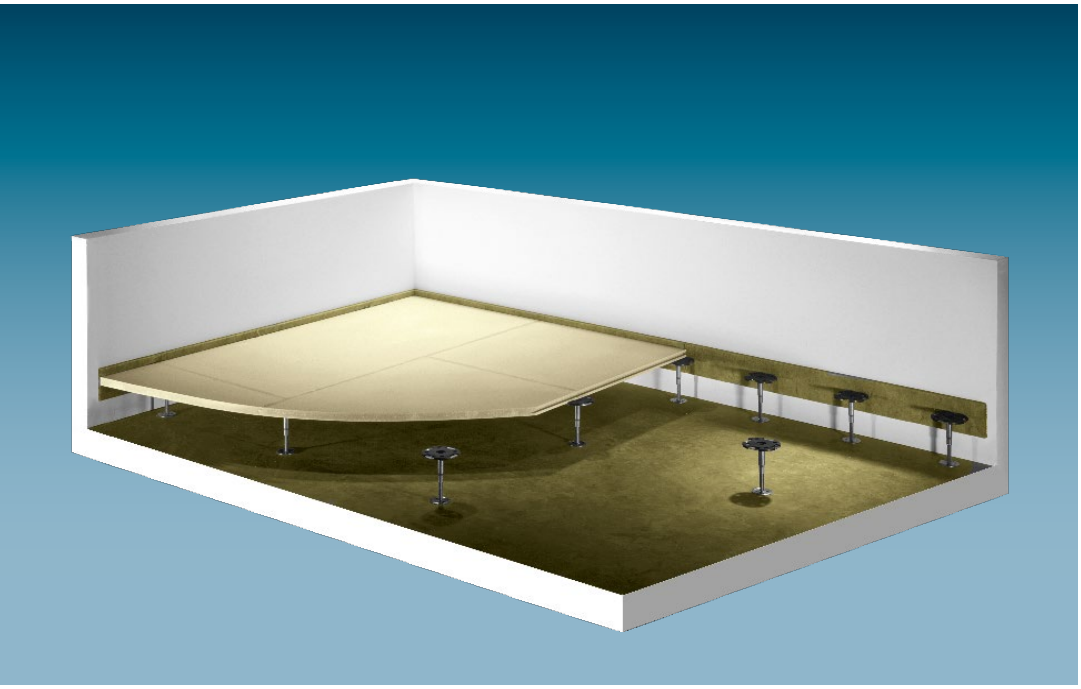


F18.de

System Data Sheet 2019-11

Knauf GIFAfloor

Hollow floors

F181.de – Single-layer Knauf hollow floor GIFAfloor FHB

F182.de – Double-layer Knauf hollow floor GIFAfloor FHBplus and GIFAfloor FHBultra

Note on English translation / Hinweise zur englischen Fassung

This is a translation of the System Data Sheet valid in Germany.
All stated details and properties are in compliance with the regulations of the German standards and building regulations. They are only applicable for the specified products, system components, application rules, and construction details in connection with the specifications of the respective certificates and approvals.
Knauf denies any liability for applications outside of Germany as this requires changes acc. to the respective national standards and building regulations.

Dies ist eine Übersetzung des in Deutschland gültigen Detailblattes. Alle angegebenen Werte und Eigenschaften entsprechen den in Deutschland gültigen Normen und bauaufsichtlichen Regelungen. Sie gelten nur bei Verwendung der angegebenen Produkte, Systemkomponenten, Anwendungsregeln und Konstruktionsdetails in Verbindung mit den Vorgaben der bauaufsichtlichen Nachweise.
Die Knauf lehnt jegliche Haftung für Einsatz und Anwendung außerhalb Deutschlands ab, da in diesem Fall eine Anpassung an nationale Normen und bauaufsichtliche Regelungen notwendig ist.

Contents

Usage instructions

Notes on the document

Knauf System Data Sheets are the planning and application basis for planners and professional installers with the application of Knauf systems. The contained information and specifications, constructions, details and stated products are based, unless otherwise stated, on the certificates of usability (e.g. National Technical Test Certificate (abP) and/or German National Technical Approvals (abZ)) valid at the date they are published as well as on the applicable standards. In addition, design and structural requirements and those regarding building physics (fire protection and sound insulation) are considered.
The contained construction details are examples and can be used in a similar way for various cladding variants of the respective system. At the same time, the demands made on fire resistance and/or sound insulation as well as any necessary additional measures and/or limitations must be observed.

Intended use of Knauf systems

Please observe the following:

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

References to other documents

- Technical information sheet TI Klima integrated warm water heating systems
- System data sheet F19.de Knauf GIFAfloor self supporting systems
- Technical information sheet TI GIFAfloor PRESTO *load-bearing system elements for wood joist ceilings in residential buildings (German only)*

Download of the documents at
www.knauf.de/profi/tools-services/dokumenten-center

General instructions for the Knauf system

Field of application

Knauf GIFAfloor hollow floors are used in interiors, e.g. for the application of building services of all kinds. They can, depending on the load carrying layer and pedestals, be used for almost all fields of application such as offices, commercial buildings, hotels, hospitals, meeting halls, exhibition halls and airport buildings where standard floor coverings are installed. Knauf GIFAfloor hollow floors are suitable for domestic areas of high humidity. Knauf GIFAfloor hollow floors improve the fire resistance and sound insulation without introducing additional moisture into the building.

Notes on structural characteristics

See page 5.

Notes on fire resistance

See page 9.

Notes on sound insulation

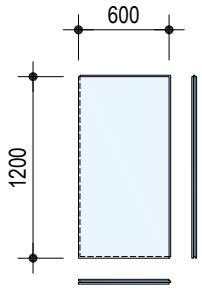
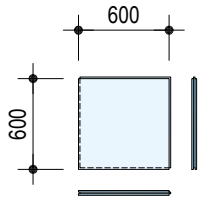
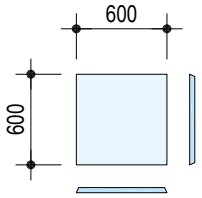
See page 10.

Tender specifications

Specification texts (German only) for GIFAfloor floor systems can be found at
http://www.ausschreibungscenter.de

- Floor systems
- System floor

GIFAfloor standard panels

Schemes shown not to scale	Panel Designation acc. toEN 15283-2	Sizes visible surface mm	Panel thickness mm	Weights (Density ≥ 1500 kg/m³) Panel approx. kg/pcs	approx. kg/m²	Material number	Packaging/ packing unit pallett
	FHB panels						
	**FHB 25** GF-W1DIR1/1200/600/25-C1/NF	1200x600	**25**	29.2	40.6	31256	35 pcs./pal.
	GF-W1DIR1/600/600/25-C1/NF	600x600	**25**	14.6	40.6	63565	70 pcs./pal.
	FHB 28 GF-W1DIR1/1200/600/28-C1/NF	1200x600	**28**	32.8	45.5	31545	30 pcs./pal.
	GF-W1DIR1/600/600/28-C1/NF	600x600	**28**	16.4	45.5	50980	60 pcs./pal.
	FHB 32 GF-W1DIR1/1200/600/32-C1/NF	1200x600	**32**	37.4	52.0	31326	25 pcs./pal.
	GF-W1DIR1/600/600/32-C1/NF	600x600	**32**	18.7	52.0	31559	50 pcs./pal.
	FHB 38 GF-W1DIR1/1200/600/38-C1/NF	1200x600	**38**	44.5	61.8	88635	20 pcs./pal.
	GF-W1DIR1/600/600/38-C1/NF	600x600	**38**	22.2	61.8	88636	40 pcs./pal.
	To increase the working load and in case of sensitive floor coverings for doubling up on the above mentioned GIFAfloor FHB panels						
	LEP 18 GF-W1DIR1/1200/600/18-C1/SF	1200x600	**18**	21.1	29.3	99258	50 pcs./pal.
GIFAfloor access panels[1] for combination with all GIFAfloor FHB F181.de and GIFAfloor FHBplus F182.de and GIFAfloor FHBplus Klima F183.de[2] systems							
	**34R** GF-W1DIR1/600/600/34-C1/ASK	600x600	**34**	20.0	–	518872	30 pcs./pal.
	42R GF-W1DIR1/600/600/42-C1/ASK	600x600	**42**	24.6	–	518872	25 pcs./pal.

1) Density ≥1500 kg/m³, edges milled with shaped edge for installation in GIFAfloor revision frames and in installation sections made from GIFAfloor transition profiles. All panels are available as single items.

2) See Knauf TI Klima

Raw material and production of GIFAtec materials

GIFAtec is produced from natural gypsum and a share of FGD gypsum with an admixture of cellulose fibres made of sorted recycled paper and cardboard. The natural gypsum is mined in open-cast mining within a radius of about 30 km around the factory. The natural chemically identical pure flue gas desulphurisation (FGD) gypsum is calcined with natural gypsum to produce stucco. The paper is soaked in water in large tanks and added to the processing water and the stucco to form a pulp. This pulp is then loaded at a thickness of about 2 mm onto a transport filter belt, and water is extracted by a vacuum during transport where it is then wound around a forming cylinder to the required thickness and subsequently roughly cut. After a setting time, the raw board is dried in a multi-layer oven, sanded to the usable thickness, shaped in a format station to either large panels, floor panels or to customized board formats in case of larger orders. Subsequently, the products are primed and loaded onto pallets. This unique manufacturing process for gypsum fibre material is the basis for the homogeneous density throughout the entire GIFAtec material thickness.

Building biological material data

	GIFAfloor FHB / GIFAfloor LEP	
Fire protection		
Building material class acc. to EN 13501-1	A1	Non-combustible
Hygrothermal values		
Calculation value of the thermal conductivity λ_R	0.44	W/mK
For designing a floor heating system λ_{10}	0.30	W/mK
Water vapour diffusion resistance μ	30/50	–
Specific heat capacity c	> 1000	J/(kgK)
Thermal expansion coefficient α	$12.9*10^{-6}$	1/K
Changes in length at temperature change	≤ 0.02	mm/(mK)
Calculation value of the length change * (acc. to Z-9.1-517)	≤ 0.6	mm/m
Hygrothermal installation conditions (stationary)	+10° to +35°C	approx. 45 – 75 % rel. air humidity
Hygrothermal usage conditions (stationary)	-10° to +35°C	approx. 35 – 75 % rel. air humidity
Surface water absorption capacity acc. to EN 20535 (acc. to Kopp)	< 300	g/m²
General strength values		
Surface hardness (Brinell)	≥ 40	N/mm²
Pull off bond strength	≥ 1.0	N/mm²
Others		
Surfaces primed on both sides for transport purposes only, to bond dust and reduce water absorption capacity	Yes	–
Ability to bear vertical dynamic maximum working load acc. to EN 13964 without additional treatment measures	≥ 100 000	Load change
Value of water vapour diffusion resistance μ of the optional factory-made lamination of aluminum foil on the base	$9.3x10^6$	Practically vapour-tight

** The calculation value of the length change acc. to German National Technical Approval Z-9.1-517 is to be used for calculation of joint widths for the GIFAfloor hollow floor. This calculation value is based on the measurements of the length change of the material with a change of the relative humidity by 30% at 20°C and incorporates additional safety margins.*

Notes on the structural properties

Loads

The EN 13213 Hollow floors defines the test procedures and classifications of hollow floor systems. (4.1.1 Note: “Area loads should not be taken as criterion, only the point load is the determining factor..”). The imposed loads of GIFAfloor hollow floors stated in the tables are the permissible point or individual loads. Imposed loads are variable or movable loads (e.g. people, furniture…), which can act on the GIFAfloor hollow floors.
GIFAfloor hollow floors are suitable for dynamic loads.

Dynamic loads, such as e.g. pallet trucks (lift trucks + load) for the highest planned/determined wheel point load should be multiplied by a safety factor / dynamic coefficient φ=1.5 to determine the required load capacity of the GIFAfloor hollow floor. The spacing of the introduced loads (e.g. wheel spacing) must be considered as one load with spacings < 600 mm. If the wheel contact area is less than a square with an edge length of 25 mm, additional measures may prove necessary. To achieve the corresponding carrying capacity of the GIFAfloor load bearing layer, suitable Knauf hollow floor pedestals must be used.

Assumed load capacities acc. to EN 1991-1-1/NA:2010-12 *

Class	Utilization	Examples	kN **
	No category assigned	Non-accessible sills	n/a
A1	Attic space	Not suitable for residential purposes but accessible loft up to 1.80 m clearance	1.0
A3	Living rooms and lounges	Rooms and corridors in residential buildings, bedrooms in hospitals, hotel rooms incl. the corresponding kitchens and bathrooms	1.0
B1	Offices, working spaces and corridors	Corridors in office buildings, office areas, doctors practices without heavy equipment, waiting rooms, lounges including the corridors	2.0
B2		Corridors and kitchens in hospitals, hotels, retirement homes, corridors in boarding schools etc.; treatment rooms in hospitals including surgery rooms without heavy equipment; cellars in residential buildings	3.0
B3		Just like B1 and B2, but with heavy equipment	4.0
C1	Rooms, assembly rooms and areas that can be used for gatherings of persons (with the exception of categories specified under A, B, D)	Areas with tables, e.g. crèches, day nurseries, classrooms, cafes, restaurants, dining halls, reading rooms, reception rooms, staff rooms	4.0
C2		Areas with fixed seating, e.g. surfaces in churches, theatres or cinemas, congress rooms, auditoria, waiting rooms	4.0
C3		Freely walkable areas, e.g. museum and exhibition areas, entrance areas in public buildings and hotels as well as the corridors in utilization category C1 to C3	4.0
C4		Sports and play areas, dancing halls, sports halls, gymnastic rooms, power and weight training rooms, stages	7.0
C5		Areas for large gatherings of people, e.g. in buildings such as concert halls, terraces and entry areas as well as grandstands with fixed chairs	4.0
D1	Sales rooms	Areas in sales rooms up to 50 m² space in residential, office and comparable buildings	2.0
D2		Areas in retail stores and department stores	4.0
D3		Areas similar to D2 but with increased point loads due to high storage shelves	7.0
E1	Workshops, factory halls and storerooms	Areas in factories and light-duty workshops	4.0
E2		General storage areas including libraries	7.0
E3		Areas in factories and workshops with medium and heavy-duty operation	10.0
T1	Stairs and stair landings	In residential buildings, office buildings and doctors surgeries without heavy equipment	2.0
T3		Entrances and steps from grandstands without fixed seating, serving as an escape route	3.0

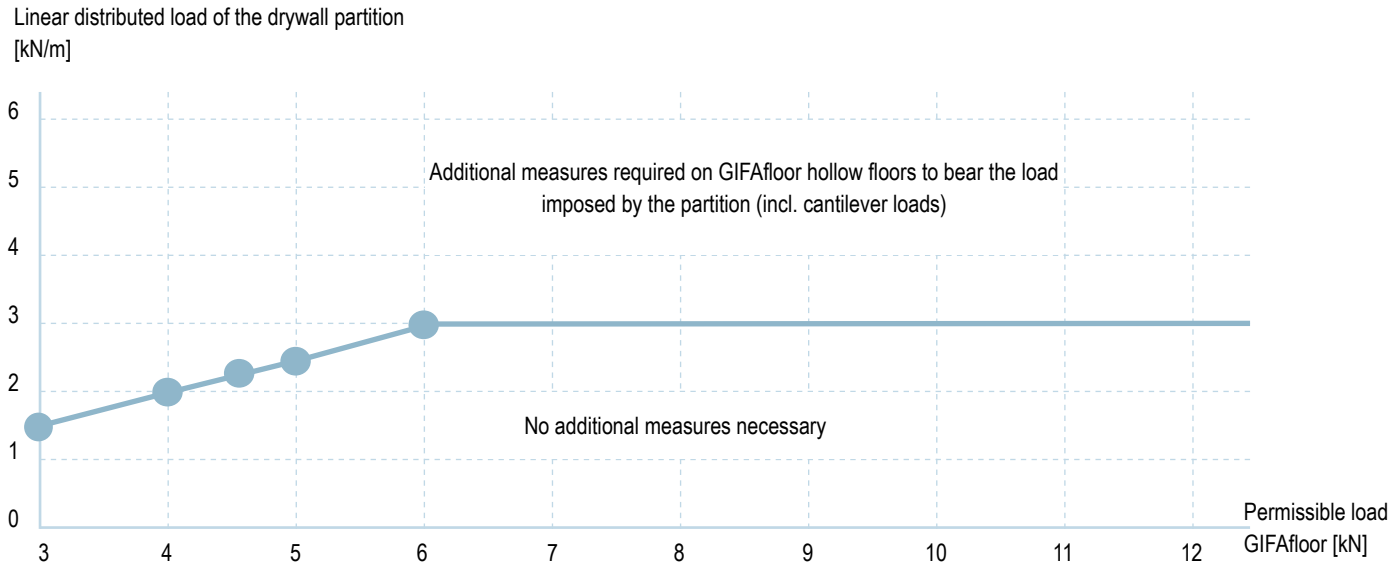
** In Eurocode 1: Part 1 – 1 General actions - Densities, self-weight, imposed loads for buildings, based on the above mentioned EN, is assumed from a load application by a square with an edge length of 50 mm.*

*** The above mentioned assumed load capacities (individual loads / point loads) are “predominantly permanent (static) loads.”*

If higher loads are intended for the use of the building, they are obligatory for the structural design of the GIFAfloor system selection.

Drywall partitions on GIFAfloor hollow floors F181.de and F182.de

(non-loadbearing interior partitions acc. to DIN 4103-1:2015-06)



On GIFAfloor hollow floors with a load capacity of < 6.0 kN, the drywall partitions can be applied with a linear distributed load, which complies with half the load capacity of the GIFAfloor at every position on the floor without the need for additional measures.

On GIFAfloor hollow floors with a load capacity of ≥ 6.0 kN, the drywall partitions can be applied with a linear distributed load ≤ 3.0 kN/m at every position on the floor without the need for additional measures.

Should the expected imposed load from partitions and cantilever loads be greater than anticipated, an appropriate quantity of suitable additional pedestals must be arranged underneath the partitions / partition areas concerned. Alternatively, the load capacities for GIFAfloor in these areas must be reduced to the value of the partition-linear distributed load (e.g. with subsequent partition installation).

The linear distributed load of a partition is calculated from the product's surface weight per m² multiplied by the wall height in m. The surface weight of Knauf partitions can be found in the Knauf W11.de system data sheet.

F181.de GIFAfloor hollow floor permissible load capacities* [kN] and load deflection values ** [mm] (single-layer systems)

GIFAfloor	**FHB 25**	**FHB 25**	**FHB 28**	**FHB 28**	**FHB 32**	**FHB 32**	**FHB 38**	**FHB 38**
Pedestals***	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X
Permissible load [kN]	3.0	4.0	4.0	4.0	5.0	6.0	6.0 ****	7.0
Acting load [kN]	Deflection [mm] of the GIFAfloor hollow floors at the weakest point without floor covering with acting point load of 25x25 mm indentor. **							
7								2.0
6						2.0	2.3 ****	1.7
5					2.0	1.8	1.8	1.4
4		2.0	1.8	1.8	1.7	1.5	1.5	1.1
3	1.8	1.5	1.5	1.3	1.4	1.2	1.1	0.8
2	1.3	1.1	1.2	1.0	*1.0*	0.9	0.8	0.6
1	0.8	0.6	*0.7*	0.5	*0.6*	0.4	0.4	0.2

** Certified by testing in acc. to EN 13213 (safety factor 2) and application guideline from the BVS issued 04/2011*

*** Decision-making aid for selection and definition of a suitable floor covering and a suitable adhesive system for the expected load. With soft floor coverings, an appropriate GIFAfloor filler/leveller suitable for the floor is required. With hard floor coverings, the floor covering stiffness in conjunction with the load distribution effect of the floor covering and the adhesive thickness in practice leads to a considerable reduction of the deflection of the overall hollow floor construction.*

If movable loads such as pallet trucks are planned, the highest wheel point load should be multiplied by the dynamic coefficient φ=1.5 to determine the required load capacity. If the wheel contact area is less than a square with an edge length of 25 mm, additional measures may prove necessary.

******Pedestals: S = system grid of the pedestals 600 x 600 mm***
R = additional pedestals in the centre between the pedestals of the rim
X = additional pedestals in the system grid centre (at the intersection point of the diagonals of the system grid)

Observe the special pedestal designs for fire resistance "from below".

***** only acc. to breaking load criteria (increased deflection value)*

Italics: interpolated values

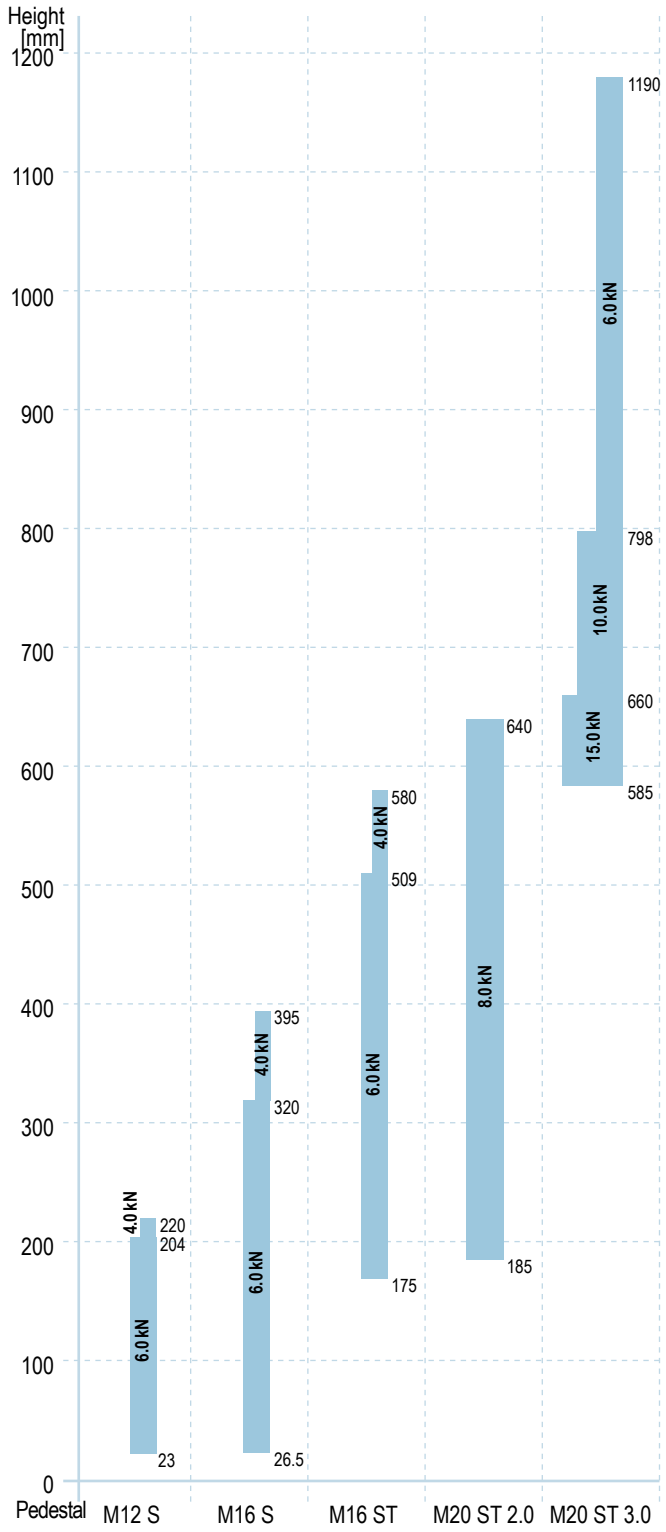
F182.de GIFAfloor FHBplus/FHBultra permissible load capacities* in [kN] and load deflection values ** [mm] (double-layer systems)

GIFAfloor	FHBplus	FHBplus	FHBultra	FHBultra	FHBplus	FHBplus	FHBultra	FHBultra	FHBplus	FHBplus	FHBultra	FHBultra	FHBplus	FHBplus	FHBultra	FHBultra
Panels	25+18	25+18	25+25	25+25	28+18	28+18	28+28	28+28	32+18	32+18	32+32	32+32	38+18	38+18	38+38	38+38
Total thickness [mm]	43	43	50	50	46	46	56	56	50	50	64	64	56	56	76	76
Pedestals***	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X	S+R	S+R+X
Permissible load	4.5	5.0	5.5	6.5	5.5	6.0	8.0	10.0	9.0	10.0	12.0	15.0	12.5	13.0	15.0	20.0
Acting load [kN]	Deflection [mm] of the GIFAfloor hollow floors at the weakest point without floor covering with acting point load of 25x25 mm indentor **															
20																1.9
19																1.9
18																1.9
17																1.8
16																1.8
15												1.9			2.0	1.8
14												1.7			1.9	1.7
13												1.6	2.0 (at 12.5)	1.9	1.9	1.7
12											1.5	1.6	1.9	1.8	1.8	1.6
11											1.4	1.5	1.8	1.7	1.7	1.6
10								2.0		1.9	1.3	1.5	1.6	1.6	1.5	1.5
9								1.7	1.9	1.8	1.2	1.4	1.5	1.5	1.4	1.5
8							2.0	1.3	1.7	1.4	1.2	1.3	1.4	1.4	1.3	1.4
7				2.0 (at 6.5)			1.7	1.2	1.5	1.2	1.0	1.2	1.2	1.2	1.1	1.3
6			2.0 at 5.5	2.0	2.0	2.0	1.5	1.1	1.3	1.0	0.9	1.0	1.1	1.1	1.0	1.3
5	1.8 (at 4.5)	1.9	1.9	1.9	1.9	1.8	1.4	0.9	1.1	0.8	0.8	0.8	1.0	1.0	0.9	1.2
4	1.7	1.5	1.6	1.5	1.6	1.4	1.1	0.8	0.9	0.6	0.7	0.6	0.9	0.9	0.7	1.0
3	1.4	1.2	1.3	1.1	1.3	1.1	0.9	0.7	0.7	0.5	0.6	0.5	0.7	0.7	0.5	0.9
2	1.1	0.9	0.8	0.8	1.0	0.8	0.6	0.6	0.5	0.3	0.5	0.4	0.5	0.5	0.3	0.7
1	0.6	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.4

*** Pedestals:
S = system grid of the pedestals 600 x 600 mm
R = additional pedestals in the centre between the pedestals of the rim
X = additional pedestals in the system grid centre (at the intersection point of the diagonals of the system grid)
Observe the special pedestal designs for fire resistance “from below”.

** Certified by testing in acc. to EN 13213 and application guideline from the BVS issued 04/2011*
The loadbearing capacity of the certified double-layer systems is determined mainly by the thickness of the lower load bearing layer in addition to the selection of suitable pedestals. A reduction in the thickness of the lower layer, even when the same overall bearing layer thickness is retained, reduces the load bearing capacity of the overall system. Should the upper layer of the system be weakened by milling, e.g. such as those required for heating pipes, the loadbearing capacities such as those for the single-layer hollow floor system F181.de are achieved with the lower load bearing thickness (see page 6). With milling in the lower layer, the loadbearing capacity of the system for the remaining thickness underneath the milled areas must be estimated. The specifications on page 6 relating to the design of drywall partitions have to be observed.
*** Decision-making aid for selection and definition of a suitable floor covering and a suitable adhesive system for the expected load. With soft floor coverings, an appropriate GIFAfloor filler/leveller suitable for the floor is required. With hard floor coverings, the floor covering stiffness in conjunction with the load distribution effect of the covering and the adhesive thickness in practice leads to a considerable reduction of the deflection of the overall hollow floor construction.*
If movable loads, for example, such as pallet trucks are planned, the highest wheel point load should be multiplied by the dynamic coefficient φ=1.5 to determine the required load capacity.
If the wheel contact area is less than a square with an edge length of 25 mm, additional measures may prove necessary.
Italics: interpolated values

Permissible loadbearing capacity of the Knauf hollow floor pedestals in dependence on the pedestal height



The installation of heavy stringers is only possible in conjunction with the M16 and M20 pedestals up to a permissible load of 5.0 kN. The installation of gaskets up to a permissible load of 15.0 kN is possible, and alternatively with loads >15 kN the pedestal heads should be protected with PE adhesive tape (e.g. packaging tape) before fixing the GIFAfloor joint with glue. The installation of insulation pads up to a permissible load of 6.0 kN is possible. The permissible load specifications are based on testing of the pedestals acc. to EN 13213 and incorporate a safety factor of 4.

Load class assignment of hollow floors acc. to EN 13213 *

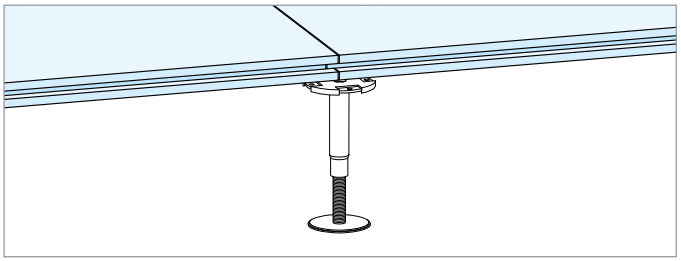
Load class	Breaking load	Safety factor	Load capacity**
1	≥ 4 kN	2	2 kN
2	≥6 kN	2	3 kN
3	≥8 kN	2	4 kN
4	≥ 9 kN	2	4.5 kN
5	≥ 10 kN	2	5 kN
6	≥ 12 kN	2	6 kN

** The EN 13213 Hollow floors defines the test procedures and classifications of hollow floor systems. (4.1.1 Note: "Area loads should not be taken as criterion, only the point load is the determining factor.")*

The test is performed divergent to EN 1991-1-1/NA:2012-12 with a 25x25 mm indentor (enhanced point load simulation) until failure of the floor system without floor covering at its weakest point.

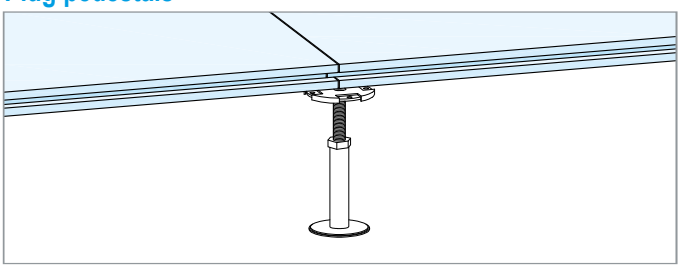
*** The load capacity is calculated from the ratios of the breaking load and the safety factor*

Thread pedestals



Knauf thread pedestals M12 S or M16 S are made of galvanized steel.
The base consists of an M12 or M16 threaded rod with base plate.
The pedestal head consists of a tube with a wall thickness of 2.0 mm with an internal thread and a welded-on base plate.
The height of the thread pedestal is adjusted by rotating the pedestal head.
The minimum screw-in depth (= thread length of the tube) is 15 mm. After setting is complete, secure the pedestal against changes in height with the Knauf thread locking glue EC1.

Plug pedestals



Knauf plug pedestals M16 ST and M20 ST are made of galvanized steel.
The base plate consists of a tube with a wall thickness of 2.0 mm, and for M20 ST 3.0 it is 3.0 mm with a welded-on base plate.
The head section consists of an M16 or M20 threaded rod with welded-on head plate.
The height adjustment is undertaken with the screw nut on the rod. The minimum screw-in depth of the threaded rod in the pipe is 20 mm. After setting is complete, secure the pedestal against changes in height with the Knauf thread locking glue EC1.

Notes on fire resistance

The specifications marked with plus offer additional application options, which are not directly included in the Certificate of Usability (in Germany).
On the basis of our technical assessments, we assume that these marked design solutions can be assessed as a non-significant divergence. We provide the documentation on which this assessment is based, such as experts opinions or technical assessments, 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 explicity recommended by Knauf. The validity and up-to-datedness of the stated proofs have to be considered.

Fire resistance effect

GIFAfloor hollow floors offer protection in case of exposure to fire from the floor cavity to the room above the GIFAfloor. In case of fire exposure from the top of the GIFAfloor, it assures the loadbearing capacity of the basic floor for the duration of the classification.

Fire resistant (F30/REI30)*

Tested load:			1.5 kN/m²	1.65 kN/m²	2.0 kN/m²
GIFAfloor		FHB	–	≥ 28 mm	≥ 25 mm
	or	FHBplus	≥25 mm+≥18 mm	plus	plus
	or	FHBultra	plus	plus	plus
Knauf pedestal		M20 ST 3.0	≤ 435 mm	≤ 600 mm	≤ 640 mm
	or	M20 ST 2.0	≤ 435 mm	≤ 600 mm	≤ 640 mm
	or	M16 ST	–	–	≤ 580 mm
	or	M16 S	–	–	≤ 395 mm
	or	M12 S	–	–	≤ 210 mm
		On a basic floor	**	**	**
Fire resistance:			F30	F30	REI 30 plus
Classification standard:			DIN 4102-2	DIN 4102-2	EN 13501-2
Proof:			AbP P-MPA-E-14-003	AbP P-MPA-E-14-013	Confirmation MPA-DD

Highly fire retardant (F60/REI60)*

Tested load:			1.5 kN/m²	1.65 kN/m²	2.0 kN/m²
GIFAfloor		FHB	–	≥ 32 mm	≥ 32 mm
	or	FHBplus	≥25 mm+≥18 mm	plus	plus
	or	FHBultra	plus	plus	plus
Knauf pedestal		M20 ST 3.0	≤ 500 mm	≤ 600 mm	≤ 640 mm
	or	M20 ST 2.0	–	≤ 600 mm	≤ 640 mm
	or	M16 ST	–	–	≤ 500 mm
	or	M16 S	–	–	≤ 395 mm
	or	M12 S	–	–	–
		On a basic floor	**	**	**
Fire resistance:			F60	F60	REI 60 plus
Classification standard:			DIN 4102-2	DIN 4102-2	EN 13501-2
Proof:			AbP P-MPA-E-14-003 and P-MPA-E-03-046	AbP P-MPA-E-14-013	Confirmation MPA-DD

Fire-proof (F90/REI90) with fire exposure from the top

GIFAfloor		FHB	–
	or	FHBplus	≥ 32 mm + ≥ 18 mm
	or	FHBultra	plus
Knauf pedestal		M20 ST 3.0	No requirement***
	or	M20 ST 2.0	No requirement***
	or	M16 ST	No requirement***
	or	M16 S	No requirement***
	or	M12 S	No requirement***
		On a basic floor	**
Fire resistance:			F90/REI 90 plus
Proof:			Expert opinion MPA-DD plus

* *The tests were performed with fire from the floor cavity (critical side of the construction). The classifications therefore apply as well with fire exposure from the top side of the floor.*

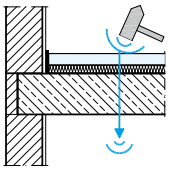
** *The basic floor and adjacent components must have at least the same classification as the GIFAfloor hollow floor.*

*** *The basic floor and the grid for the GIFAfloor hollow floor is located on the protected side, not exposed to the fire.*

Notes on sound protection

The vertical airborne sound protection is provided by a solid slab and is positively influenced by the additional installation of the GIFAfloor hollow floor.

The verification of the new DIN 4109:2016-07 is no longer implemented by using the calculation value but rather the “test facility values”. 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.



Standard impact sound level $L_{n,w}$

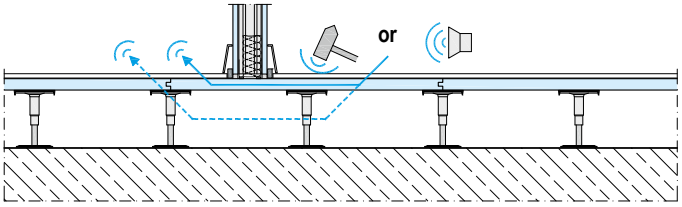
The lower the weighted normalized impact sound pressure level $L_{n,w}$, the better the footfall sound insulation of the separating constructional component to the room located underneath it. The weighted impact sound improvement index ΔL_w defines the improvement of the footfall sound insulation on a standard ceiling / slab.

Normalized flanking impact sound pressure level $L_{n,f,w}$

The normalized flanking impact sound pressure level $L_{n,f,w}$ defines the transferred footfall sound from the room to the adjacent room via the hollow floor construction. The lower the weighted normalized impact sound level $L_{n,f,w}$, the better the horizontal footfall sound insulation of the installed hollow floor.

Flanking normalized level difference $D_{n,f,w}$

The flanking normalized level difference $D_{n,f,w}$ defines the airborne sound transmission via the hollow floor construction of a room to the adjacent room. The lower the flanking normalized level difference $D_{n,f,w}$, the better the horizontal airborne sound insulation of the installed hollow floor.



Sound protection

GIFAfloor hollow floor	Flanking normalized level difference, weighted normalized impact sound level and weighted impact sound improvement index on solid ceiling / slab	Configuration								
		Without covering		With covering						
			With joint + separation	VM = 19 dB	VM = 23 dB	VM = 26 dB	VM = 28 dB	VM = 29 dB	VM = 30 dB	VM = 31 dB
F181.de: FHB 25	Flanking normalized level difference $D_{n,f,w,P}$ [dB]	~40	~52	–	–	–	~48	–	–	–
	Weighted normalized impact sound level $L_{n,f,w,P}$ [dB]	~90	~65	–	–	–	~51	–	–	–
	Weighted impact sound improvement index $\Delta L_{w,P}$ [dB]	~13	–	–	–	–	~26	–	–	–
F181.de: FHB 28	Flanking normalized level difference $D_{n,f,w,P}$ [dB]	39	52	–	–	–	45	–	–	–
	Weighted normalized impact sound level $L_{n,f,w,P}$ [dB]	94	60	–	–	–	52	–	–	–
	Weighted impact sound improvement index $\Delta L_{w,P}$ [dB]	12	–	–	–	–	25	–	–	–
F181.de: FHB 32	Flanking normalized level difference $D_{n,f,w,P}$ [dB]	46*	55*	–	–	49*	–	–	–	–
	Weighted normalized impact sound level $L_{n,f,w,P}$ [dB]	79*	61*	–	–	49*	–	–	–	–
	Weighted impact sound improvement index $\Delta L_{w,P}$ [dB]	16*/**	–	–	–	29*/**	–	–	–	–
		18 19***	–	22 22***	25 25***	–	–	30 30***	–	–
F181.de: FHB 38	Flanking normalized level difference $D_{n,f,w,P}$ [dB]	41	56	–	–	–	–	–	–	–
	Weighted normalized impact sound level $L_{n,f,w,P}$ [dB]	89	47	76	62	–	–	–	53	–
	Weighted impact sound improvement index $\Delta L_{w,P}$ [dB]	18***	–	21***	25***	–	–	–	29***	31***
F182.de: FHBplus 32+18	Flanking normalized level difference $D_{n,f,w,P}$ [dB]	–	–	–	–	–	–	–	–	–
	Weighted normalized impact sound level $L_{n,f,w,P}$ [dB]	–	–	–	–	–	–	–	–	–
	Weighted impact sound improvement index $\Delta L_{w,P}$ [dB]	20***	–	23***	26***	–	–	31***	–	–
F182.de: FHBplus 38+18	Flanking normalized level difference $D_{n,f,w,P}$ [dB]	43	54	–	–	–	–	–	40	–
	Weighted normalized impact sound level $L_{n,f,w,P}$ [dB]	80	45	–	–	–	–	–	54	–
	Weighted impact sound improvement index $\Delta L_{w,P}$ [dB]	14 21***	–	16 25***	19 29***	–	–	25	–	– 35***

*) *Measurements in another test facility with lower pedestals* **) *with PGR insulation pads* ***) *With 5 mm PGR insulation pads and PE gaskets*

$D_{n,f,w,P}$ **[dB]** flanking normalized level difference, $L_{n,f,w,P}$ **[dB]** weighted normalized impact sound level, $\Delta L_{w,P}$ **[dB]** weighted impact sound improvement index are test values

Planning and convenient arrangement of joints

Every building material, building component and building structure changes dimensions as climate conditions vary. Deformations of building parts (e.g. allowed deflections) and (building) structures (e.g. settling of buildings) also occur due to the dead load of the structure and by additional loads. This is why joints are necessary and have to be planned accordingly. The joints should always be arranged where cracks are expected.

There are different kinds of joints in a building:

Separating joints divide the building into several parts. These joints have to be transferred to all building parts at exactly the same position.

Control joints (expansion joints) divide building parts into sections, which form a unit that is able to withstand the elongation/shrinkage without damage. These joints have to be assumed by all subsequent trades at the same position in the building.

Transition joints have to be placed in a building where the building material changes. Depending on their position they can also be achieved as a hair joint.

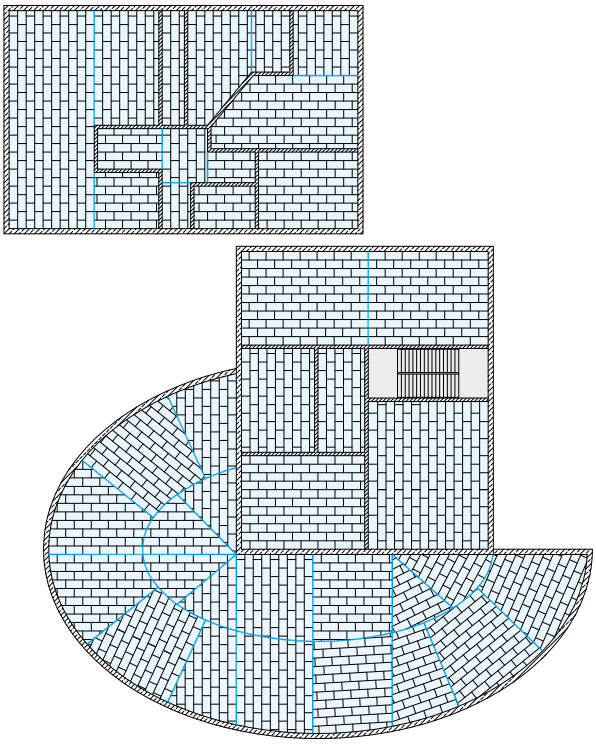
Perimeter joints have to be planned and implemented at all constructional component ends. They can function as expansion joints and have to be continued, e.g in the door opening zone as a joint with sufficient width. In case of changes of their direction (e.g. in case of L- or U-shaped areas), a continuation at least in one direction as an expansion joint is frequently necessary.

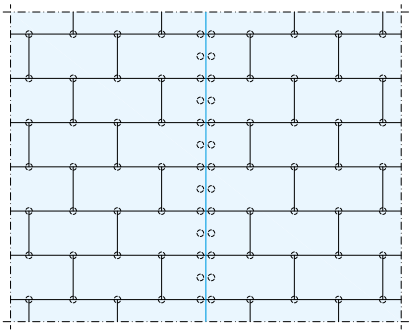
Acoustically effective separations of building parts (separation cuts / decoupling cuts / separation joints) separate partial areas from the primary building section and change its geometry, which has to be strictly followed when planning the expansion joints.

Form compact sections with the joints (preferred). The closer the areas get to an edge ratio of 1:1 (=square), the larger the areas can be. For asymmetric areas (e.g. trapezodial areas) special care is required when implementing the joints. The long edges are the decisive factor here.

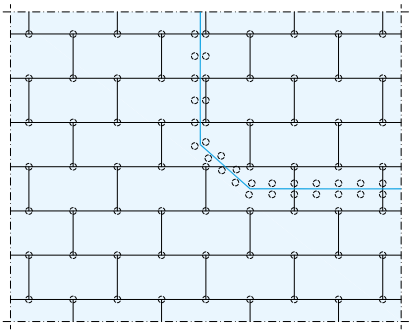
The joint design must correspond with the loadbearing capacity of the floor at every point.

Schematics not to scale

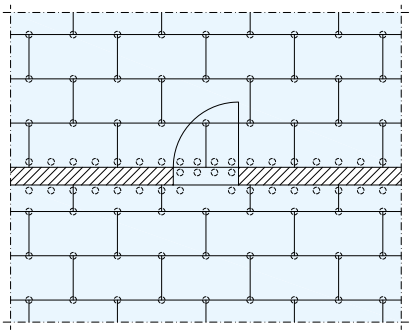




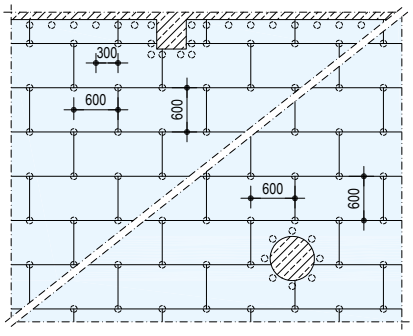
Configuration of a control joint with half the pedestal spacing in the perimeter area (shown with double row of pedestals).



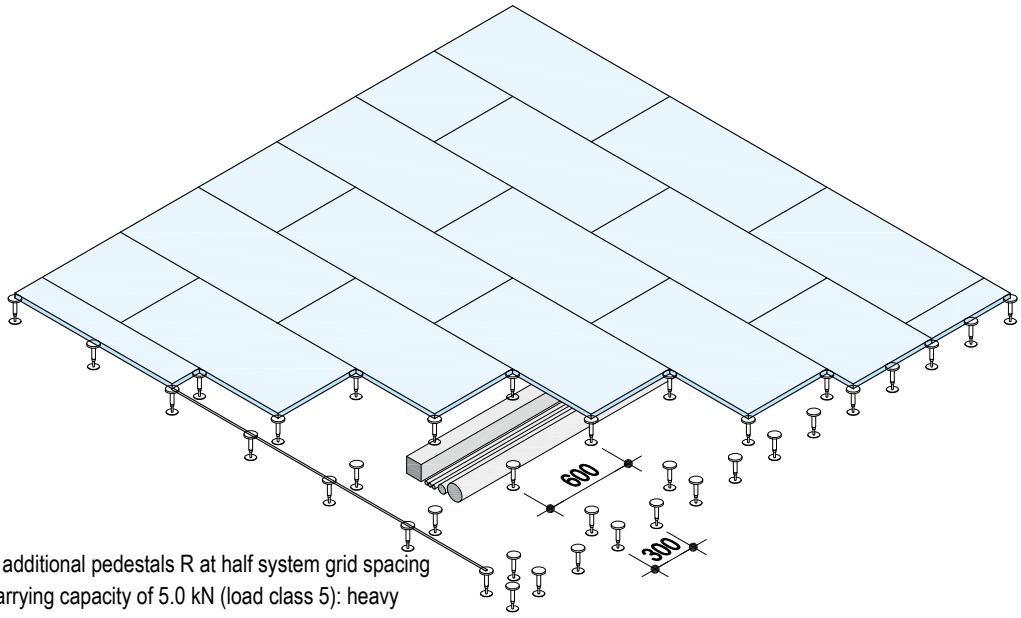
Acoustically effective separation joint underneath a planned drywall position.



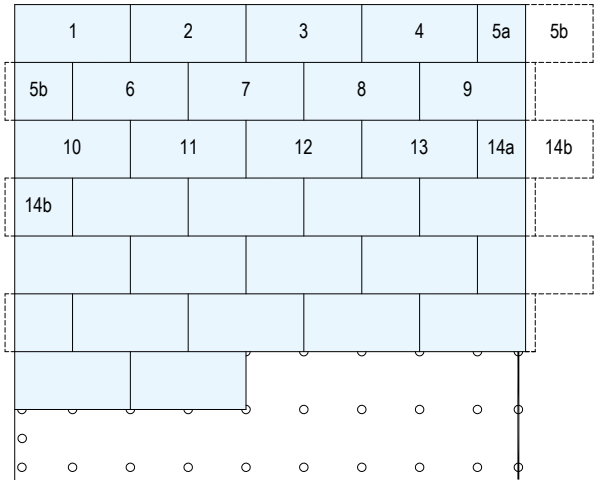
Reinforcement of the door opening zone using additional pedestals at the required separation joint.



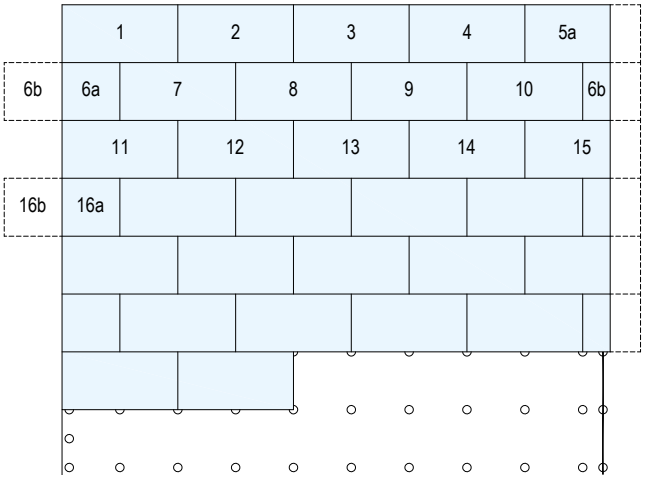
Pedestal arrangement, e.g. with rising components



In perimeter areas, always use additional pedestals R at half system grid spacing (300 mm). Alternatively up to carrying capacity of 5.0 kN (load class 5): heavy stringers

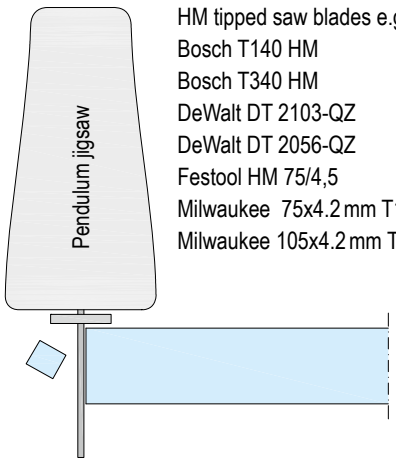


Use the cut panel in the next row



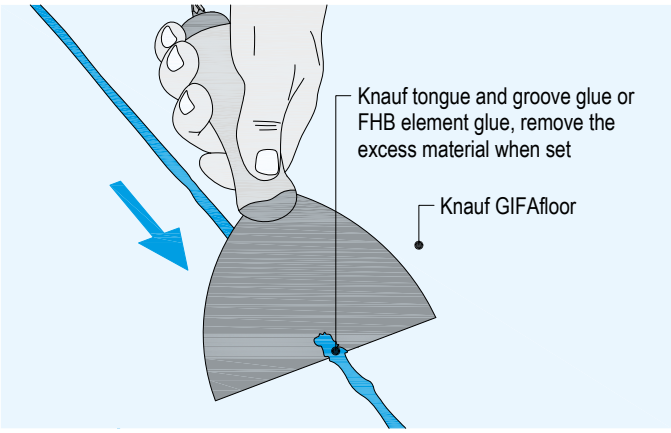
Use of the remaining panel in the same row

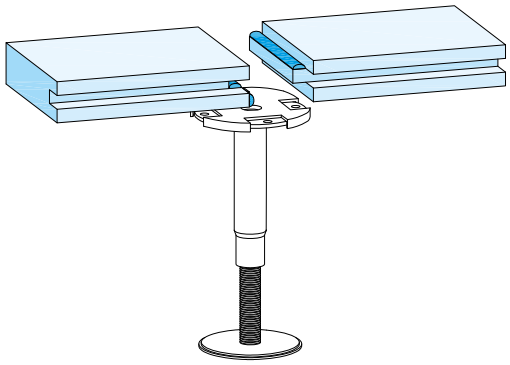
Cut off the tongue for connection to wall joints



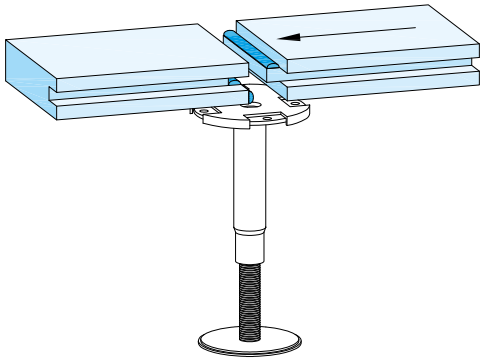
HM tipped saw blades e.g.:
Bosch T140 HM
Bosch T340 HM
DeWalt DT 2103-QZ
DeWalt DT 2056-QZ
Festool HM 75/4,5
Milwaukee 75x4.2 mm T141 HM
Milwaukee 105x4.2 mm T341 HM

Remove excess of the hardened glue

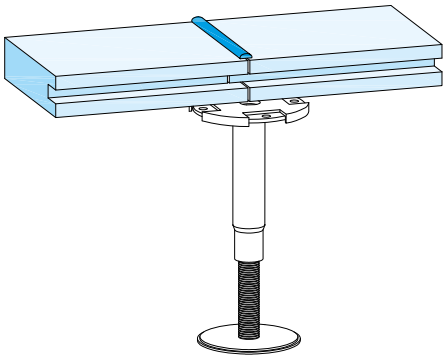




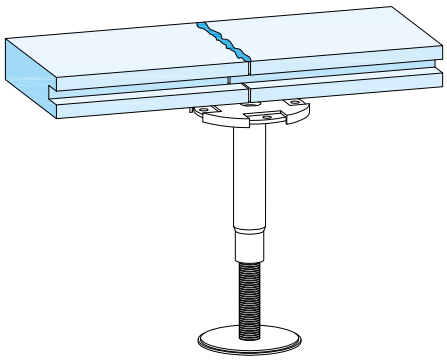
1)
Position the panel joint on the center of the pedestal.
Apply glue onto the front of the tongue and into the grove (see right).



2)
Laying sequence: Insert tongue into the groove.



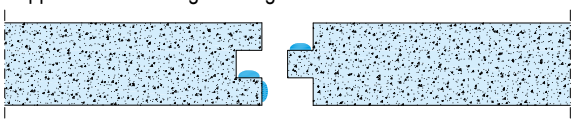
3)
Excessive glue that emerges top and bottom indicates sufficient glue is applied.



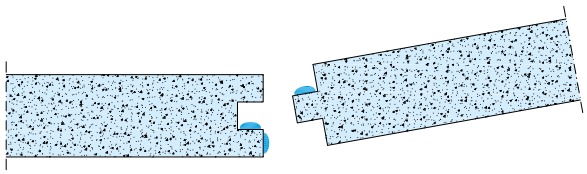
4)
Remove excess hardened glue with a sharp spatula
(see page 12)

Glueing of the elements

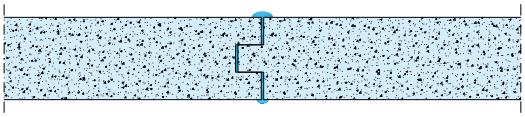
Glue application onto tongue and groove



Laying sequence: Insert tongue into the groove.



Excessive glue that emerges indicates sufficient glue.



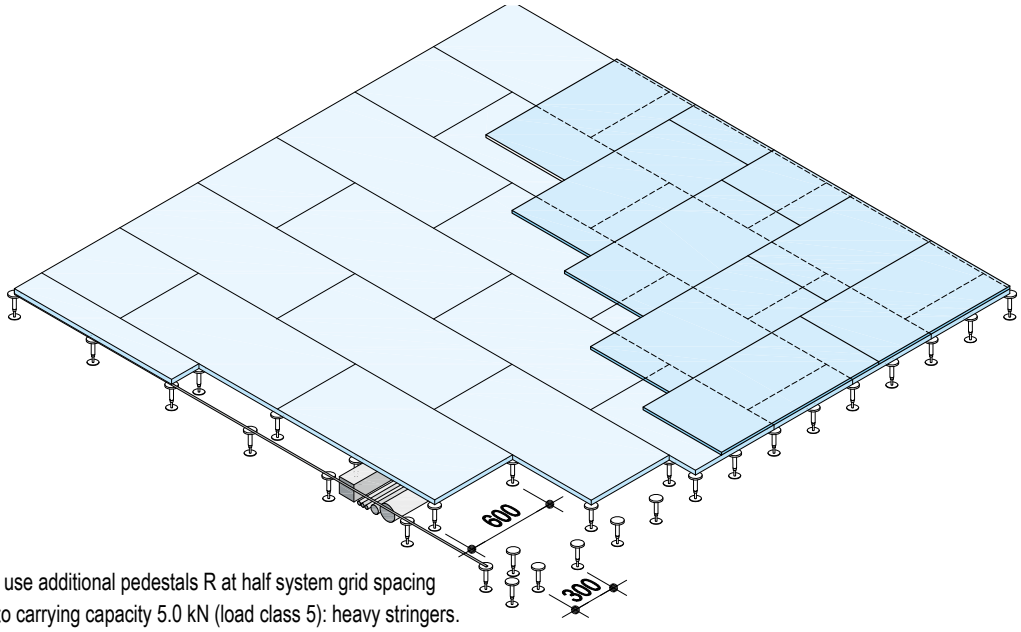
Priming of the laid floor

Prime with e.g. Knauf Estrichgrund (see F42.de). Application with a roller
Consumption: approx. 200 g/m².

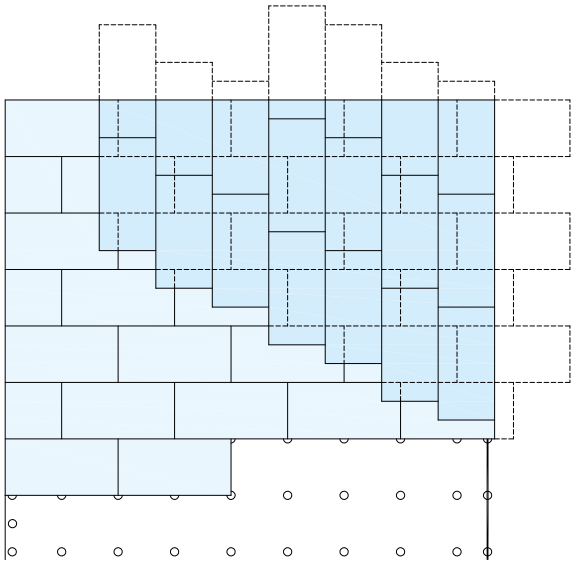
Application of Knauf N 410

Consumption: Knauf N 410 approx. 1.6 kg/m²/mm layer thickness.
Subsequent primer required.

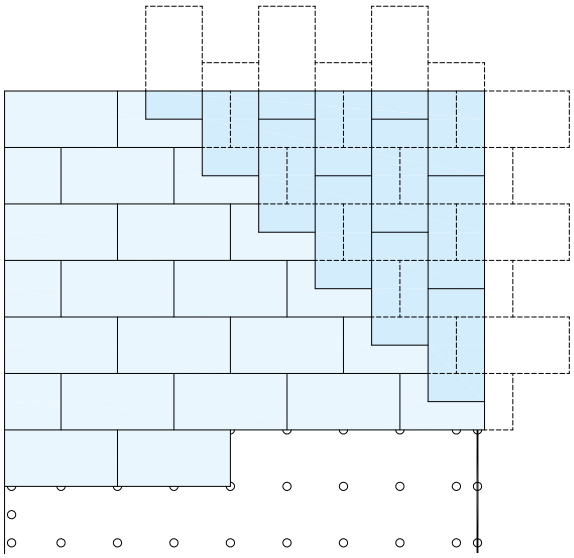
Installation and application of the second layer



In perimeter areas, always use additional pedestals R at half system grid spacing (300 mm) alternatively up to carrying capacity 5.0 kN (load class 5): heavy stringers.



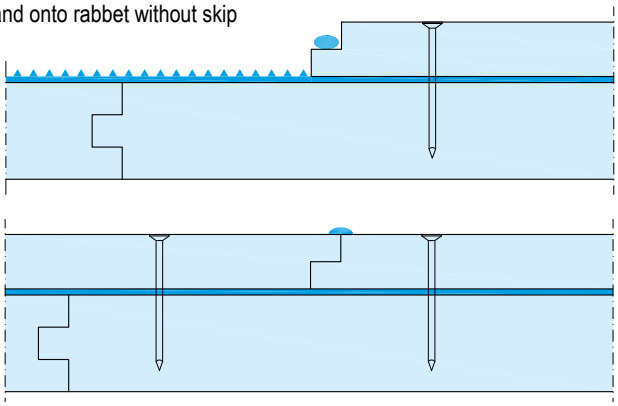
Joint offset of the second layer at least 20 cm.



Optimum joint offset of the second layer is 30 cm.

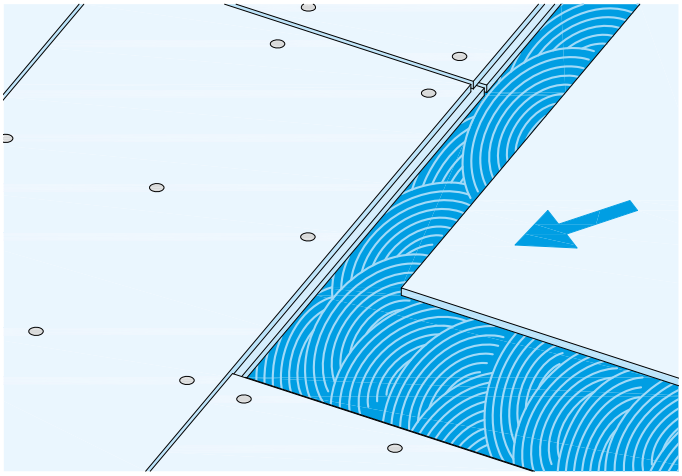
Laying of second layer (sketch not to scale)

Apply glue to full surface
and onto rabbet without skip



Apply LEP panels immediately into glue bed, load and fix with nails.

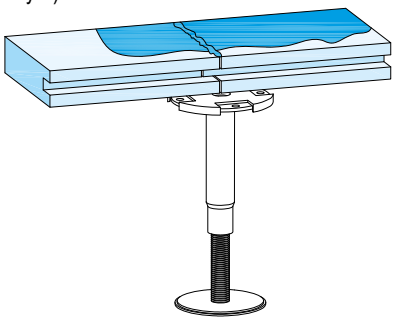
Embed the LEP panels into glue directly after application



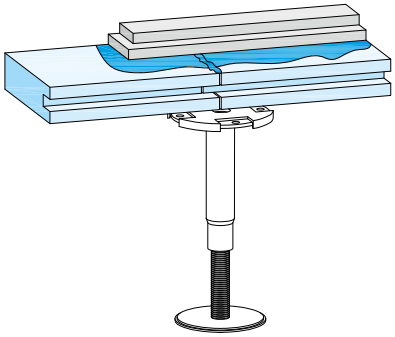
Glue application on first layer and onto the rabbets.
Apply load after positioning and fix with nails using compressed air
Nail spacing ≤ 30 cm.

Laying and glue bonding of the second layer

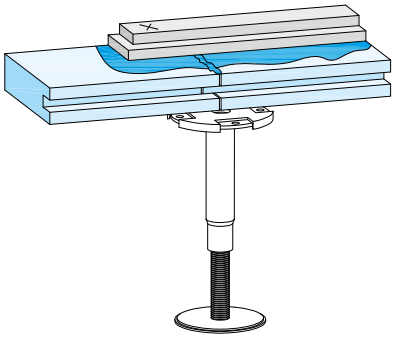
For bonding and joining of the tongue and groove of the first layer, refer to drawings 1 to 4 on page 13.
The rabbets of the GIFAfloor LEP panels shall be glued with Knauf Nut-/Feder-Klebstoff (glue for tongue and groove) or with Flächenklebstoff (area glue for second layer).



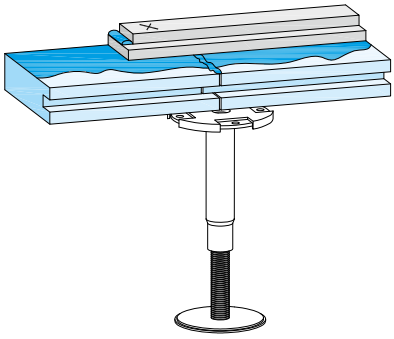
5)
Apply glue to full surface.



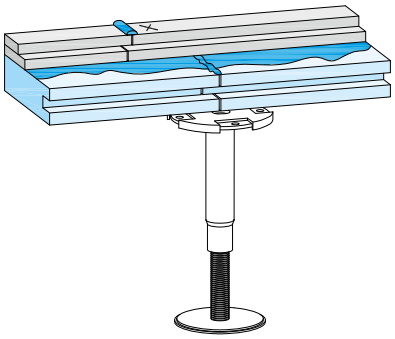
6)
Apply LEP panel into the glue immediately after glue application.



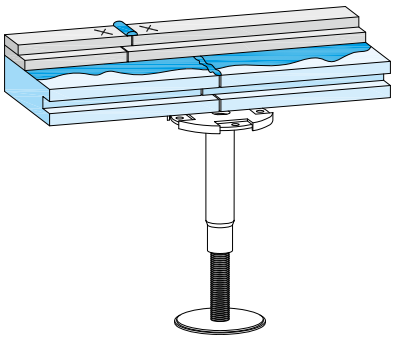
7)
Fix LEP panels to the layer below directly after embedding them into the glue bed on top of first layer. While applying nails with compressed air / impulse nailer, stand on the panel to be fixed so that your body weight pushes it onto the first layer.



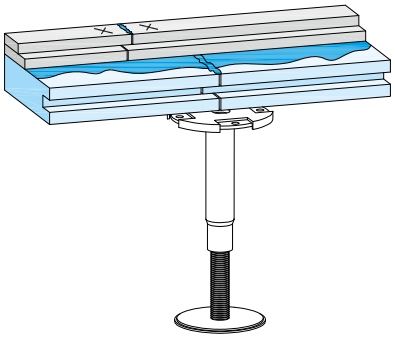
8)
Glue for subsequent panel, continue as described.



9)

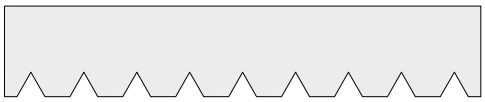


10)

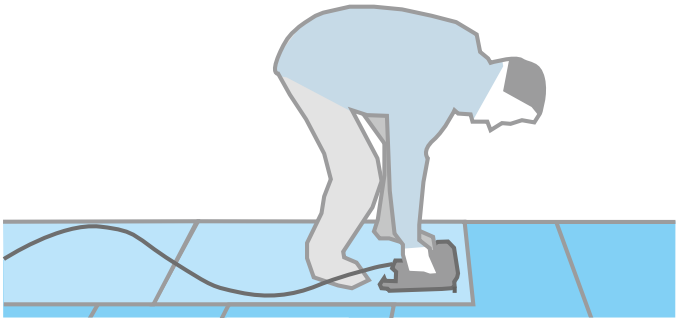


11)
Remove excess hardened glue
with e.g. a sharp spatula (see page 12).

Section of notched blade TKB B3 (scale 1:1)

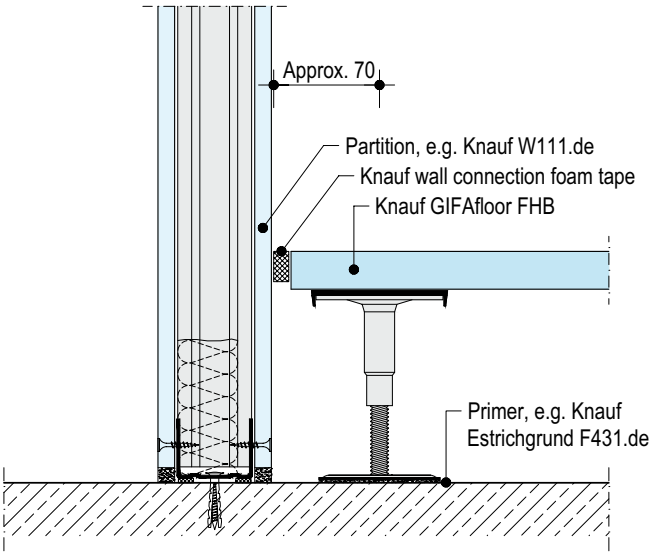


Fix by nailing with compressed air / impulse nailer while standing on the panel

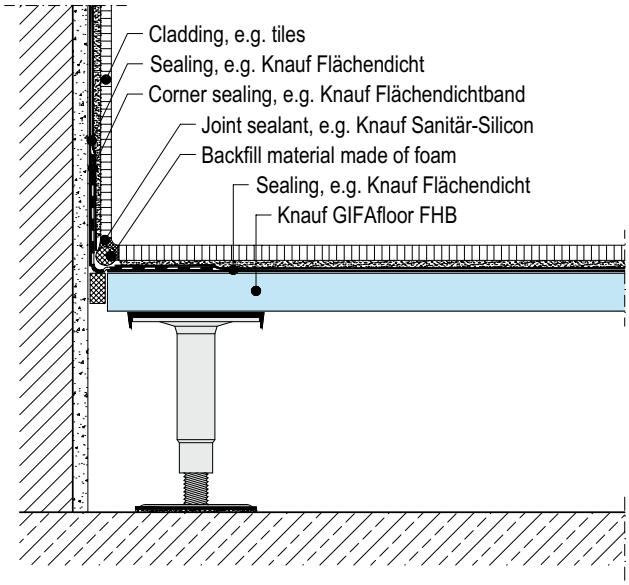


Compressed air nailer: e.g. Brad Nailer Paslode FN 1665.1 (operating pressure: 8.0 bar); nails, e.g.: Paslode F16x29 mm or Haubold SKN 16/30 C NK or SKN 16/25 C NK; gas impulse nailer: e.g. ITW impulse nailer IM65F 16 B-pack 19 – 64 mm; nails e.g. pack F16 – 25 mm (fuelcells + galv. brads)
Nail spacing ≤ 30 cm.

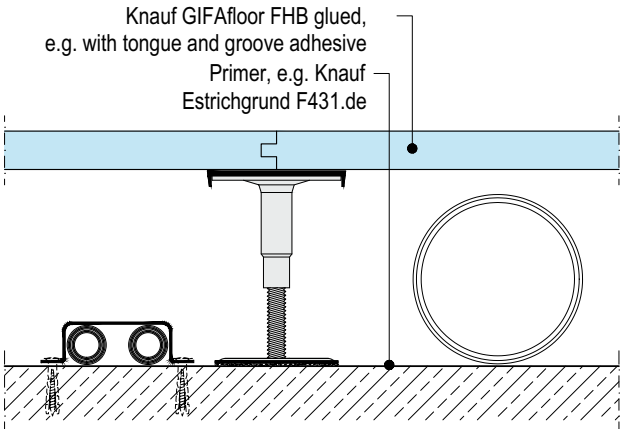
F181.de-V1 Connection to partition



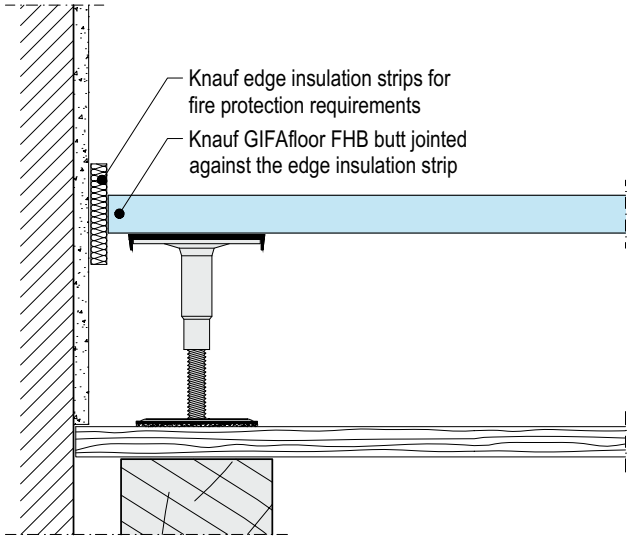
F181.de-V2 Connection to solid wall



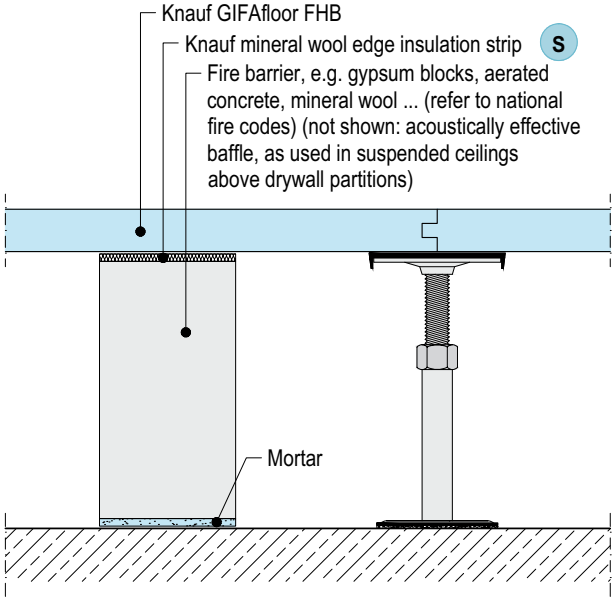
F181.de-V3 Use of the cavity for building services



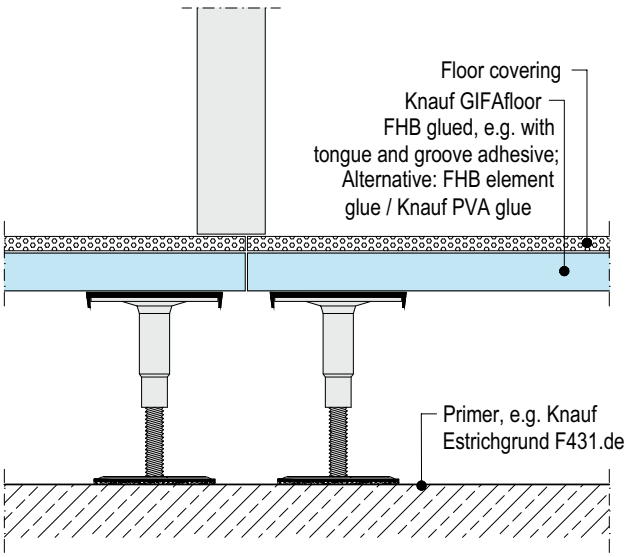
F181.de-V4 Pedestal positioning on wooden joist ceiling



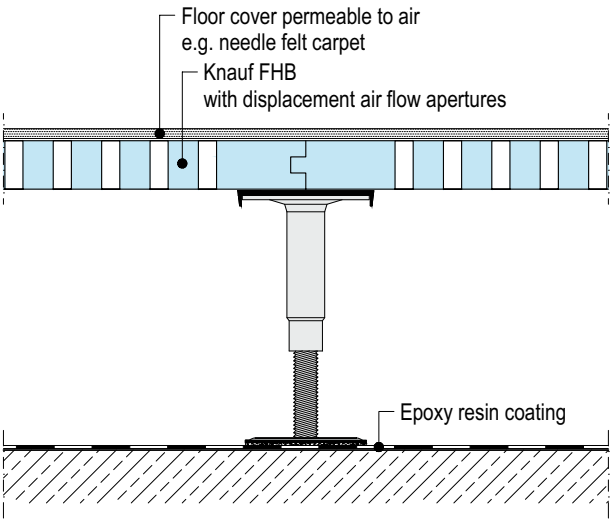
F181.de-V6 Bulkhead



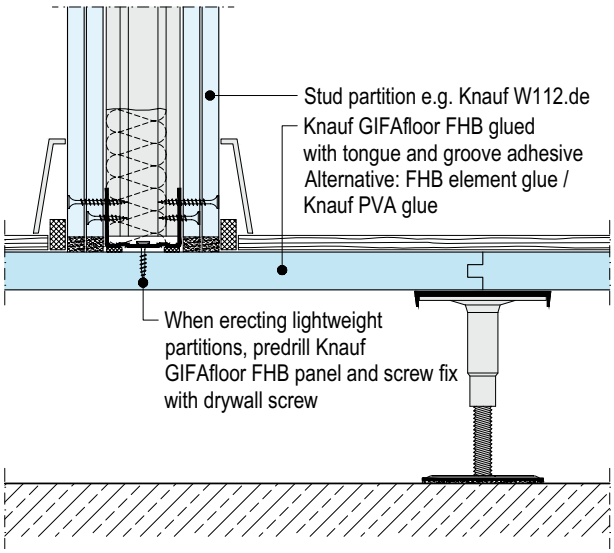
F181.de-V9 Joint arrangement under door leaf



F181.de-V7 Version with displacement air flow

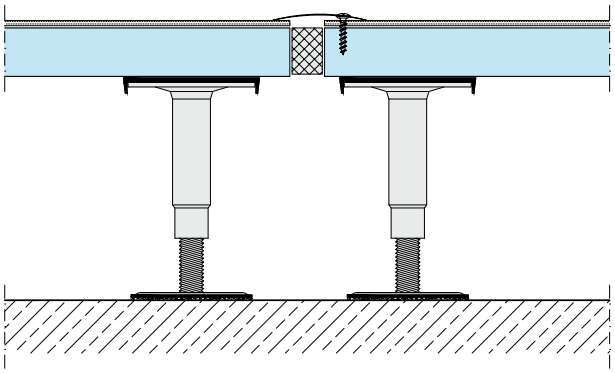


F181.de-V8 Partition on GIFAfloor FHB – W112.de

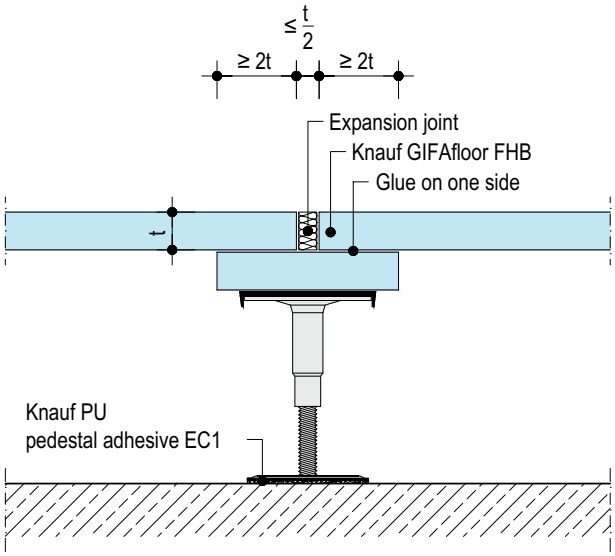


F181.de-V10 Installation of joint cover profile

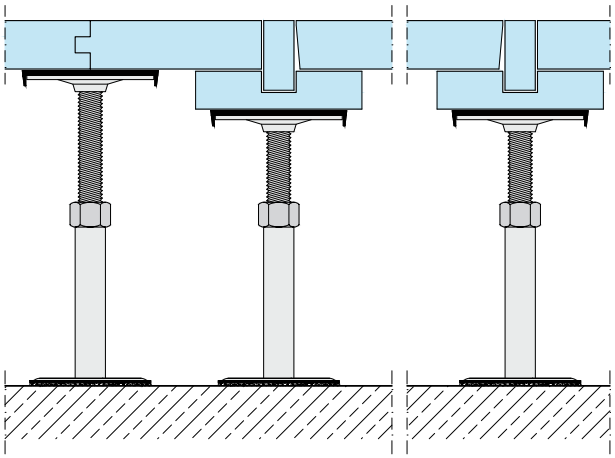
Caution:
Fix joint cover profile on one side only



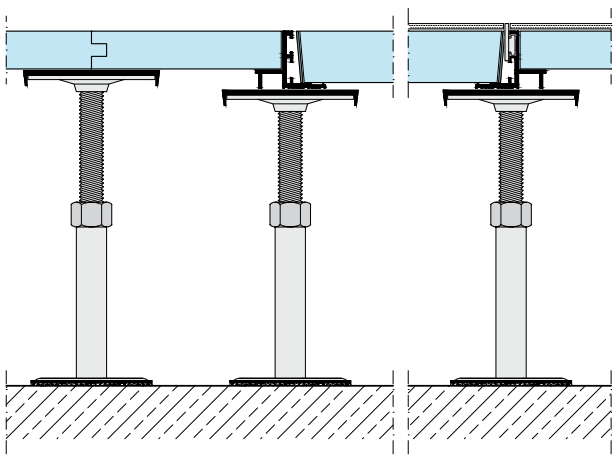
F181.de-V11 Joint with fire resistance underlay



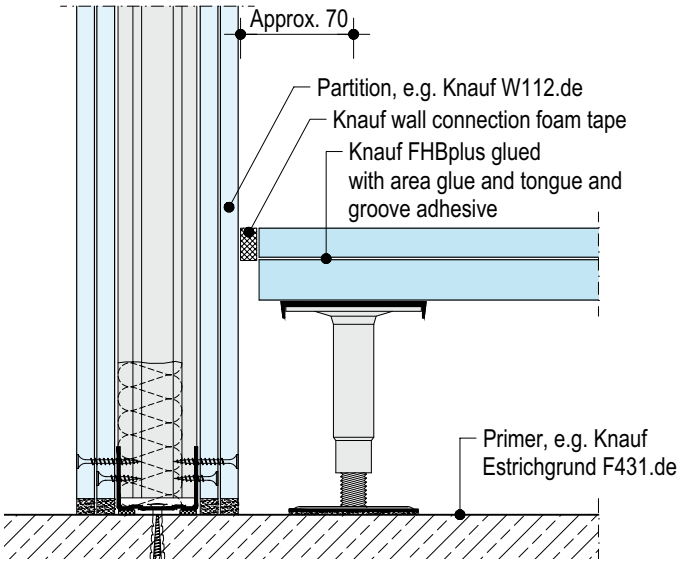
F181.de-V12 Access opening F30/F60



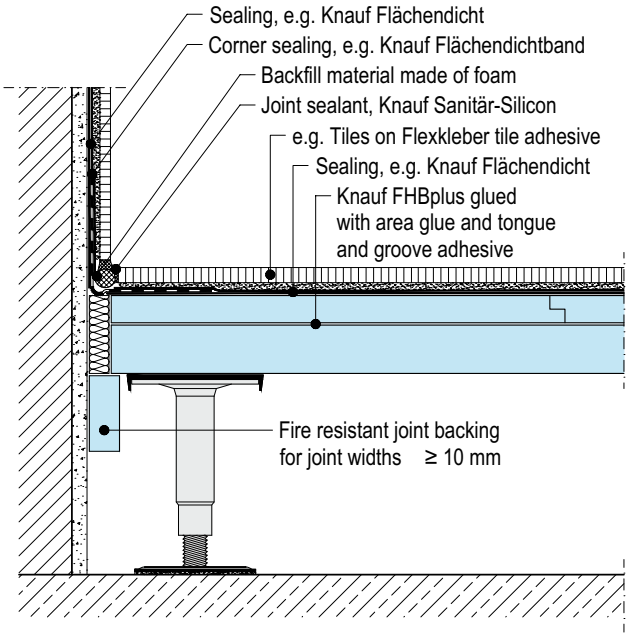
F181.de-V13 Installation revision frame / transition profile



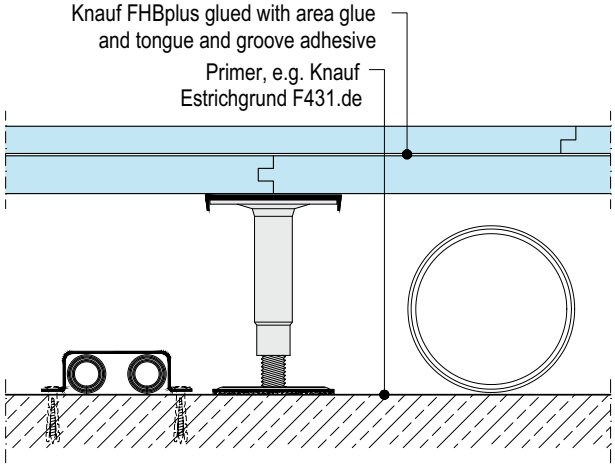
F182.de-V1 GIFAfloor FHBplus 25+18 connection to partition



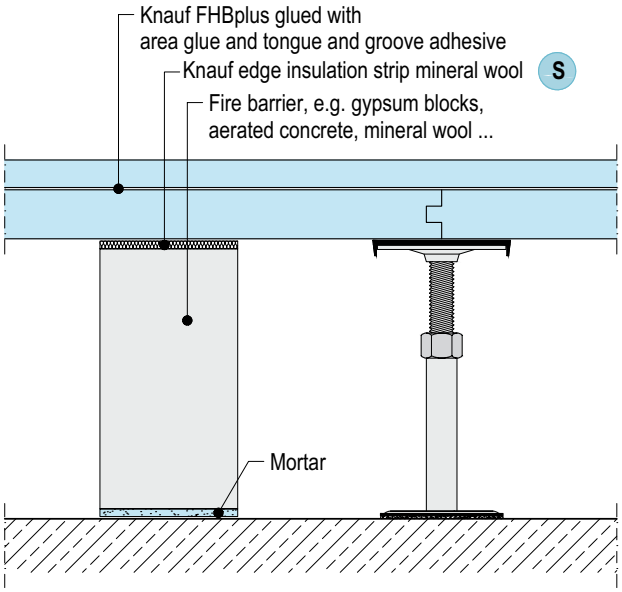
F182.de-V2 GIFAfloor FHBplus 32+18 connection to solid wall



F182.de-V3 GIFAfloor FHBplus 25+18 use of the cavity for building services

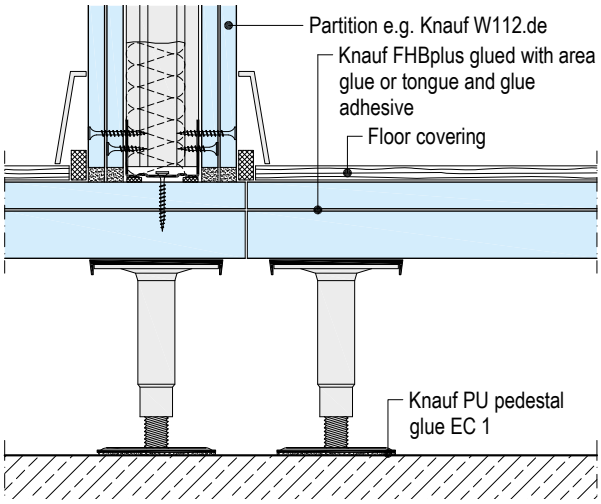


F182.de-V4 Fire barrier

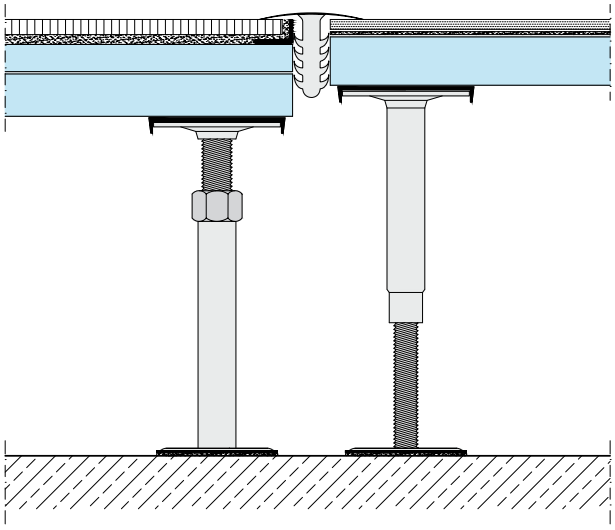


S Non-combustible melting point ≥ 1000° C acc. to DIN 4102-17

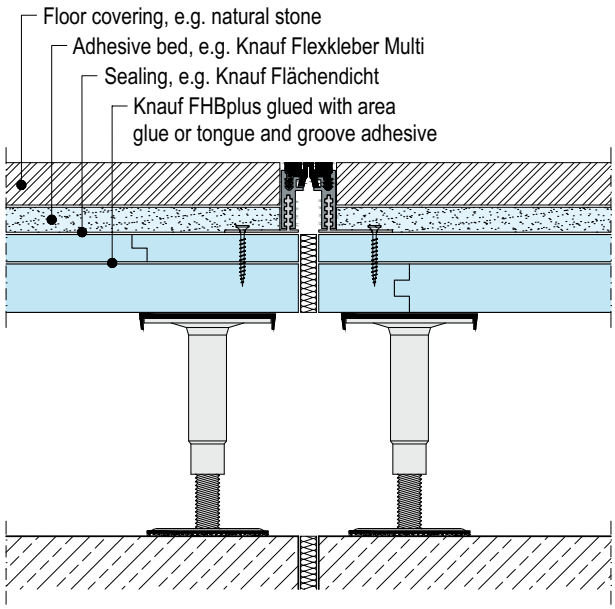
F182.de-V7 Partition on GIFAfloor FHBplus 32+18



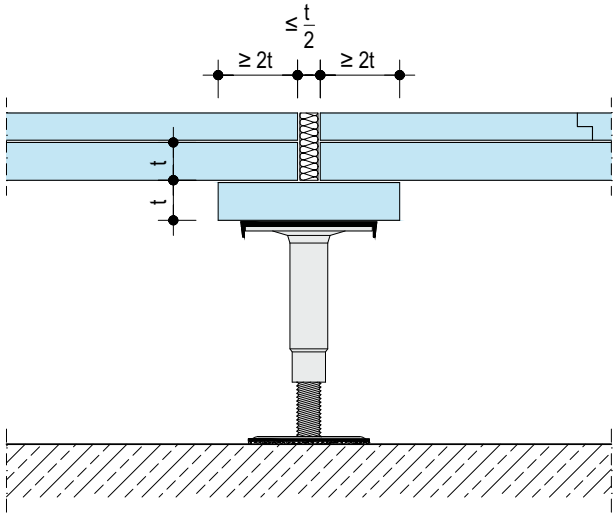
F182.de-V6 System transition F182.de / F181.de in door area



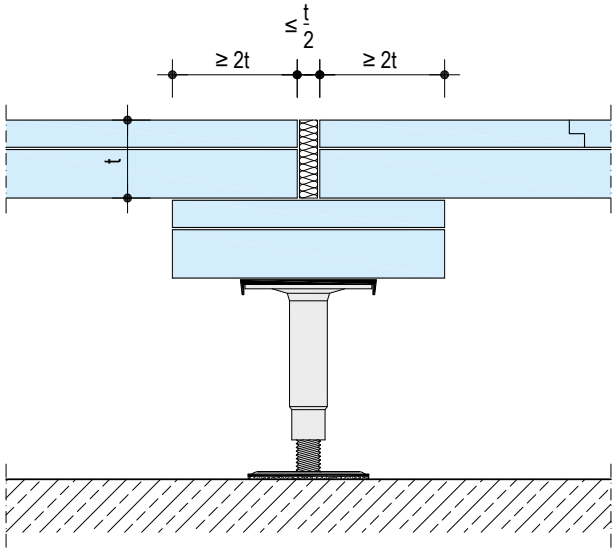
F182.de-V8 GIFAfloor FHBplus 25+18 Example: Movement joint installation



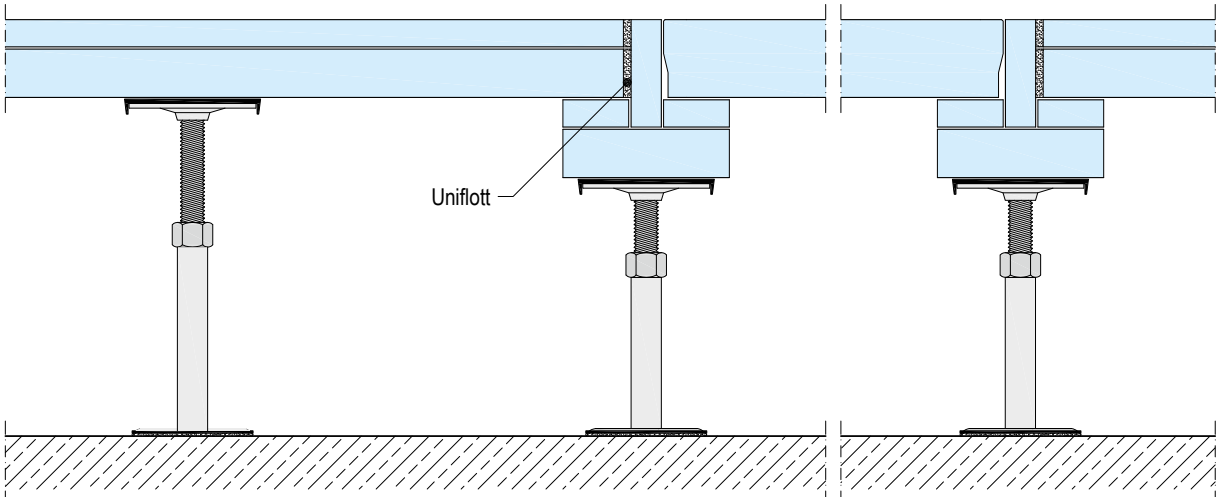
F182.de-V9 GIFAfloor FHBplus 25+18 Joint with fire resistance underlay, if the lower layer is sufficient for the fire resistance



F182.de-V10 GIFAfloor FHBplus 32+18 Joint with fire resistance underlay



F182.de-V11 GIFAfloor FHBplus 25+18 access opening / transition to hollow floor panels



Transition profiles and revision frames for GIFAfloor FHB systems

Floor thickness [mm]*	FHB system	Profile type / revision frame type	Profile length / frame inside dimension [mm]	Covering separation strip adjustability	Mat no.	Suitable** access panel / raised access floor
25	**F181**.de FHB25	**Transition profile 25/34 with aluminium cover separation strip**	3000	0 – 8 mm*** flexible	74345	34R/DB34
		Revision frame FHB25 with aluminium cover separation strip	600x600		30080	
28/32/38	**F181**.de FHB28 to FHB38	**Transition profile universal uno** (incl. spacer kit for 32/40 and 28/38)	3000	0 – 15 mm in 1 mm steps	139308	for FHB28: DB38 for FHB32: DB40 for FHB38: 42R/DB 42
	F181.de FHB28 to FHB38	**GIFAframe universal uno** (incl. spacer kit for 32/40 and 28/38)	600x600		139306	
43 – 56	**F182.de and F183**.de all systems from **FHBplus** 25+18 and **FHBplus Klima** 25+18	**Transition profile universal duo**	3000	0 – 15 mm in 1 mm steps	142264	42R/DB42
		GIFAframe universal duo	600x600		139517	42R/DB42

Floor thickness [mm]*	Accessories	Mat no.
25	**Straight connector** **Corner connector**	77807 77808
28/32/38	**Spacer kit universal uno** 32/40 and 28/38 for a 3 m profile/for one frame	139307
43 – 56	**Spacer kit universal duo** for a 3 m profile/for one frame	139308

Notes on table above

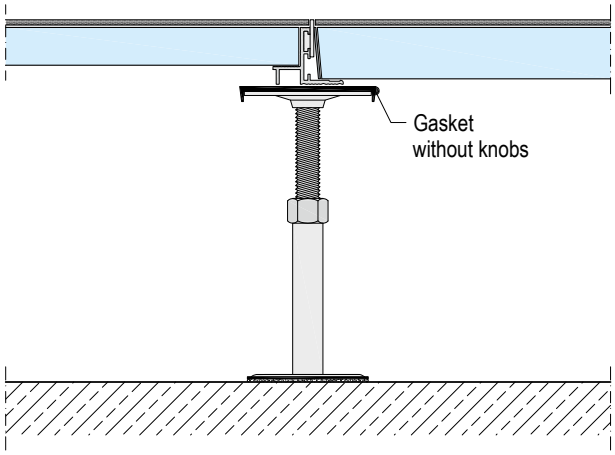
All universal uno / duo transition profiles and GIFAframe universal uno / duo revision frames with height adjustable, detachable cover separation strips made of aluminium

** Full surface skimming not considered*

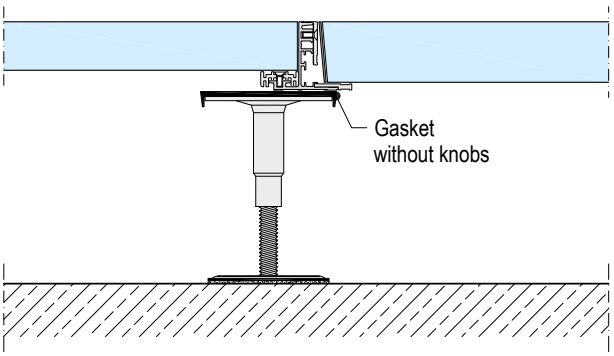
*** Caution! With heavy duty floor the loadbearing capacity of the access panel is less than the GIFAfloor flooring surface!*

**** Higher cover separation strip on request*

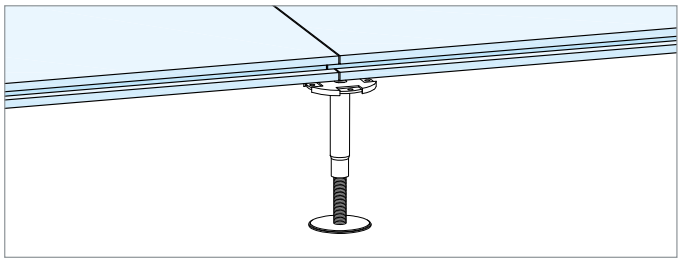
F181.de V17 Transition profile 25/34; access panel frame FHB25 with cover separation strip



F181.de V19 Transition profile universal uno 38/42 and access panel frame GIFAframe universal uno 38/42 vertical sections (scale 1:5)



Thread pedestal



Thread pedestal M12 S for GIFAfloor FHB

Head Ø 100 mm; base Ø 60 mm

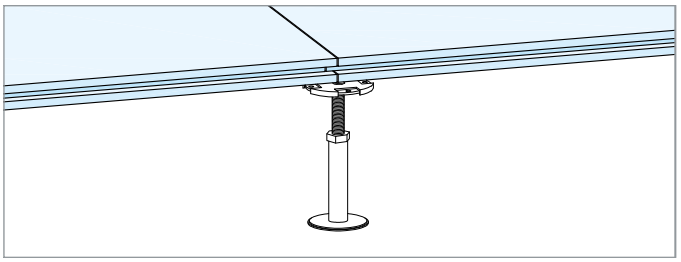
Pedestal height in mm			
medium setting	min.	max.	Mat no.
28	23	33	74367
35	30	40	74351
50	40	60	74352
56.5	43	70	74353
71.5	53	90	74355
80	60	100	74356
95	70	120	74358
120	90	150	74360
145	110	180	74364
170	120	220	74366

Thread pedestal M16 S for GIFAfloor FHB and FHBplus

Head Ø 90 mm; base Ø 98 mm

Pedestal height in mm			
medium setting	min.	max.	Mat no.
32.25	26.5	38	41191
37.5	30	45	74368
45	35	55	74369
52.5	40	65	74369
60	45	75	74370
67.5	50	85	74371
77.5	60	95	74372
82.5	60	105	74389
92.5	70	115	74373
97.5	70	125	74374
107.5	80	135	74375
112.5	80	145	74376
132.5	100	165	74377
157.5	120	195	74380
182.5	150	215	74382
202.5	170	235	74381
232.5	200	265	74383
262.5	230	295	41192
287.5	250	325	99197
312.5	280	345	99198
322.5	290	355	99199
357.5	320	395	99200

Plug pedestals



M16 ST for GIFAfloor FHB, FHBplus and FHBultra

Head Ø 90 mm; base Ø 98 mm

Pedestal height in mm			
medium setting	min.	max.	Mat no.
202.5	175	230	74391
252.5	225	280	74396
302.5	275	330	74401
352.5	325	380	74405
402.5	375	430	74411
452.5	425	480	74392
502.5	475	530	74393
552.5	525	580	74394

M20 ST 2.0* for GIFAfloor FHB, FHBplus and FHBultra

Head Ø 90 mm; base Ø 98 mm, tube: 24x2 mm

Pedestal height in mm			
medium setting	min.	max.	Mat no.
212.5	185	240	74412
262.5	235	290	74413
312.5	285	340	74414
362.5	335	390	74415
412.5	385	440	74416
462.5	435	490	74417
512.5	485	540	74418
562.5	535	590	74419
612.5	585	640	74420

M20 ST 3.0* for GIFAfloor FHB, FHBplus and FHBultra

Head Ø 90 mm; base Ø 98 mm, tube: 26x3 mm

Pedestal height in mm			
medium setting	min.	max.	Mat no.
612.5	585	640	585924
662.5	635	690	585925
712.5	685	740	585929
762.5	735	790	585930
812.5	785	840	585932
862.5	835	890	585933
912.5	885	940	585934
962.5	935	990	585935
1012.5	985	1040	652272
1063	1035	1090	585936
1163	1135	1190	585937

** Other heights available on request. Pedestal loadbearing capacities, see page 8.*

Material	Mat no.	Sales unit	Required quantity*
Knauf Estrichgrund F431	5355	10 kg bucket	Approx. 200 g/m²
PU pedestal adhesive EC1	260231	600 ml tubular bag	Approx. 15 ml/pedestal
Pedestals	See table page 21	See price list	Approx. 3.9 pcs/m²
Thread locking glue EC1	260228	500 g spray bottle	Approx. 1 bottle/250 pedestals
Gasket 90 without knobs	30097	100 pcs/bag	Approx. 3.9 pcs/m²
Gasket 100 without knobs	30056	100 pcs/bag	Approx. 3.9 pcs/m²
PGR insulation pads, round, self-adhesive, 5 mm	44135	See price list	Additional approx. 3.9 pcs/m²
Knauf stringer light	74336	Pieces	If required approx. 5.8 pcs/m²
Knauf stringer heavy	74337	Pieces	If required approx. 5.8 pcs/m²
Knauf bridging profile	37046	Pieces	As required
Knauf edge strip for GIFAfloor flooring systems	109147	Approx. 13x100x1200 mm 50 pcs/carton	As required
Knauf wall connection foam tape	74339	5x10m roll/bag 20 bags/carton	As required
GIFAfloor FHB panels 1200x600 mm	See table page 3	See table page 3	Approx. 1.39 pcs/m²
GIFAfloor LEP panels	See table page 3	50 pcs./pal.	If required approx. 1.39 pcs/m²
Knauf tongue and groove adhesive	141974	20 pcs tubular bags each 600 ml (~900 g)/carton	F182.de approx. 54 m²/carton + area glue
Knauf FHB element glue (only for F181.de)	206025	1 kg bottle	Approx. 40 g/m²
Knauf area glue	141975	15 kg bucket	Approx. 600 g/m²
GIFAfloor access panels	See table page 3	Pieces	As required
Transition profiles and access panel frames and accessories	See table page 20	Pieces	As required

Tools			
Knauf Adhesive Gun	4657	Pieces	As required
Knauf Diamond tipped saw blade 160x2.2/1.6x20	186326	Pieces	As required

** The specified quantities refer to a room dimension of 10x10 m. Other quantities may be required for divergent room dimensions.*

Construction

Knauf GIFAfloor FHB hollow floor panels are made from Knauf GIFAtec gypsum fibre material in standardized thicknesses of 25, 28, 32 or 38 mm, with tongue and groove edge types. LEP panels for the second layer with F182.de are 18 mm thick and have a rabbeted edge. The panel edges are glued using Knauf tongue and groove adhesive, for single-layer systems F181.de the Knauf FHB adhesive or Knauf PVA glue can be used. The GIFAfloor panels are laid floating on the height adjustable and levelled steel pedestals. The pedestals are glued to the clean, primed and sufficiently stable substrate using Knauf PU pedestal adhesive EC1. The floor is suitable for heating or cooling (see Knauf Technical Information Sheet TI Klima). Building services of any kind can be installed in the cavity under the floor. Lightweight non-load bearing partitions can be installed at any position on the GIFAfloor hollow floor (see page 6). Joints have to be planned according to their width, positioning and construction (see Planning and convenient arrangement of joints on page 11).

Substrate

The substrate must be capable of bearing the ultimate loads of the floor system supported by the hollow floor pedestals. The substrate must be stable, dry and free of separating agents such as bitumen, oil or paint. Insulation materials and bituminous sheets are only able to support hollow floor systems with a sufficiently enhanced load-distribution for hollow floors. The raw floor has to be swept and vacuum cleaned thoroughly and to be primed, for example, with Knauf Estrichgrund F431 screed primer. Building control joints have to be integrated into the same position in hollow floor systems.
Mark the pedestal positions for the first row of pedestals. Fix the pedestal bases to the substrate with about 15 ml of Knauf PU pedestal adhesive EC1 and subsequently align exactly with a laser or engineer level accurate to tenths of millimetres. In all perimeter areas: Pedestal spacing approx. 70 mm from the edge of the panels.

Installation

Attach edge strips or wall connection foam tape to the adjacent components. Place gaskets or insulation pads onto the pedestals, secure the pedestal thread by using Knauf threadl locking glue EC1. Use additional pedestals in all perimeter areas or alternatively heavy stringers up to a carrying capacity of 5.0 kN. Install the second pedestal row and, if necessary, the required additional pedestals X for the first FHB element as described. Cut off the tongues of the first panel, lay the panel on the prepared pedestals and press against the edge strips. Cut to fit the GIFAfloor panels with e.g. a circular saw with a diamond-tipped saw blade and dust extraction system or with e.g. a pendulum jigsaw / assembly band saw with a HM-tipped saw blade. Cut off the tongue of the second and the following panels of the first row in the perimeter connection area, and apply the glue as shown on page 13. Immediately apply the panels butt jointed and align them. Install the second and following panel rows offset by half a board length. Glue that emerges at the top and the bottom of the butt joints indicates that sufficient glue has been applied and can be removed after one day, e.g. with a sharp spatula. The GIFAfloor LEP panels of the second layer are turned by 90°, applied with joints offset and the glue bonded on the full surface with the first layer and to one another with Knauf area glue. Directly after laying into the glue bed as shown on page 15, they are to be nailed in position with a compressed air / impulse nailer.
The edge strips for the end joints are inserted after installation of the last panel of a row.

Do not walk on the laid floor for approx. 12 hours. The floor system can be fully loaded after approx. 24 hours (glue setting time).
For pedestal heights greater than approx. 500 mm, stringers are recommended; for heights greater than approx. 800 mm or expected lateral forces (e.g. corridors in front of of elevators in hospitals), Knauf ZD diagonal rods should be used.

Surface treatment and floor coverings

Control joints, expansion joints, transition joints and connection joints of the GIFAfloor must be adopted to the floor coverings.
Knauf GIFAfloor resists chair castors without additional treatment.
Prime with Knauf Estrichgrund F431 primer or apply primer stipulated by the glue system used.
Apply carpet without joint filler, or if necessary, joint with Knauf Uniflott. Apply thin elastic floor coverings (e.g. PVC, linoleum) only with full surface filling at least 2 mm thick using Knauf Nivellierspachtel N 410 floor filler. Prime when dry.
Ceramic tiles and natural stone shall be bonded with flexible tile adhesives preferably laid on double-layer systems F182.de. The application requirements of the adhesive manufacturer for the tile size used, particularly the stated minimum thickness of the adhesive bed, must be observed. Lay ceramic tiles using the buttering-floating method/combined method, and push the tile with side motion into the adhesive bed while pressing it in. Fleece or woven material prescribed by the manufacturer of the adhesive system has to be installed according to instructions.
If the permissible deflections of GIFAfloor by expected loads are greater than the permissible deflection of the floor covering, additional measures to reduce those deflections have to be considered. For further limitation of these deflections, use thicker panels and/or additional pedestals X, arranged in the middle of the grid.
Seal against water using Knauf Flächendicht sealant and Flächendichtband Sealing Tape in domestic bathrooms.
Lay parquet flooring as a floating system or thickness of the parquet limited to ≤ 2/3 of the thickness of the GIFAfloor. The installation guidelines of the adhesive manufacturer for the adhesive system have to be observed.
Liquid floor coverings like e.g. epoxy resin floors have to be elastified and, depending on the manufacturer, have to be water vapour permeable.
Test the bond strength of the floor covering / adhesive system to the GIFAfloor (is necessary with a specimen).

F18.de GIFAfloor

Sustainability | Building biology | Disposal

Information on sustainability of Knauf GIFAfloor

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

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

- **DGNB System**
  Deutsches Gütesiegel Nachhaltiges Bauen der DGNB (German association for environmentally sustainable building)
- **BNB**
  (Bewertungssystem Nachhaltiges Bauen, Quality rating system for environmentally sustainable building)
- **LEED**
  (Leadership in Energy and Environmental Design).
  Knauf products and Knauf precast tile or slab flooring can positively influence many of these criteria.

DGNB/BNB

Ecological quality

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

Economic quality

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

Sociocultural and functional quality

- Criterion: Suitability for conversion
  Flexible Knauf Drywalling

Technical quality

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

LEED

Materials and Resources

- Credit: Recycled Content
  Recycled content in Knauf boards, e.g. FGD gypsum
- Credit: Regional Materials
  Short transport routes provided by the extensive network of Knauf manufacturing facilities. Detailed information on request and online at www.knauf-blue.de

Eco-friendly construction properties

Knauf GIFAfloor has an eco-friendly approval since March 2003 after a certificate was awarded by the IBR - Institute for building biology, Rosenheim (D).

The eurofins-institute Galten (DK) determined the suitability for indoor use in accordance with the DIBt certification guidelines.

IBR

Institut für **Baubiologie** Rosenheim GmbH

Certificate of Award

Based on the excellent test results, the Seal of Approval

is hereby awarded to

Knauf Integral KG
D-74589 Satteldorf

for the tested product

Knauf gypsum fibreboards
(Certification-No. 3019 - 1032)

by the Institut für Baubiologie Rosenheim GmbH.

Reimut Hentschel, Managing Director
Rosenheim, February 2019

The Seal of Approval is awarded for 2 years. In the interest of consumers, follow-up testing of the products must be performed in due time before the Seal of Approval expires. The applicant will have to reapply for these tests.

IBR Institut für **Baubiologie** GmbH D-83022 Rosenheim Münchener Straße 18
Tel. +49 (0)8031 / 3675-0 Fax +49 (0)8031 / 3675-30 www.baubiologie-ibr.de

eurofins

Attestation

European National Regulations on VOC emissions

On 27 February 2018, Eurofins Product Testing A/S received a sample of a ceiling panel with the product name:

GIFAboard and GIFAfloor

supplied by

Knauf Integral KG

The emissions were tested according to the regulations in Germany, France and Belgium. The test is in accordance with German AgBB (2015) and the guidelines of the DIBt (2010), the French legislation of 2011 on emission classes as specified in decree no 2011-321, and the Belgian Royal Decree C-2014/24239. Sampling, testing and evaluation were performed according to EN 16516, ISO 16000-3, ISO 16000-6, ISO 16000-9, ISO 16000-11 in the latest versions, see the test report no. 392-2018-00088701_A_DE.

The formaldehyde test result is similar to a test obtained with EN 717-1.

Evaluation of the emission test result according to Indoor Air Comfort 6.0:

- French VOC class: A+
- Carcinogenic substances were not detectable after 3 and after 28 days.
- The total of all VOC ("TVOC") and the sum of all VOC (AgBB) after 3 days both were below the limit of 10 000 µg/m³.
- The total of all VOC ("TVOC") and the sum of all VOC (AgBB) after 28 days both were below the limit of 1000 µg/m³.
- The total of all SVOC ("TSVOC") after 28 days was below the limit of 100 µg/m³.
- After 28 days the values R_D and R_B were below the limit of 1.
- The sum of VOC without LCI_0 after 28 days was below the limit of 100 µg/m³.
- Formaldehyde after 28 days was below the limit of 60 µg/m³.

The tested product complies with referenced European regulations as of 13 April 2018

13 April 2018

Nanna Boholm
Chemist

Rasmus Stenbaard Christensen
Analytical Service Manager, MSc in Chemistry

Eurofins Product Testing A/S • Smedeskovvej 38, 8464 Galten, Denmark • Tel. +45 70 22 42 76
www.product-testing.eurofins.com

Disposal

GIFAfloor waste is classified with the waste code number 17 08 02 gypsum-based construction materials, or 17 09 04 mixed construction and demolition wastes, not contaminated with hazardous substances.

Knauf Direkt
Technical Advisory Service:
Tel.: +49 9001 31-1000*
knauf-direkt@knauf.de

www.knauf-integral.de

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Knauf KG, Am Bahnhof 16, 74589 Satteldorf

Switzerland: Knauf AG, Kägenstrasse 17, CH-4153 Reinach BL, Tel.:+41 (61) 716 10 10, www.knauf.ch

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