knauf System | Fire resistance class   | Cladding  |   | Partition side 2 |                  | Weight | Wall thickness    | Profile Knauf CW C3/C5M | Sound insulation   |      |
|--------------|---|---|---|------------------|------------------|--------|-------------------|-------------------------|--|------|
|              |   | Partition side 1  | Partition side 2                                      | Partition side 2 | Insulation layer |        |                   |                         | Sound reduction index  |      |
|              | <b>AQUAPANEL Cement Board Indoor</b><br>Minimum thickness<br>t mm | <b>AQUAPANEL Cement Board Indoor</b><br>Knauf Piano fire-resistant board (1) <sup>1)</sup><br>Diamant<br>t mm | Without insulation layer<br>approx. kg/m <sup>2</sup> | D mm             | h mm             | mm     | R <sub>w</sub> dB | R <sub>w,R</sub> dB     |  |      |
|              |   |   |   |                  |                  |        |                   |                         | <b>W385.de Metal stud partition</b> <span style="float: right;">Double metal stud frame, single/double-layer / mixed cladding</span> |      |
|              | F30   | •   | 12.5  | •                | 12.5             | 26     | 130               | 2x 50                   | –  | –    |
|              |   |   |   |                  |                  |        | 180               | 2x 75                   | –  | –    |
|              |   |   |   |                  |                  |        | 230               | 2x 100                  | –  | –    |
|              |   |   |   |                  |                  |        | 130               | 2x 50                   | –  | –    |
|              |   |   |   |                  |                  |        | 180               | 2x 75                   | –  | –    |
|              |   |   |   |                  |                  |        | 230               | 2x 100                  | –  | –    |
|              | F90   | •   | 2x 12.5   | •                | 2x 12.5          | 48     | 155               | 2x 50                   | 2x 40  | 64.2 |
|              |   |   |   |                  |                  |        | 205               | 2x 75                   | 2x 60  | ≥ 66 |
|              |   |   |   |                  |                  |        | 255               | 2x 100                  | 2x 80  | ≥ 66 |
|              |   |   |   |                  |                  |        | 155               | 2x 50                   | –  | –    |
|              |   |   |   |                  |                  |        | 205               | 2x 75                   | –  | –    |
|              |   |   |   |                  |                  |        | 255               | 2x 100                  | –  | –    |
|              | F90   | •   | 2x 12.5   | •                | 2x 12.5          | 46     | 155               | 2x 50                   | 2x 40  | 66.4 |
|              |   |   |   |                  |                  |        | 205               | 2x 75                   | –  | –    |
|              |   |   |   |                  |                  |        | 255               | 2x 100                  | –  | –    |
|              |   |   |   |                  |                  |        | 155               | 2x 50                   | 2x 40  | 66.4 |
|              | F90   | •   | 2x 12.5   | •                | 2x 12.5          | 50     | 205               | 2x 75                   | 2x 60  | ≥ 66 |
|              |   |   |   |                  |                  |        | 255               | 2x 100                  | 2x 80  | ≥ 66 |

1) Knauf Piano fire-resistant board GKF and GKFI (specially impregnated gypsum core)

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

#### With fire resistance:

Back the upper and lower as well as the lateral perimeter profiles with mineral wool insulation strips **S**.

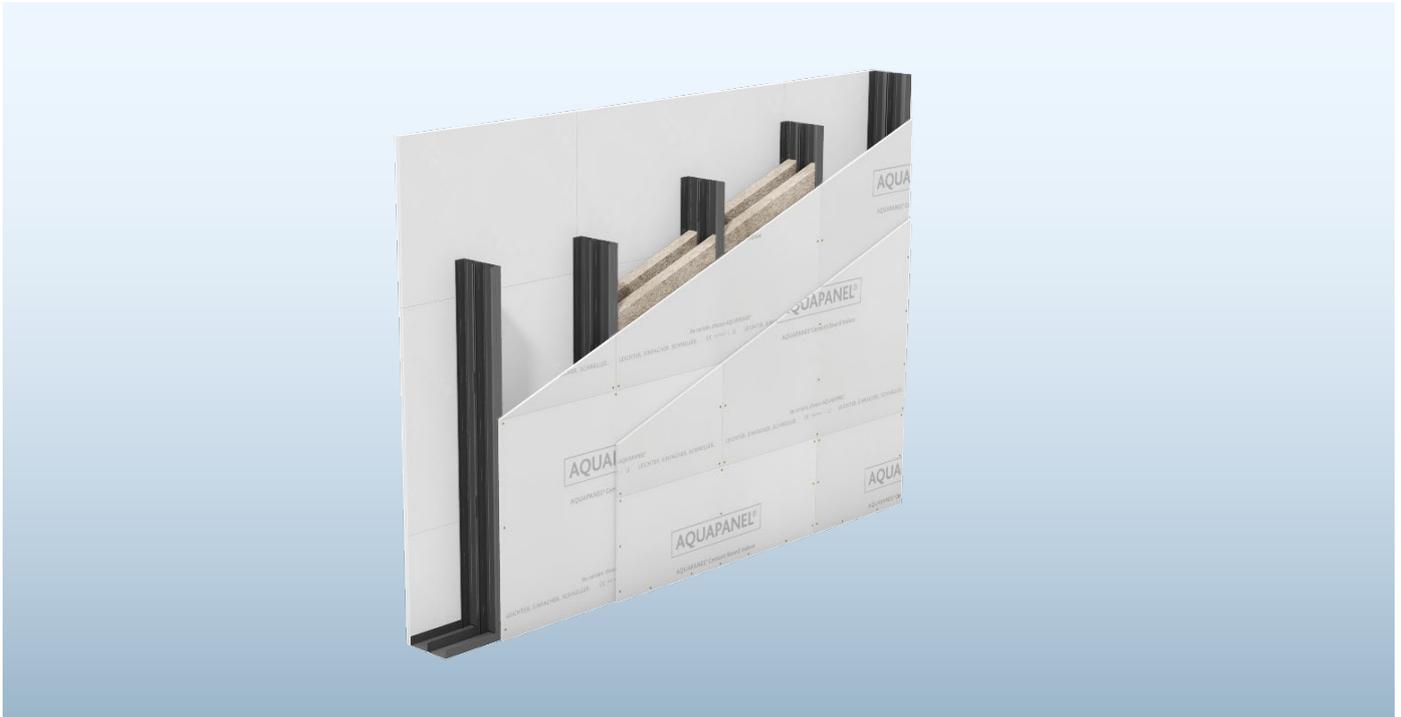
**Requirements for the insulation layer:** (Insulation materials, e.g. from Knauf Insulation)

- Required for fire resistance: none
- Fire resistance permissible: Mineral wool **G** ≥ 50 mm thick
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design see Brochure Wet Room Solutions NA.de (German only). |

### Wall heights

W385.de Metal stud partition, double metal stud frame, single/double-layer / mixed cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile       | Spacing of studs | AQUAPANEL Cement Board Indoor 12.5 mm |                           | AQUAPANEL Cement Board Indoor 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 12.5 mm |                           | AQUAPANEL Cement Board Indoor 2x 12.5 mm |                           | AQUAPANEL Cement Board Indoor 2x 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 2x 12.5 mm |                           |
|---------------------|------------------|---------------------------------------|---------------------------|---|---------------------------|--|---------------------------|---|---------------------------|
|                     |                  | Without fire resistance m             | With fire resistance m    | Without fire resistance m   | With fire resistance m    | Without fire resistance m                | With fire resistance m    | Without fire resistance m   | With fire resistance m    |
| Metal gauge 0.6 mm  | a                |                                       |                           |   |                           |  |                           |   |                           |
|                     | 625              | 2.55 <sup>1)</sup> / –                | 2.55 <sup>1)</sup> / –    | 2.55 <sup>1)</sup> / –  | 2.55 <sup>1)</sup> / –    | 2.60 <sup>1)</sup> / –                   | 2.60 <sup>1)</sup> / –    | 2.60 <sup>1)</sup> / –  | 2.60 <sup>1)</sup> / –    |
|                     | 417              | 3.10 <sup>1)</sup> / 2.35             | 3.10 <sup>1)</sup> / 2.35 | 3.10 <sup>1)</sup> / 2.35   | 3.00 <sup>1)</sup> / 2.35 | 3.20 <sup>1)</sup> / 2.50                | 3.20 <sup>1)</sup> / 2.50 | 3.20 <sup>1)</sup> / 2.50   | 3.00 <sup>1)</sup> / 2.50 |
|                     | 312.5            | 3.50 <sup>1)</sup> / 3.10             | 3.50 <sup>1)</sup> / 3.10 | 3.50 <sup>1)</sup> / 3.10   | 3.00                      | 3.70 <sup>1)</sup> / 3.55                | 3.70 <sup>1)</sup> / 3.55 | 3.70 <sup>1)</sup> / 3.55   | 3.00 <sup>1)</sup> / 3.10 |
| CW 50 <sup>2)</sup> | 625              | 3.80                                  | 3.80                      | 3.80  | 3.00                      | 3.95                                     | 3.95                      | 3.95  | 3.00                      |
|                     | 417              | 4.00                                  | 4.00                      | 4.00  | 3.00                      | 4.00                                     | 4.00                      | 4.00  | 3.00                      |
|                     | 312.5            | 4.00                                  | 4.00                      | 4.00  | 3.00                      | 4.15                                     | 4.15                      | 4.15  | 3.00                      |
| CW 75               | 625              | 4.00                                  | 4.00                      | 4.00  | 3.00                      | 4.00                                     | 4.00                      | 4.00  | 3.00                      |
|                     | 417              | 4.75                                  | 4.75                      | 4.75  | 3.00                      | 4.95                                     | 4.95                      | 4.95  | 3.00                      |
|                     | 312.5            | 5.40                                  | 5.00                      | 5.40  | 3.00                      | 5.75                                     | 5.00                      | 5.75  | 3.00                      |
| CW 100              | 625              | 5.00                                  | 5.00                      | 5.00  | 3.00                      | 5.15                                     | 5.00                      | 5.15  | 3.00                      |
|                     | 417              | 6.05                                  | 5.00                      | 6.05  | 3.00                      | 6.45                                     | 5.00                      | 6.45  | 3.00                      |
|                     | 312.5            | 6.95                                  | 5.00                      | 6.95  | 3.00                      | 7.45                                     | 5.00                      | 7.45  | 3.00                      |
| CW 125              | 625              | 6.15                                  | 5.00                      | 6.15  | 3.00                      | 6.50                                     | 5.00                      | 6.50  | 3.00                      |
|                     | 417              | 7.15                                  | 5.00                      | 7.15  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
|                     | 312.5            | 8.00                                  | 5.00                      | 8.00  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
| CW 150              | 625              | –                                     | –                         | –   | –                         | –  | –                         | –   | –                         |
|                     | 417              | –                                     | –                         | –   | –                         | –  | –                         | –   | –                         |
|                     | 312.5            | –                                     | –                         | –   | –                         | –  | –                         | –   | –                         |

1) Only for installation zone 1

2) CW50: For fire protection requirements **with** mineral wool insulation layer, only wall heights **up to 3.00 m** are permissible.

### Notes

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).



### Wall heights

W386.de Installation wall, double metal stud frame, single/double-layer / mixed cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br><br>a<br>mm | AQUAPANEL Cement Board Indoor 12.5 mm |                           | AQUAPANEL Cement Board Indoor 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 12.5 mm |                           | AQUAPANEL Cement Board Indoor 2x 12.5 mm |                           | AQUAPANEL Cement Board Indoor 2x 12.5 mm and Knauf Piano fire-resistant board GKF/GKFI / Diamant 2x 12.5 mm |                           |
|--------------------|---------------------------------|---------------------------------------|---------------------------|---|---------------------------|--|---------------------------|---|---------------------------|
|                    |                                 | Without fire resistance<br>m          | With fire resistance<br>m | Without fire resistance<br>m  | With fire resistance<br>m | Without fire resistance<br>m             | With fire resistance<br>m | Without fire resistance<br>m  | With fire resistance<br>m |
| Metal gauge 0.6 mm | 625                             | 3.55                                  | 3.55                      | 3.55  | 3.00                      | 4.00                                     | 4.00                      | 4.00  | 3.00                      |
|                    | 417                             | 4.00                                  | 4.00                      | 4.00  | 3.00                      | 4.00                                     | 4.00                      | 4.00  | 3.00                      |
|                    | 312.5                           | 4.00                                  | 4.00                      | 4.00  | 3.00                      | 4.70                                     | 4.70                      | 4.70  | 3.00                      |
| CW 75              | 625                             | 4.95                                  | 4.95                      | 4.95  | 3.00                      | 5.75                                     | 5.00                      | 5.75  | 3.00                      |
|                    | 417                             | 6.10                                  | 5.00                      | 6.10  | 3.00                      | 7.40                                     | 5.00                      | 7.40  | 3.00                      |
|                    | 312.5                           | 7.05                                  | 5.00                      | 7.05  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
| CW 100             | 625                             | 5.35                                  | 5.00                      | 5.35  | 3.00                      | 5.85                                     | 5.00                      | 5.85  | 3.00                      |
|                    | 417                             | 6.65                                  | 5.00                      | 6.65  | 3.00                      | 7.55                                     | 5.00                      | 7.55  | 3.00                      |
|                    | 312.5                           | 7.60                                  | 5.00                      | 7.60  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
| CW 125             | 625                             | 8.00                                  | 5.00                      | 8.00  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
|                    | 417                             | 8.00                                  | 5.00                      | 8.00  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
|                    | 312.5                           | 8.00                                  | 5.00                      | 8.00  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
| CW 150             | 625                             | 8.00                                  | 5.00                      | 8.00  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
|                    | 417                             | 8.00                                  | 5.00                      | 8.00  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |
|                    | 312.5                           | 8.00                                  | 5.00                      | 8.00  | 3.00                      | 8.00                                     | 5.00                      | 8.00  | 3.00                      |

2) CW50: For fire protection requirements **with** mineral wool insulation layer, only wall heights **up to 3.00 m** are permissible.

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design see Brochure Wet Room Solutions NA.de (German only). |

W0-I / W1-I  
W11.de  
W6.t.de  
W62.de  
D11.de  
D13.de  
W2-I / W3-I  
W38.de  
W68.de  
D28.de

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



## **Water action classes W2-I and W3-I**

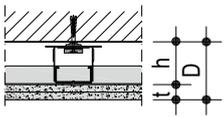
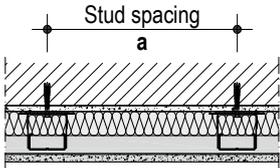
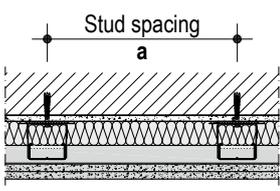
### **Furring systems with cement boards**

W683.de Furring directly anchored, metal grid CD 60/27 single-/double-layer cladding

W685.de Furring, detached, metal studs CW, single-layer cladding

W686.de Furring, detached, metal studs CW, double-layer cladding

W683.de Directly anchored, metal grid CD 60/27, single-/double-layer cladding

| Knauf System   | Cladding   | Weight  | Minimum thickness | Profile Knauf CD C3/C5M | Cavity | Sound insulation          |                         |                                   |
|--|--|---|-------------------|-------------------------|--------|---------------------------|-------------------------|-----------------------------------|
|  |  |   |                   |                         |        | Insulation layer <b>G</b> | Improvement index       | Resonance frequency <sup>1)</sup> |
|    | AQUAPANEL Cement Board Indoor<br>Minimum thickness<br>t mm | Without insulation layer<br>approx. kg/m <sup>2</sup> | D mm              |                         | h mm   | mm                        | $\Delta R_{w,heavy}$ dB | $f_0$ Hz                          |
| <b>W683.de Furring directly anchored</b> Metal grid CD 60/27, directly anchored with damping universal brackets, single-/double-layer cladding |  |   |                   |                         |        |                           |                         |                                   |
|    | • 12.5   | 13  | ≥ 52.5            | 60/27                   | ≥ 40   | ≥ 30                      | 7                       | 85                                |
|   | • 2x 12.5  | 24  | ≥ 65.0            | 60/27                   | ≥ 40   | ≥ 30                      | 10                      | 61                                |

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.  
 Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m<sup>2</sup>.

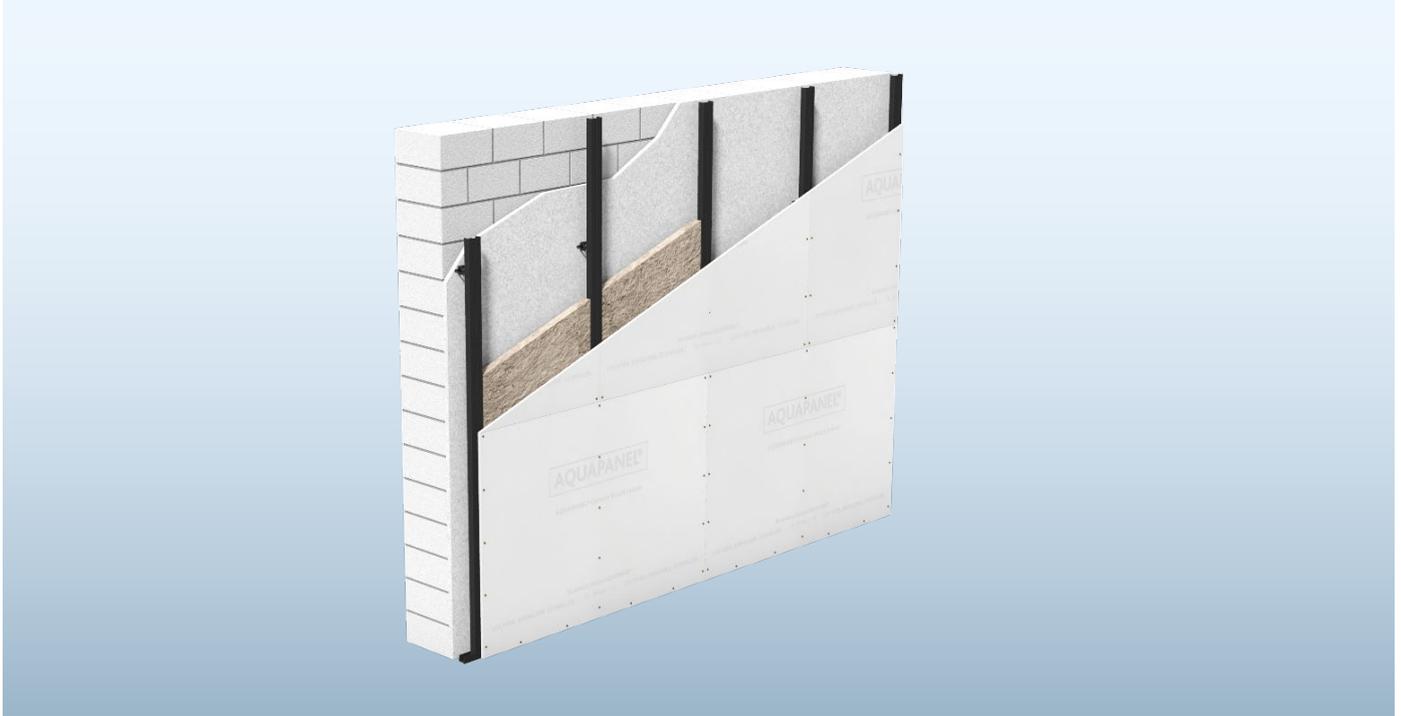
**Requirements for the insulation layer:** (Insulation materials, e.g. from Knauf Insulation)

- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design see Brochure Wet Room Solutions NA.de (German only). |

Wall heights

W683.de Furring directly anchored, metal grid CD 60/27, single-/double-layer cladding



Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs | AQUAPANEL Cement Board Indoor<br>12.5 mm | AQUAPANEL Cement Board Indoor<br>2x 12.5 mm |
|--------------------|------------------|--|---|
| Metal gauge 0.6 mm | a<br>mm          | m  | m   |
| CD 60/27           | 625              | 10                                       | 10  |

- Use Universal Bracket 120 mm
- Max. partition cavity 127 mm

**Notes**

The maximum wall heights specified here include the combination of the load case installation zone 1, installation zone 2 and wind load (0.285 kN/m<sup>2</sup>) with cantilever load acc. to DIN 18183 with DIN 4103-1.

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

### W685.de Detached, metal studs CW, single-layer cladding

### W686.de Detached, metal studs CW, double-layer cladding

| Knauf System                     | Cladding   | Weight  | Minimum thickness | Profile Knauf CW C3/C5M | Cavity | Sound insulation                      |                         |                                   |
|----------------------------------|--|---|-------------------|-------------------------|--------|---------------------------------------|-------------------------|-----------------------------------|
|                                  |  |   |                   |                         |        | Insulation layer <b>G</b>             | Improvement index       | Resonance frequency <sup>1)</sup> |
|                                  | AQUAPANEL Cement Board Indoor<br>Minimum thickness<br><br>t mm | Without insulation layer<br><br>approx. kg/m <sup>2</sup> | D mm              |                         | h mm   | mm                                    | $\Delta R_{w,heavy}$ dB | f <sub>0</sub> Hz                 |
| <b>W685.de Furring, detached</b> |  |   |                   |                         |        | Metal studs CW, single-layer cladding |                         |                                   |
|                                  | • 12.5   | 14  | ≥ 62.5            | 50                      | ≥ 50   | 40                                    | 10                      | 62                                |
|                                  |  |   | ≥ 87.5            | 75                      | ≥ 75   | 60                                    | 12                      | 51                                |
|                                  |  |   | ≥ 112.5           | 100                     | ≥ 100  | 80                                    | 13                      | 44                                |
| <b>W686.de Furring, detached</b> |  |   |                   |                         |        | Metal studs CW, double-layer cladding |                         |                                   |
|                                  | • 2x 12.5  | 24  | ≥ 75              | 50                      | ≥ 50   | 40                                    | 13                      | 45                                |
|                                  |  |   | ≥ 100             | 75                      | ≥ 75   | 60                                    | 15                      | 37                                |
|                                  |  |   | ≥ 125             | 100                     | ≥ 100  | 80                                    | 16                      | 32                                |

1) Resonance frequency calculated acc. to DIN 4109-34:2016. Calculated in older documents acc. to EN 12354-1:2000.

Values in italics: Calculated improvement on the basis of the DIN 4109-34:2016-07 with a mass per unit area of the basic wall of 340 kg/m<sup>2</sup>.

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

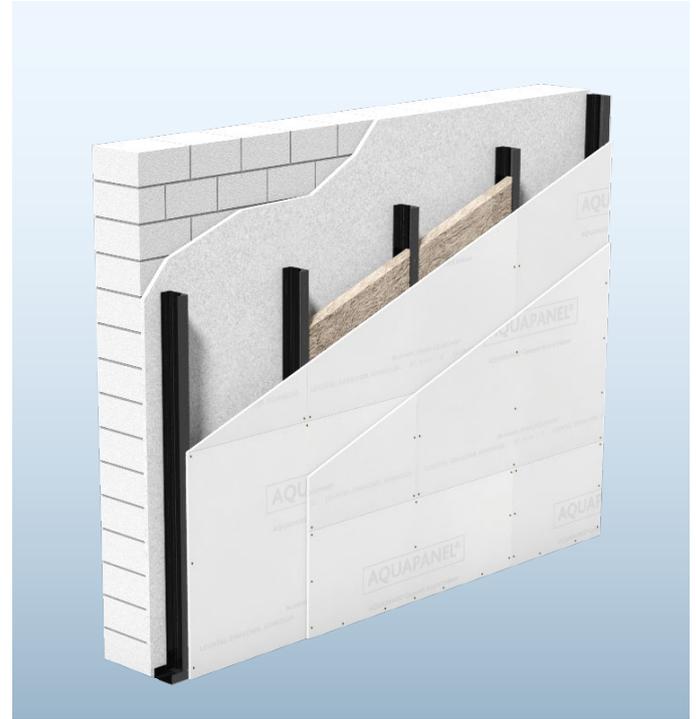
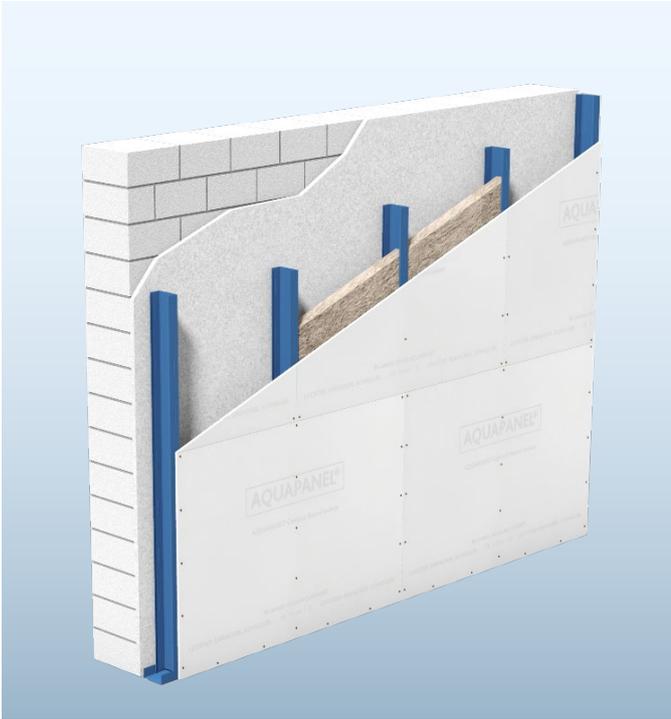
- Required for sound insulation reasons: Mineral wool **G** length-related flow resistance acc. to EN 29053:  $r \geq 5 \text{ kPa} \cdot \text{s/m}^2$

|              |   |
|--------------|---|
| <b>Notes</b> | Observe notes from page 100.  |
|              | For further information on planning and design see Brochure Wet Room Solutions NA.de (German only). |

### Wall heights

W685.de Furring, detached, metal studs CW, single-layer cladding

W686.de Furring detached, metal studs CW, double-layer cladding



### Maximum permissible wall heights

Installation zones 1 and 2

| Knauf profile      | Spacing of studs<br>a<br>mm | W685.de                                  | W686.de                                     |
|--------------------|-----------------------------|--|---|
|                    |                             | AQUAPANEL Cement Board Indoor<br>12.5 mm | AQUAPANEL Cement Board Indoor<br>2x 12.5 mm |
| Metal gauge 0.6 mm |                             | m  | m   |
| CW 50              | 625                         | 2.55 <sup>1)</sup> / –                   | 2.60 <sup>1)</sup> / –                      |
|                    | 417                         | 3.10 <sup>1)</sup> / 2.35                | 3.20 <sup>1)</sup> / 2.50                   |
|                    | 312.5                       | 3.50 <sup>1)</sup> / 3.10                | 3.70 <sup>1)</sup> / 3.55                   |
| CW 75              | 625                         | 3.80                                     | 3.95  |
|                    | 417                         | 4.00                                     | 4.00  |
|                    | 312.5                       | 4.00                                     | 4.15  |
| CW 100             | 625                         | 4.00                                     | 4.00  |
|                    | 417                         | 4.75                                     | 4.95  |
|                    | 312.5                       | 5.40                                     | 5.75  |
| CW 125             | 625                         | 5.00                                     | 5.15  |
|                    | 417                         | 6.05                                     | 6.45  |
|                    | 312.5                       | 6.95                                     | 7.45  |
| CW 150             | 625                         | 6.15                                     | 6.50  |
|                    | 417                         | 7.45                                     | 8.00  |
|                    | 312.5                       | 8.00                                     | 8.00  |

1) only for installation zone 1

#### Notes

The maximum wall heights specified here include the combination of the load case installation zone 1, installation zone 2 and wind load (0.285 kN/m<sup>2</sup>) with cantilever load acc. to DIN 18183 with DIN 4103-1.

Observe notes from page 100.

For further information on planning and design see Brochure Wet Room Solutions NA.de (German only).

W0-I / W1-I

W11.de

W61.de

W62.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de



## **Water action classes W2-I and W3-I**

### **Ceiling systems with cement boards**

D282.de Board ceiling, metal grid with CD profiles 60/27

D282.de Metal grid with CD channels 60/27

Without fire resistance

|  | Fire resistance class |            | Cladding                       |                               | Nominal weight           | Furring channel       | Insulation layer   |                              |
|--|-----------------------|------------|--------------------------------|-------------------------------|--------------------------|-----------------------|--------------------|------------------------------|
|  | From below            | From above | AQUAPANEL Cement Board SkyLite | AQUAPANEL Cement Board Indoor |                          |                       | CD 60/27<br>C3/C5M | Required for fire resistance |
|  | For fire exposure     |            |                                | Minimum thickness             | Without insulation layer | Maximum grid spacings | Minimum thickness  |                              |
|  |                       |            |                                | mm                            | kg/m <sup>2</sup>        | (b)                   | mm                 | kg/m <sup>3</sup>            |

D282.de Board ceiling, metal grid with CD profiles 60/27

|  |   |   |   |        |      |                           |   |
|--|---|---|---|--------|------|---------------------------|---|
|  | - | - | • | 8.0    | 13.1 | 312.5 / 450 <sup>1)</sup> | - |
|  | - | - | • | 12.5   | 13.6 | 312.5 / 450 <sup>1)</sup> |   |
|  | - | - | • | 2x 8.0 | 23.6 | 312.5 / 450 <sup>1)</sup> |   |

1) 312.5 mm with lateral direction of application; 450 mm with longitudinal direction of application. Applies for AQUAPANEL Cement Board SkyLite/Indoor 900 x 1250 mm.

Ball impact safety

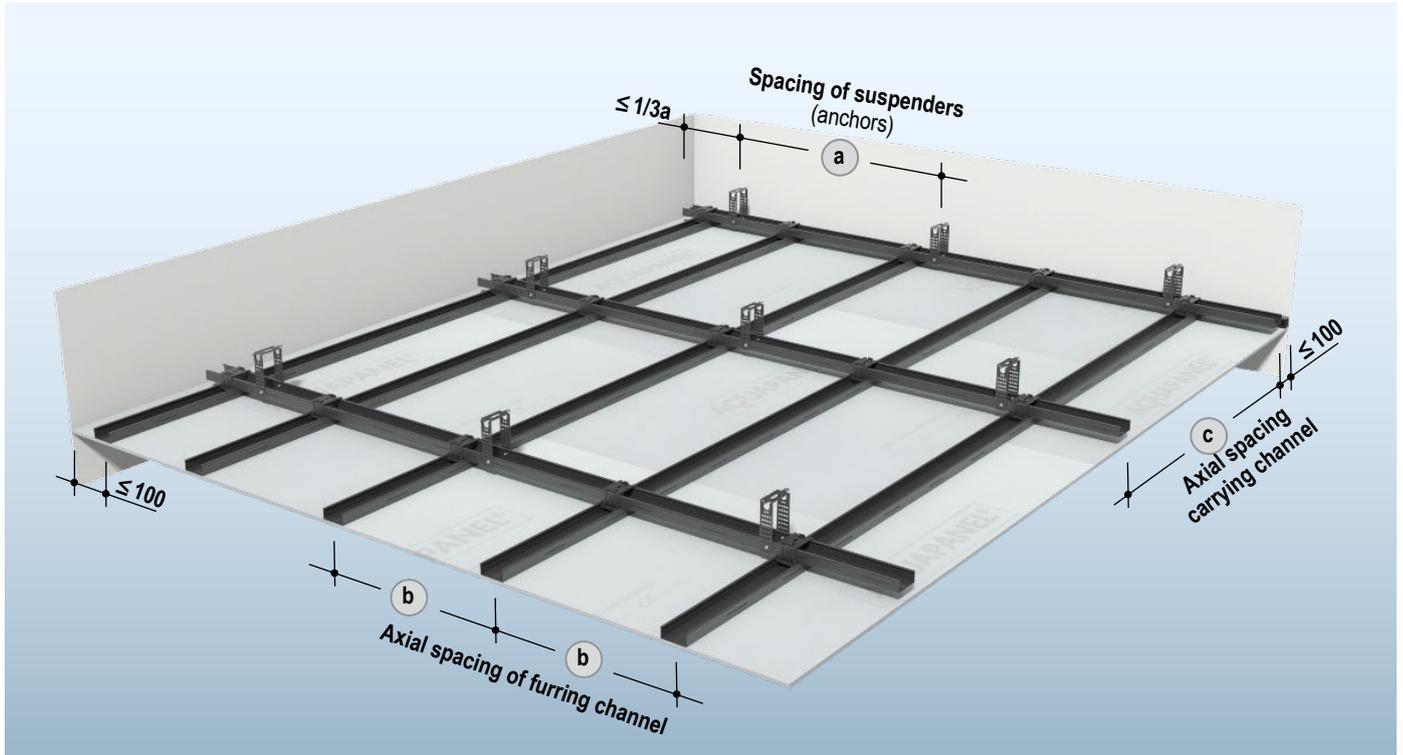
Ball impact safety is implemented when cladding 12.5 mm AQUAPANEL, Cement Board Indoor is applied.

|       |  |
|-------|--|
| Notes | Observe notes from page 100.<br>For further planning and application details, see brochure Ceilings systems for indoors and outdoors DEA.de (German only). |
|-------|--|

### Maximum grid spacings

D282.de Board ceiling, metal grid with CD profiles 60/27

Dimensions in mm



### Determination of load class

| Load class<br>kN/m <sup>2</sup> | Nominal weight +<br>weight of additional loads<br>kg/m <sup>2</sup> |
|---------------------------------|---|
| Up to 0.65                      | 60  |
| Up to 0.50                      | 50  |
| Up to 0.40                      | 40  |
| Up to 0.30                      | 30  |
| Up to 0.20                      | 20  |
| Up to 0.15                      | 10  |

### Without fire resistance, carrying and furring channel

| Axial spacings<br>carrying<br>channel (c) | Suspender spacings (a)          |            |            |            |
|---|---------------------------------|------------|------------|------------|
|   | Load class in kN/m <sup>2</sup> |            |            |            |
|   | Up to 0.15                      | Up to 0.20 | Up to 0.30 | Up to 0.50 |
| 500                                       | 1350                            | 1250       | 1050       | 900        |
| 600                                       | 1300                            | 1150       | 1000       | 850        |
| 700                                       | 1200                            | 1100       | 950        | 800        |
| 800                                       | 1150                            | 1050       | 900        | 750        |
| 900                                       | 1150                            | 1000       | 900        | 750        |
| 1000                                      | 1100                            | 1000       | 850        | 700        |
| 1100                                      | 1050                            | 950        | 800        | 700        |
| 1200                                      | 1050                            | 950        | 800        | –          |
| 1300                                      | 1000                            | 900        | 750        | –          |
| 1400                                      | 1000                            | 900        | –          | –          |

Spacings apply only in conjunction with connectors and suspenders with corrosivity category C3 and C5M.

|              |  |
|--------------|--|
| <b>Notes</b> | Observe notes from page 100.   |
|              | For further planning and application details, see brochure Ceilings systems for indoors and outdoors DEA.de (German only). |

W0-I / W1-I  
 W11.de  
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 W2-I / W3-I  
 W38.de  
 W68.de  
 D28.de

## Notes

## 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 as well as the construction variants of the 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 resistance and sound insulation) are considered.

## References to other documents

## System data sheets

- Knauf Metal Stud Partitions W11.de
- Knauf Furring W61.de
- Knauf Installation Shaft Walls W62.de
- Knauf Board Ceiling D11.de
- Knauf Free-Spanning Ceilings D13.de
- Knauf Pre-fab Floor Screed F12.de

## Brochures

- Wet room solutions with AQUAPANEL technology NA.de
- Drywalling in damp and wet rooms To154.de (German only)
- Ceilings systems for indoors and outdoors with AQUAPANEL technology DEA.de (German only).
- AQUAPANEL sealing BP17.de (German only)

## Product data sheets

- Observe the Product Data Sheets of the Knauf system components

## Symbols in this technical brochure

The following symbols are used in this document:

## Insulation layers

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

## Stud frame spacings

- a** Spacing of suspenders/anchors
- b** Axial spacing furring channel/hat-shaped channel (cladding span width)
- c** Axial spacing carrying channel (spacing furring channel)

## Intended use of Knauf Systems

Please observe the following:

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

## General instructions

## Terms

## 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.

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

## Notes on sound insulation

- $R_w$  = Weighted sound reduction index in dB without sound transmission via flanking building components
- $L_{n,w}$  = Weighted normalized impact sound pressure level in dB without sound transmission via flanking building components
- $\Delta R_{w,heavy}$  = Weighted sound reduction improvement index of the furring in conjunction with a basic wall as a solid wall with a mass per unit area of  $350 \pm 50$  kg/m<sup>2</sup> acc. to EN ISO 10140-5:2010-12 appendix B
- $f_0$  = Resonance frequency, determined acc. to EN 4109-34:2016-07
- $D_{nT,w}$  = Weighted standardized sound level difference in dB with respect to a reference reverberation time of  $T_0 = 0.5$  s without sound transmission via flanking building components
- Index R = Used to differentiate between the calculation value and the test stand values.

|              |  |
|--------------|--|
| <b>Notes</b> | <p>The verification of the new DIN 4109:2018-01 is no longer according to calculation values <math>R_{w,R}</math> or <math>L_{n,w,R}</math>, but rather with the values obtained on the test rig <math>R_w/L_{n,w}</math> 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.</p> <p>For a transition period, the Knauf System Data Sheets will specify both the test stand values as well as the calculated values used up to now.</p> <p>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.</p> |
|--------------|--|

## 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.

W0-I / W1-I

W11.de

W6.1.de

W6.2.de

D11.de

D13.de

W2-I / W3-I

W38.de

W68.de

D28.de

### Certificates of Usability systems with gypsum boards

#### Metal stud partitions, furring, installation shaft walls

| Knauf System | Fire resistance                                  |                      | Sound insulation       |               | Structural engineering<br>Taking the respective fire protection abP (National Technical Test Certificate) into consideration |                          |                          |
|--------------|--|----------------------|------------------------|---------------|--|--------------------------|--------------------------|
|              | Knauf boards / Diamant                           | Drystar-Board        | Knauf boards / Diamant | Drystar-Board | Knauf boards   | Diamant                  | Drystar-Board            |
| W111.de      | AbP P-3310/563/07-MPA BS                         | –                    | L 037-01.15            | L 039-09.14   | AbP P-1402/354/12-MPA BS   | AbP P-1405/928/10-MPA BS | AbP P-1402/354/12-MPA BS |
| W112.de      | AbP P-3310/563/07-MPA BS                         | AbP P-SAC 02/III-719 | L 037-01.15            | L 039-09.14   | AbP P-1402/354/12-MPA BS   | AbP P-1405/928/10-MPA BS | AbP P-1402/354/12-MPA BS |
| W113.de      | AbP P-3310/563/07-MPA BS                         | /                    | L 037-01.15            | /             | AbP P-1402/354/12-MPA BS   | AbP P-1405/928/10-MPA BS | /                        |
| W115.de      | AbP P-3310/563/07-MPA BS                         | AbP P-SAC 02/III-719 | L 037-01.15            | –             | DIN 18183-1 and Knauf recommendation   | Knauf recommendation     | Knauf recommendation     |
| W116.de      | AbP P-3310/563/07-MPA BS                         | AbP P-SAC 02/III-719 | L 037-01.15            | L 039-09.14   | DIN 18183-1  | Knauf recommendation     | Knauf recommendation     |
| W623.de      | –  | –                    | SWK 11 108             | L 039-09.14   | –  | –                        | –                        |
| W625.de      | –  | –                    | SWK 11 108             | –             | AbP P-1403/355/12-MPA BS<br>AbP P-1100/490/15-MPA BS   | –                        | –                        |
| W626.de      | –  | –                    | SWK 11 108             | –             | AbP P-1403/355/12-MPA BS<br>AbP P-1100/490/15-MPA BS   | –                        | –                        |
| W653.de      | –  | /                    | –                      | /             | AbP P-1403/355/12-MPA BS   | /                        | /                        |
| W628A.de     | AbP P-3969/2222-MPA BS                           | –                    | L 020-08.09            | –             | Knauf calculation  | /                        | /                        |
| W628B.de     | AbP P-3393/172/08-MPA BS<br>abP P-SAC-02/III-797 | –                    | L 020-08.09            | –             | AbP P-1403/355/12-MPA BS   | AbP P-1100/490/15-MPA BS | /                        |
| W629.de      | AbP P-3393/172/08-MPA BS<br>abP P-SAC-02/III-797 | –                    | L 020-08.09            | –             | AbP P-1403/355/12-MPA BS   | AbP P-1100/490/15-MPA BS | /                        |
| W630.de      | AbP P-3969/2222-MPA BS                           | –                    | L 020-08.09            | –             | Knauf calculation  | /                        | /                        |
| W635.de      | AbP P-3320/194/09-MPA BS                         | –                    | L 020-08.09            | –             | Knauf calculation  | /                        | /                        |

#### Board ceilings

| Knauf System | Fire resistance<br>Suspended ceilings allocated solely to a single fire resistance class |               | Sound insulation<br>Suspended ceilings in conjunction with basic ceilings of types I to III |               | Sound insulation<br>Airborne and impact sound<br>(Knauf sound protection proofs) |             |               |
|--------------|--|---------------|---|---------------|--|-------------|---------------|
|              | Knauf boards / Diamant   | Drystar-Board | Knauf boards / Diamant  | Drystar-Board | Diamant  |             | Drystar-Board |
| D112.de      | F30: AbP P-2100/199/15-MPA BS<br>F90: AbP P-3400/4965-MPA BS                             | –             | AbP P-3155/3992-MPA BS  | /             | Floor  | T 007-06.10 | L 039-09.14   |
|              |  |               |   |               | Subceiling   | T 008-10.10 |               |
|              |  |               |   |               | Floor + subceiling   | T 009-10.10 |               |
| D113.de      | F30: AbP P-2100/199/15-MPA BS<br>F90: AbP P-3400/4965-MPA BS                             | –             | /   | /             | –  | –           | –             |
| D116.de      | F30: AbP P-2100/199/15-MPA BS<br>F90: AbP P-3400/4965-MPA BS                             | –             | AbP P-3155/3992-MPA BS  | /             | –  | –           | –             |
| D131.de      | F30: AbP P3964/2172-MPA BS<br>F60: AbP P-3085/3824-MPA BS                                | –             | /   | /             | T 007-06.10 / T 008-10.10 /<br>T 009-10.10 / T 010-07.10 /<br>T 011-07.10        |             | –             |

*System in the respective application variant is not a constituent part of this document.*

Certificates of Usability systems with cement boards

Metal stud partitions, furring

| Knauf System | Fire resistance                                      | Sound insulation<br>(Knauf sound protection proofs) | Structural engineering<br>Taking the respective fire protection abP (National Technical Test Certificate) into consideration |
|--------------|--|---|--|
| W381.de      | AbP P-2100/343/17-MPA BS                             | L 048-10.17   | Knauf calculation  |
| W382.de      | AbP P-2100/345/17-MPA BS                             | L 048-10.17   | Knauf calculation  |
| W383.de      | AbP P-2100/343/17-MPA BS                             | L 048-10.17   | Knauf calculation  |
| W384.de      | AbP P-2100/345/17-MPA BS                             | L 048-10.17   | Knauf calculation  |
| W385.de      | AbP P-2100/343/17-MPA BS<br>AbP P-2100/345/17-MPA BS | L 048-10.17   | Knauf calculation  |
| W386.de      | AbP P-2100/343/17-MPA BS<br>AbP P-2100/345/17-MPA BS | L 048-10.17   | Knauf calculation  |
| W683.de      | –  | –   | Knauf calculation  |
| W685.de      | –  | –   | Knauf calculation  |
| W686.de      | –  | –   | Knauf calculation  |

Board ceilings

| Knauf System | Fire resistance | Sound insulation<br>Airborne and impact sound |
|--------------|-----------------|---|
| D282.de      | –               | –   |

W0-I / W1-I  
W11.de  
W6.t1.de  
W62.de  
D11.de  
D13.de  
W2-I / W3-I  
W38.de  
W68.de  
D28.de



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