

Detail sheet F18

06/2009

## F18 Knauf Integral GIFAfloor Sheet-panelled access floors

F181 – Sheet-panelled access floor single-layer GIFAfloor FHB

F182 – Sheet-panelled access floors double-layer

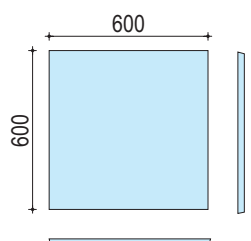
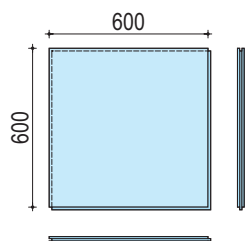
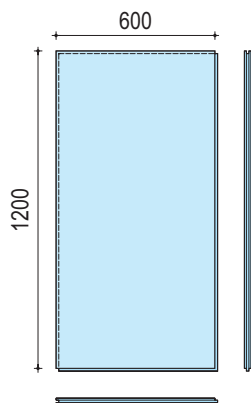
GIFAfloor FHBplus and GIFAfloor DLH



**NEW!** Now with  
CE-marking  
EN 15283-2

## GIFAfloor standardized panels

Scheme without scale



### Technical data

Name CE-marking	Sizes Panel net size mm	Panel thickness mm	Weights (Density $\geq 1500 \text{ kg/m}^3$ )		Material number	Unit pcs./palett
			Panel c. kg/pc.	c. kg/m <sup>2</sup>		
<b>FHB 25</b>	1200x600	25	27.0	37.5	31256	35 pcs./pal.
GF-W1DIR1/1200/600/25-C1/NF	600x600	25	13.5	37.5	63565	70 pcs./pal.
GF-W1DIR1/600/600/25-C1/NF						
<b>FHB 28</b>	1200x600	28	30.2	42.0	31545	30 pcs./pal.
GF-W1DIR1/1200/600/28-C1/NF	600x600	28	15.1	42.0	50980	60 pcs./pal.
GF-W1DIR1/600/600/28-C1/NF						
<b>FHB 32</b>	1200x600	32	34.6	48.0	31326	25 pcs./pal.
GF-W1DIR1/1200/600/32-C1/NF	600x600	32	17.3	48.0	31559	50 pcs./pal.
GF-W1DIR1/600/600/32-C1/NF						
<b>FHB 38</b>	1200x600	38	41.2	57.0	88635	20 pcs./pal.
GF-W1DIR1/1200/600/38-C1/NF	600x600	38	20.6	57.0	88636	40 pcs./pal.
GF-W1DIR1/600/600/38-C1/NF						

### To increase the working load and in case of of damageable floor coverings to be put onto the GIFAfloor FHB panels

<b>LEP 13</b>	1200x600	13	14.1	19.5	30503	70 pcs./pal.
GF-W1DIR1/1200/600/13-C1/SF						
<b>LEP 18</b>	1200x600	18	19.5	27.0	99258	50 pcs./pal.
GF-W1DIR1/1200/600/18-C1/SF						

### DLH panels not to be combined with the above mentioned GIFAfloor panels with density $1500 \text{ kg/m}^3$

<b>DLH 25</b>	1200x600	25	21.6	30.0	30256	35 pcs./pal.
GF-W1/1200/600/25-C1/NF			(density $\geq 1100 \text{ kg/m}^3$ )			
<b>DLH 13</b>	1200x600	13	11.2	15.6	301138	70 pcs./pal.
GF-W1/1200/600/13-C1/SF			(density $\geq 1100 \text{ kg/m}^3$ )			

### GIFAfloor access panel to be combined with all GIFAfloor FHB F181 and GIFAfloor FHBplus F182 and GIFAfloor FHBplus Klima F183\* systems

Density  $\geq 1500 \text{ kg/m}^3$ , edges milled angular and with circumferential protection stripe. For installation for all Knauf Integral access opening frames and installation sections made by Knauf Integral transition profiles. All access panels are available singular..

<b>34R</b>	600x600	34	16.9	-	72636	30 pcs./pal.
GF-W1DIR1/600/600/34-C1/ASK						
<b>38R</b>	600x600	38	21.9	-	72638	25 pcs./pal.
GF-W1DIR1/600/600/38-C1/ASK						
<b>40R</b>	600x600	40	23.0	-	72644	25 pcs./pal.
GF-W1DIR1/600/600/40-C1/ASK						
<b>42R</b>	600x600	42	24.2	-	102528	25 pcs./pal.
GF-W1DIR1/600/600/42-C1/ASK						

\*- see Knauf Integral Technical information sheet TI Klima

### Raw material and production

GIFAtec is produced by natural gypsum and a portion FGD-gypsum by admixturing of cellulose fibres made of sorted recycled paper and cardboard. The natural gypsum is exploited in an area c. 30 km around the factory in open-cast minings. The natural-chemical identical clean FGD gypsum is calcined with the natural gypsum to stucco. The papers are soaked in big tanks. After processing

time they are mixed with processing water and the stucco to a mush. This mush is put on a transport belt, reaching a thickness of c. 2mm by pulling of the surplus water by vacuuming. On the forming cylinder it is wounded up to the needed thickness, roughly cut and after a setting period dried in a 12-layer dryer. The GIFAtec large-sized panels are been sanded, shaped in a format station to

become GIFAfloor panels. After priming the top and back side of the panels they are packed on pallets. This kind of production of gypsum fibre material ensures the unique homogenous density through the whole thickness of the GIFA-floor panel.

### Building biological data / Waste disposal

Since March 2003 Knauf Integral GIFAfloor is recommended by awarding certificate by the institute for building biological testing IBR (Institut für Baubiologie Rosenheim).

The eurofins institute Galtén (DK) certificated the suitability for interior installation according German institute for building technology (DIBt) approval criteria by undertaking aptitude tests with Knauf Integral GIFAtec according the new European standards.

For GIFAfloor waste the waste disposal code number is 17 08 02 for building material based on gypsum or no. 17 09 04 for mixed building and demolition waste, not polluted by dangerous materials.

### Valuation of the eurofins emission test results

Cancerogene	after 3 and 28 days	not detectable
TVOC**	after 3 and 28 days	below the limit
SVOC***	after 28 days	below the limit
VOC*-value R	after 28 days	below the limit
VOC*-value without NIK-value	after 28 days	below the limit
Formaldehyde	after 28 days	below the limit

\* VOC = volatile organic compounds \*\* TVOC = sum of the volatile organic substances

\*\*\* SVOC = sum of the less volatile organic substances



**INSTITUT FÜR BAUBIOLOGIE ROSENHEIM GMBH**

## CERTIFICATE

Due to excellent test results we are pleased to grant

### Knauf Integral KG

our approval of their products

### Knauf Integral GIFAtec und GIFAfloor

in the density classes 1100 kg/m³ und 1500 kg/m³



granted by the Institute of Biology, Institut für Baubiologie Rosenheim GmbH

*Reinut Hentschel*  
Reinut Hentschel  
Rosenheim, March 2009

The Warranty has been granted for a period of 2 years.  
Before the expiration renewed tests have to be applied for and carried out  
in the interest of the consumer.

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Bankverbindungen: Dresdner Bank BLZ 711 100 05, Konto 2468 53 009, Postbank München, BLZ 700 100 80, Konto 5775-809  
E-Mail: info@baubiologie-ibr.de Internet: www.baubiologie-ibr.de



## Certificate

On 25<sup>th</sup> of June 2004 Eurofins Denmark A/S received a sample of a fibre reinforced calcium sulphate panel with edge trim around the panel edges, panel thickness 28 mm, bare finish on top and bottom with the name

### GIFAfloor Knauf Integral KG

The emissions were tested according to the AgBB-scheme and guidelines of the DIBt (AgBB - Committee for Health-related Evaluation of Building Products, DIBt - German Institute for Building Technology). Sampling, testing and evaluation were performed according to EN 13419-1, EN 13419-3, ISO 16000-3, ISO 16000-8, ISO 16000-9, ISO 16000-11, ISO 16017-1 in the latest versions, see the test report no. 211019-71-181.

**Evaluation of the test result according to AgBB guidelines:**

- Carcinogenic substances were not detectable after 3 and after 28 days.
- The sum of VOC ("TVOC") after 3 days was below the limit of 10.000 µg/m³.
- The sum of VOC ("TVOC") after 28 days was below the limit of 1.000 µg/m³.
- The sum of SVOC after 28 days was below the limit of 100 µg/m³.
- After 28 days the value R was calculated from the detected VOC with single concentrations above 5µg/m³. This value R was below the limit of 1.
- The sum of VOC without LCI-value after 28 days was below the limit of 100 µg/m³.
- Formaldehyde after 28 days was below the limit of 120 µg/m³.

The tested product is suitable for indoor application,  
according to the AgBB guide line (version July 2004).  
25<sup>th</sup> of August 2005

  
Inge Børdgaard  
Chemical engineer

  
Thomas Neuhaus  
Environmental engineer

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Smødeskovvej 39  
DK-6464 Galtén /  
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Tel +45 70 22 42 66  
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### Building physical material values

	GIFAfloor FHB / GIFAfloor LEP	GIFAfloor DLH	
<b>Fire protection</b>			
Building material class according to EN 13501-1	A1	A1	non-combustible
Building material class according to DIN 4102-1	A2	A2	non-combustible
<b>Hygrothermal values</b>			
Conductivity of heat $\lambda_R$	0.44	0.38	W/(mK)
For floor heating systems $\lambda_{10}$	0.30	-	W/(mK)
Value of vapor diffusion resistance $\mu$	30 / 50	17	-
Specific heat capacity $c$	>1000	>1000	J/(kgK)
Thermal extension coefficient $\alpha$	$12.9 \times 10^{-6}$	$12.9 \times 10^{-6}$	1/K
Expansion / shrinkage by rise / drop in temperature	$\leq 0.02$	$\leq 0.02$	mm/(mK)
Expansion / shrinkage by changing the rel. air humidity on 30% at 20°C	0.6	0.6	mm/m
Hygrothermal installation conditions (stationary)	+10° to +35°C	+10° to +35°C	c. 45-75% r.h.
Hygrothermal using conditions (stationary)	-10° to +35°C	+1° to +35°C	c. 35-75% r.h.
Surface water absorption capacity acc. to EN20535 (acc. Kopp)	<300	<300	g/m²
<b>Strength values</b>			
Surface hardness acc. to Brinell	$\geq 40$	$\geq 20$	N/mm²
Pull off bond strength	$\geq 1.0$	$\geq 0.6$	N/mm²
<b>Other</b>			
Surfaces with transport protecting primer to bond dust and for reduction of water absorption capacity	yes	yes	-
Ability of taking vertical dynamic maximum working load acc. to EN 13964 without additional treatment	$\geq 100\,000$	-	endurance
Value of vapor diffusion resistance $\mu$ of the optional factory-made lamination of aluminum foil on the base side	$9.3 \times 10^{-6}$	$9.3 \times 10^{-6}$	practically vapour-tight

### Fire protection

Class	Support height (=clear dimension)	Support thread dimension	Wall thickness sleeve outside Ø	Panel thickness
<b>F 30 AB*</b>	$\leq 1150$ mm $\leq 1000$ mm $\leq 600$ mm $\leq 218$ mm	M 20 M 20 M 20 M 12	3.0 mm 2.5 mm 1.5 mm 17.5 mm	$\geq 22$ mm
<b>F 60 AB*</b>	$\leq 598$ mm $\leq 168$ mm	M 20 M 16	2.0 mm 2.0 mm	$\geq 32$ mm
<b>F 90 „from top to side“</b>	Expert's report MPA Dresden „F90 solely from top side“, which means independent of the bearing structure.			$\geq 50$ mm

\*= The classification is also valid if drywalls (non-loadbearing internal partitions acc. to DIN 4103) are set on the GIFAfloor FHB.

The Knauf Integral GIFAfloor FHB systems with a thickness  $\geq 22$ mm and a clear height  $\leq 400$ mm are fulfilling the German building regulations F30 according to DIN 4102.

### Sound insulation

	GIFAfloor FHB 22			GIFAfloor FHB 25			GIFAfloor FHB 28			GIFAfloor FHB 32		
	without finish	with finish (VM=28dB)	without finish with separ. joint with separation	without finish	with finish (VM = 28dB)	without finish with separ. joint with separation	without finish	with finish (VM=28dB)	without finish with separ. joint with separation	without finish	with finish (VM=26dB)	without finish with separ. joint with separation
<b>Stand. flanking sound val. diff. <math>D_{n,f,w,P}</math> [dB]</b>	42	51	52	~40	~48	~52	39	45	52	46	49	55
<b>Weighted normalized flanking impact sound pressure level <math>L_{n,f,w,P}</math> [dB]</b>	86	50	70	~90	~51	~65	94	52	60	79	49	61
<b>Reduction in impact sound pressure level <math>\Delta L_{w,P}</math> [dB]</b>	15 (17)*	27 (27)*	–	~13	~26	–	12	25	–	16**	29**	–
<b>Proved by</b>	Measurement by Kurz und Fischer, (KuF) Pb No. 0247-1			Expectation values calculated by KuF No. 0247-5			Measurement by Kurz und Fischer, (KuF) Pb No. 0247-2			Measurement ita, Pb No. 0102.01-P358/00		

\*) with 6mm insulation sheets    \*\*) with PGR-insulation sheets

The measurements were taken according to ISO 140. The vertical sound insulation is set by the solid ceiling and is influenced positively by installing a GIFAfloor FHB.

Any building material, each building part and every (building) structures change their dimensions by varying climate conditions. Also deformations of building parts (e.g. allowed deflections) and of (building) structures (e.g. settling of buildings) are generated by the dead load of structure and by additional loads. Therefore joints are necessary and have to be planned. Joints have to be located where cracks are estimated.

There are different kinds of joints in a building:

Separating joints divide the building into several parts. These separating joints have to be transferred to all building parts exactly at the same position. Control joints (Construction joints / expansion joints) divide building parts into sections, which become several units (parts) that are able to take its elongation.

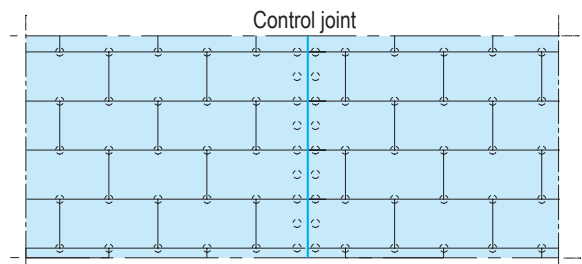
Transition joints have to be placed in a building part when the building material changes. Depending on their position they could be achieved as a hair joint.

Boundary joints have to be planned and achieved at all endings of a building part. They could take the function of expansion joints. They have to be continued e.g. in the zone of door openings as a joint with an adequate width. In the case of changes of their direction (e.g. the case of L- or U-shaped areas) a continuation at least in one direction as an expansion joint is necessary.

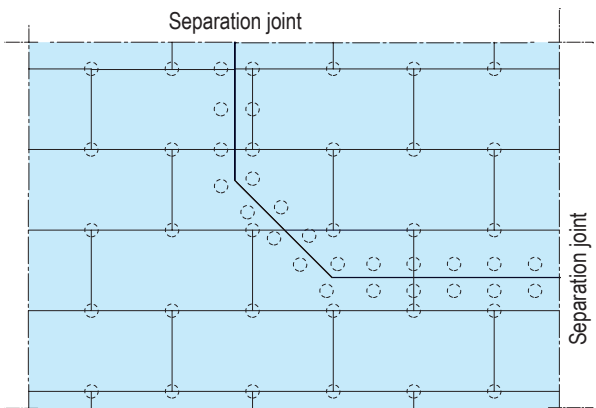
Acoustically potent separations of building parts (separation cuts / decoupling cuts / separation joints) unhinges subzones (subareas) out of the primarily building part and change its geometry which has to be observed strictly right from the design or planning stage.

Form preferably compact sections. The closer the areas getting to an edge ratio of 1:1 (=square) the bigger the areas could become. For asymmetric areas (e.g. trapezoid shaped areas) the joints have to be achieved thoroughly. The long edges in this case are authoritative.

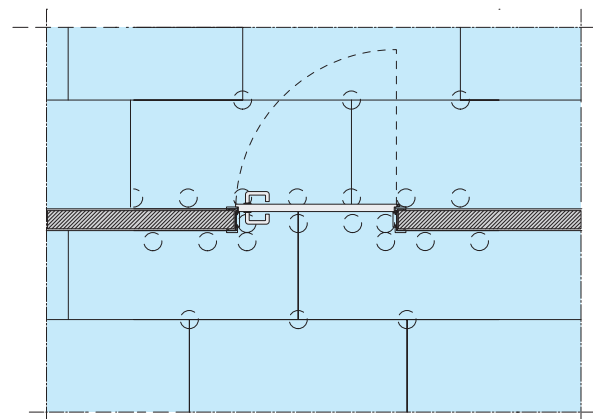
The joint formation (esp. profiles) has to take the bearing capacity of the floor system in each place.



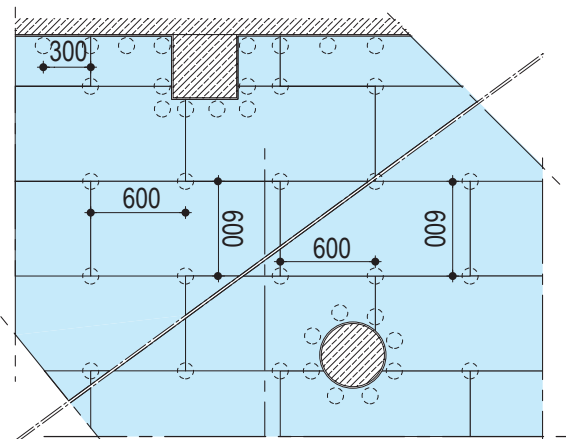
Control joint with half steel support distance at each edge area



Acoustical acting separation joint beneath a planned drywall

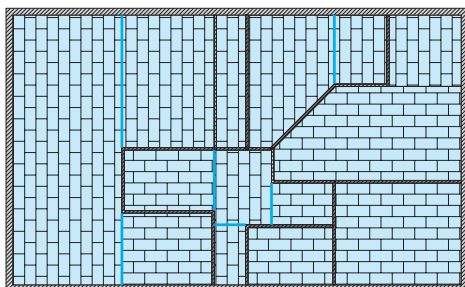
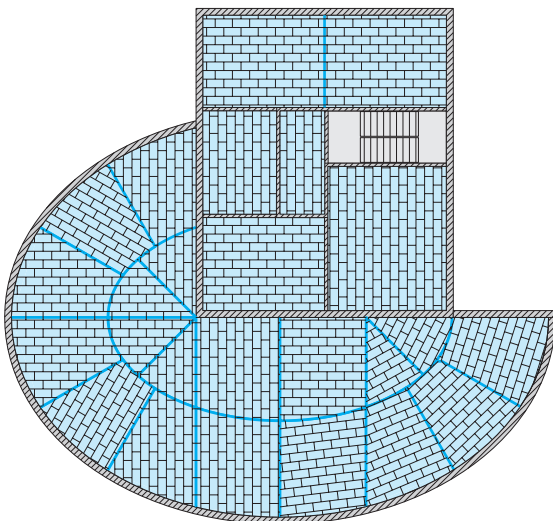


Strengthen connecting passage of a door by using additional steel supports



Arrangement of the steel supports e.g. at columns

### Drawings without scale



Nr.	Utilization	Examples	Design load analogue to DIN 1055-3* kN	Standardized panel thickness* mm
1	Without classification	Miter sills, non-passable	n/a	25
2	Cock lofts	Attics, not for residential usage but passable, clear dimension less than 1.80m	1.0	25
3	Housing and residential rooms	Rooms and corridors in residential buildings, bedrooms in hospitals, hotel rooms including kitchens and bathrooms belonging to them	1.0	25
4	Offices, working areas, corridors	Corridors in office buildings, offices, practices, ward rooms including corridors belonging to them	2.0	25
5	Offices, working areas, corridors	Corridors in hospitals, hotels, old people's homes, boarding schools etc., kitchens and ward rooms including operating theatres without heavy-load equipment	3.0	25
6	Offices, working areas, corridors	See no. 5, but including heavy-load equipment	4.0	28
7	Assembly rooms and areas to convene	Areas with tables, e.g. rooms in schools, cafes, restaurants, dining rooms / halls, reading rooms, receptions	4.0	28
8	Assembly rooms and areas to convene waiting rooms	Floors with fixed chairs. e.g. churches. theatres or cinemas. congress halls. lecture halls. assembly rooms,	4.0	28
9	Assembly rooms and areas to convene	Free passable floors, e.g. in museums, exhibition areas ..., entry areas of public buildings and hotels	4.0	28
10	Assembly rooms and areas to convene	Dancing halls, gymnastic rooms and stages	7.0	32+18
11	Assembly rooms and areas to convene	Areas for big assemblings e.g. concert halls, terrasses and entry areas, grandstands with fixed chairs	4.0	28
12	Sales rooms	Floors of stores with less than 50m <sup>2</sup> selling area inside of residential or office buildings	2.0	25
13	Sales rooms	Floors of retail shops and department stores	4.0	28
14	Sales rooms	See no. 13, but with higher loads because of high shelves	7.0**	32+18
15	Factories, workshops and and warehouses	Floors in factories and workshops with low load activities	4.0	28
16	Factories, workshops and and warehouses	Floors of warehouses and libraries	7.0**	32+18

If higher loads for the project are planned, so those have to be observed for the statical dimensioning of the GIFAfloor system strictly.

\* Proof acc. to EN 13213

\*\* Example for the grid of the bearing construction of 600mm, without transverse joints, with edge supports with a grid ≤300mm

### Load classes of hollow floors acc. to EN 13213

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

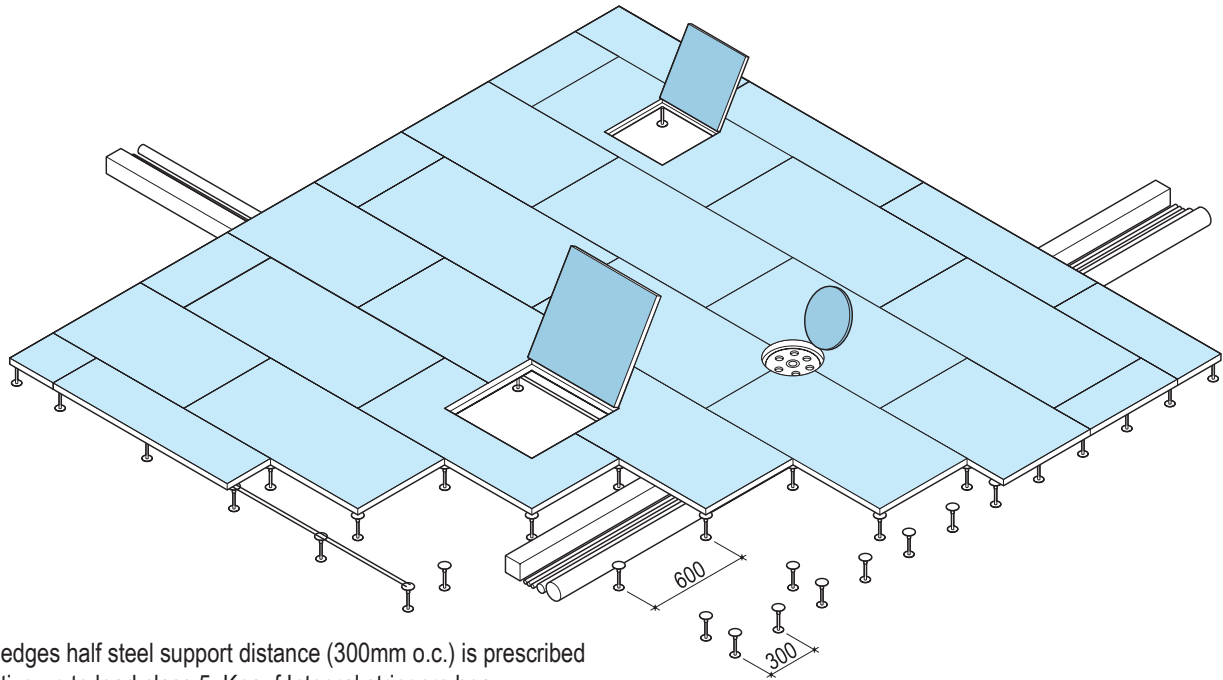
The EN 13213 hollow floors defines the test procedures and classifications of hollow floor systems. Area loads should not be taken as criterion, only the point load is the determining factor.  
Test by an intendor 25x25mm (simulation of a point load) until fail of the panel at specimens weakest position.



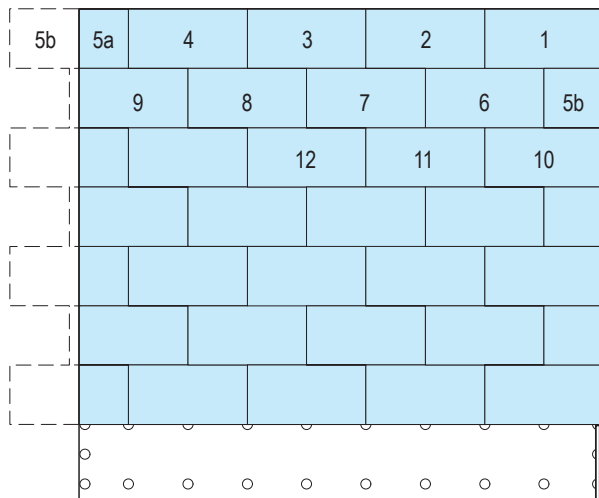
Allowable bearing capacities (working loads) for sheet-panneled access floors single-layer F181 <sup>1)</sup> (acc. to EN 13213)														
Floor	FHB 19 <sup>2)</sup>	FHB 22 <sup>2)</sup>	FHB 25	FHB 25	FHB 25	FHB 28	FHB 28	FHB 28	FHB 28	FHB 32	FHB 32	FHB 32	FHB 38	FHB 38
Grid system [mm]	600x600	600x600	600x600	600x600	300x300	425x425	425x425	425x425	425x425	300x300	425x425	300x300	600x600	425x425
Working load [kN] <sup>3)</sup>	1.0	2.0	3.0	4.0	4.5	4.0	4.0	4.0	4.0	4.5	6.0	6.0	6.0 <sup>5)</sup>	7.0
Load class <sup>4)</sup>	none	1	2	3	4	3	3	3	3	4	6	6	6 <sup>5)</sup>	6
Deflection while load initiating with a stamp 25x25mm for sheet-panneled access floors single-layer F181														
Load [kN]	1	n/a	0.8	0.6	0.4	0.7 <sup>6)</sup>	0.5	0.4	0.4	0.4	0.4	0.3	0.4	0.2
2		n/a	1.3	1.1	0.8	1.2	1.0	0.7	0.7	0.9	0.9	0.6	0.8	0.6
3			1.8	1.5	1.2	1.5	1.3	1.1	1.1	1.2	1.2	0.9	1.1	0.8
4				2.0	1.5	1.8	1.8	1.4	1.4	1.5	1.5	1.2	1.5	1.1
4.5					1.8			1.6	1.6	1.6	1.6	1.3	1.6	1.2
5										2.0	1.8	1.4	1.8	1.4
6											2.0	1.6	2.3 <sup>5)</sup>	1.7
7														2.0
Allowable bearing capacities (working loads) for sheet-panneled access floors double-layer F182 <sup>1)</sup> (acc. to EN 13213)														
Floor	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBplus	FHBultra	DLH
Grid system [mm]	25+13	25+13	25+18	28+13	28+13	28+18	28+18	28+18	28+18	32+13	32+13	32+18	38+38	25+13
Working load [kN] <sup>3)</sup>	4.5	5.0	4.5	5.0	5.0	6.0	6.0	6.0	6.0	6.0	7.0	9.0	12.5	3.0
Load class <sup>4)</sup>	4	5	4	5	5	6	6	6	6	6	6	6	6	2
Deflection while load initiating with a stamp 25x25mm for sheet-panneled access floors double-layer F182														
Load [kN]	1	0.7	0.5	0.6 <sup>6)</sup>	0.4 <sup>6)</sup>	0.6 <sup>6)</sup>	0.5 <sup>6)</sup>	0.4 <sup>6)</sup>	0.5	0.3	0.2	0.3	Because of the particular requirements to the floor finishing the deflection is not specified	
2	1.2	1.0	1.1 <sup>6)</sup>	0.9 <sup>6)</sup>	1.1 <sup>6)</sup>	1.0 <sup>6)</sup>	0.8 <sup>6)</sup>	0.9	0.8	0.5	0.3	0.5		
3	1.5	1.3	1.4 <sup>6)</sup>	1.2 <sup>6)</sup>	1.4 <sup>6)</sup>	1.3 <sup>6)</sup>	1.1 <sup>6)</sup>	1.3	1.1	0.7	0.5	0.7		
4	1.8	1.6	1.7 <sup>6)</sup>	1.5 <sup>6)</sup>	1.7 <sup>6)</sup>	1.6 <sup>6)</sup>	1.4 <sup>6)</sup>	1.6	1.4	0.9	0.6	0.9		
4.5	1.9	1.8	1.8 <sup>6)</sup>	1.7 <sup>6)</sup>	1.8 <sup>6)</sup>	1.7 <sup>6)</sup>	1.6 <sup>6)</sup>	1.7	1.5	1.0	0.7	1.0		
5		1.9	1.9 <sup>6)</sup>	1.7 <sup>6)</sup>	1.9 <sup>6)</sup>	1.9 <sup>6)</sup>	1.8 <sup>6)</sup>	1.9	1.7	1.1	0.8	1.0	1.8	
6				2.0 <sup>6)</sup>	2.0 <sup>6)</sup>	2.0 <sup>6)</sup>	2.0 <sup>6)</sup>	2.0	1.9	1.3	1.0	1.1		
7									2.0	1.5	1.2	1.2		
8										1.7	1.4	1.4		
9										1.9	1.6	1.5		
10											1.9	1.6		
11												1.8		
12												1.9		
12.5												2.0		
The load bearing capacity of the tested double-layer systems is mainly affected by the thickness of the lower bearing panel. Reducing the thickness of the lower panel reduces the load bearing capacity of the complete system, even the total thickness of the system is equal. If the upper panels are weakened by milling (e.g. for heating pipes), the load bearing capacity of the lower panel is equal to the load bearing capacity of the single-layer system F181 with adequate panel thickness. If the lower panel is milled the thickness below the milling solely has to be estimated.														
Supports, fillings / self levelling full area mastic compound coatings and floor finishings have to be designed for the specific loads. Special kind of supports for fire protection from bottom side are required. Further heavy load floors on request.														

<sup>1)</sup> The grid system 425x425mm is generated by additional supports put in the middle of the standardized grid 600x600mm <sup>2)</sup> Special thickness available on request

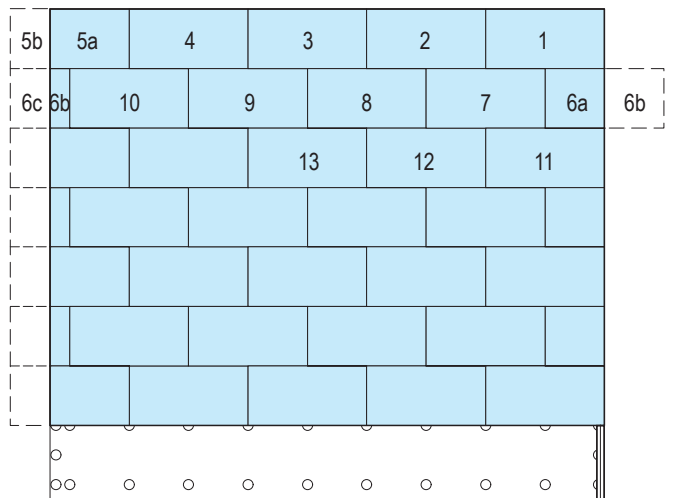
<sup>3)</sup> (= ultimate load / safety factor 2) <sup>4)</sup> acc. EN 13213 <sup>5)</sup> only according breaking load criterion <sup>6)</sup> values interpolated



For all edges half steel support distance (300mm o.c.) is prescribed  
alternative up to load class 5: Knauf Integral stringers heavy



Usage of the remaining part of the cut panel in the next row



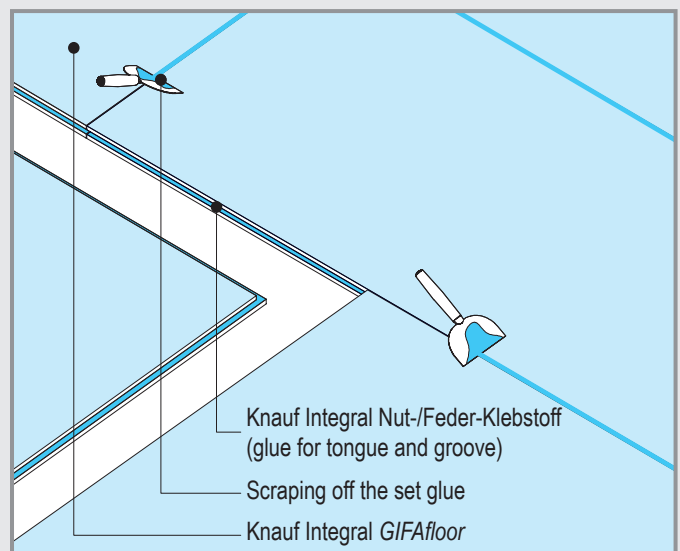
Usage of the remaining part of the cut panel in the same row

### Cut tongue of the panels at the wall connection joints

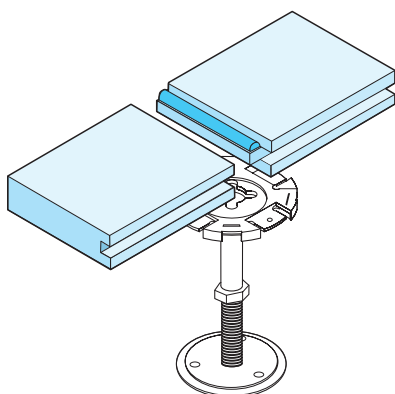


HM- tipped saw blades e.g.  
DeWalt DT 2103-QZ  
DeWalt DT 2056-QZ  
Bosch T140 HM  
Bosch T340 HM  
Festo FES HM 75/4.5

### Scraping off the set glue

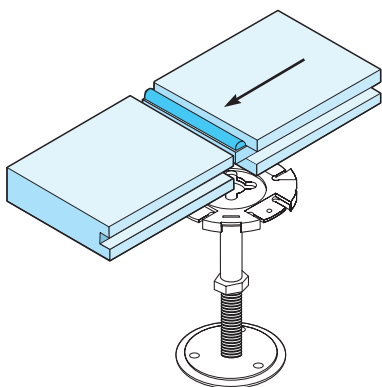






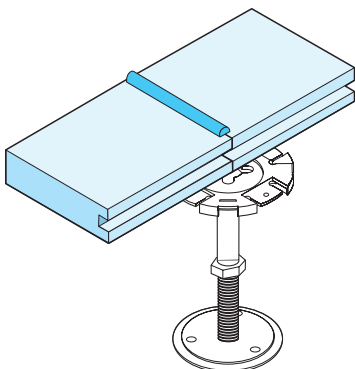
1

Joints to be located on center of the supports. Put glue onto the tongue, onto the front and into the groove (see right).



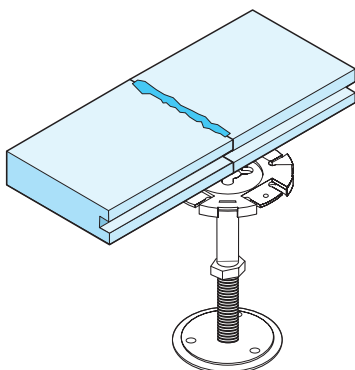
2

Installation sequence: put the tongue into the prepared groove immediately after glue application.



3

Leaking of the glue from the joints shows sufficient glue application.

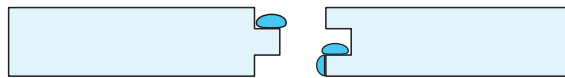


4

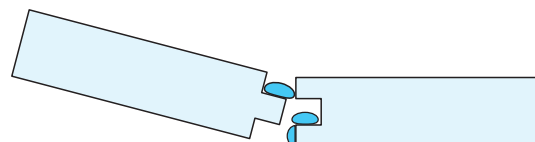
Scrape off the set glue with e.g. a sharp spatula.

### Glueing of the panels

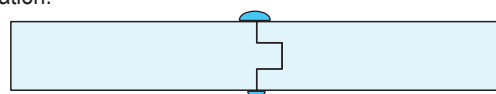
Put Nut- / Feder- Klebstoff (glue for tongue and groove) onto the tongue, onto the front and into the groove.



Installation sequence: put the tongue into the groove.



Leaking of the glue from the joints shows sufficient glue application.

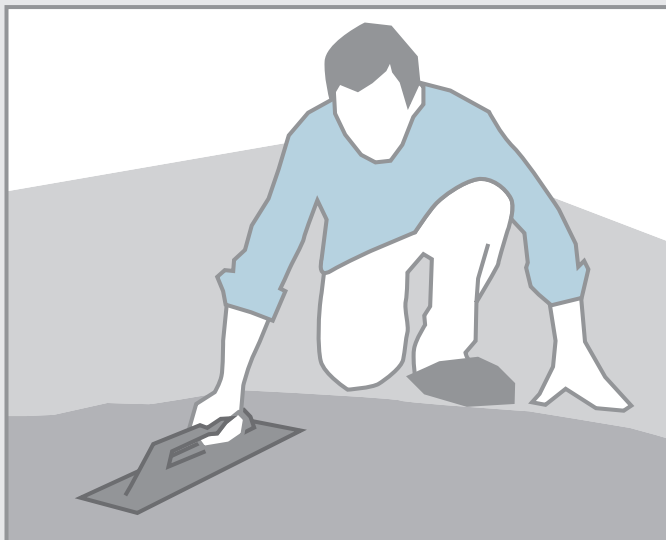


### Priming of the laid floor



Prime e.g. with Knauf Estrichgrund by a paint roller.  
Consumption: c. 200g/m<sup>2</sup>

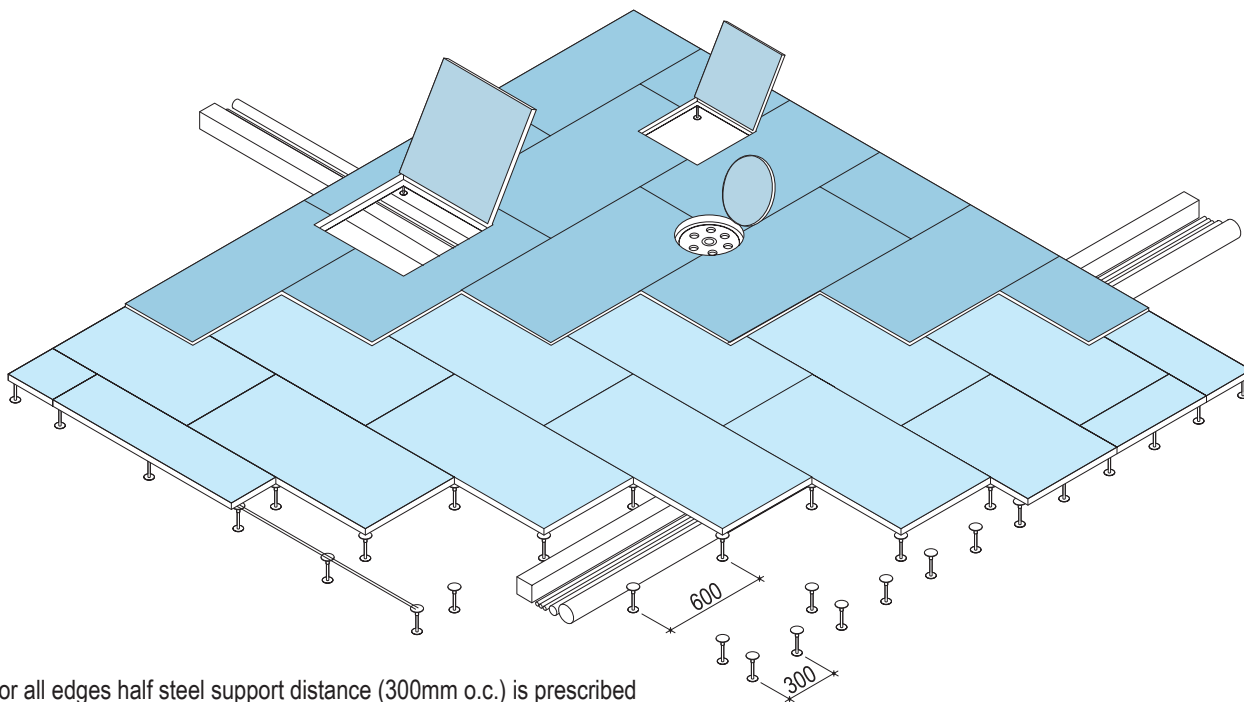
### Realizing of coating with Knauf Nivellierspachtel 415



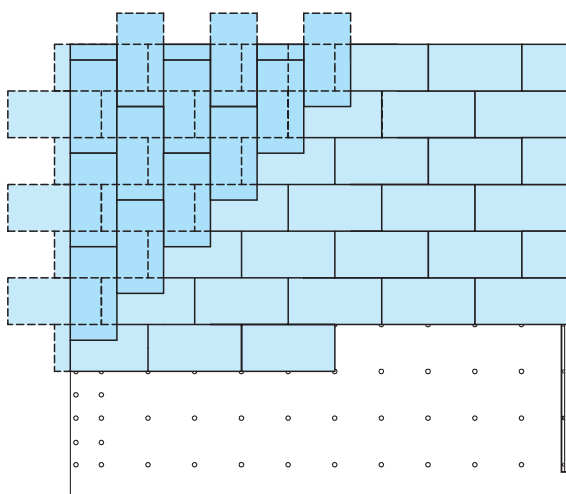
Consumption: c. 1.6 kg/m<sup>2</sup>/mm coating thickness.  
Afterwards to be primed.

# F182 GIFAfloor FHBplus

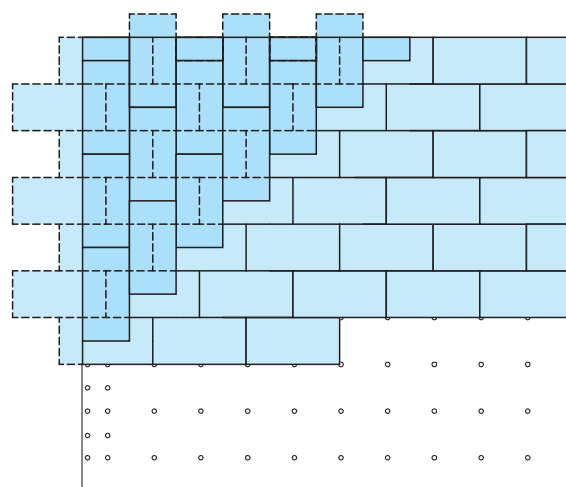
Application and processing of the second layer



For all edges half steel support distance (300mm o.c.) is prescribed  
alternative up to load class 5: Knauf Integral stringers heavy



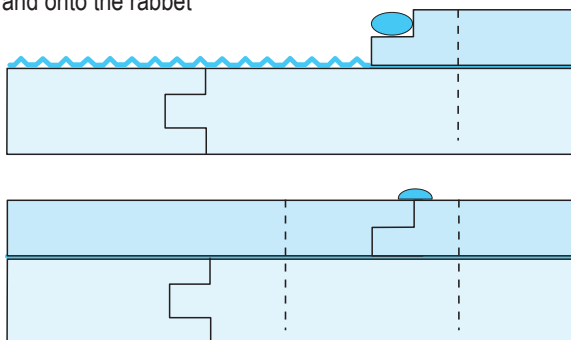
Shifting the joints of the second layer at least 20cm



Optimum shifting of the joints 30cm

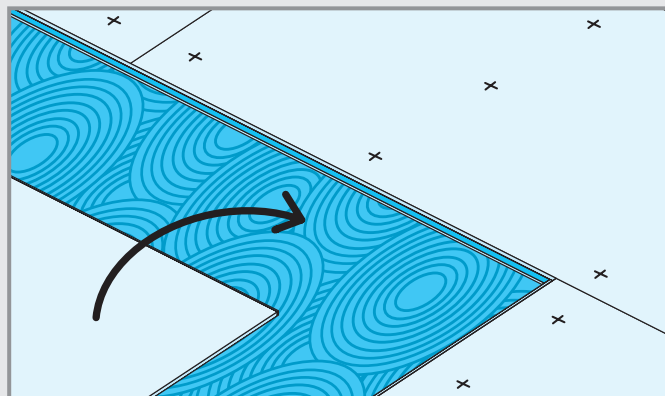
## Laying of the second layer (drawings without scale)

Put the glue holohedral onto the area  
and onto the rabbet



Put the LEP panel into the glue immediately, load + nail it.

## Put the LEP panel into the glue immediately after glue application



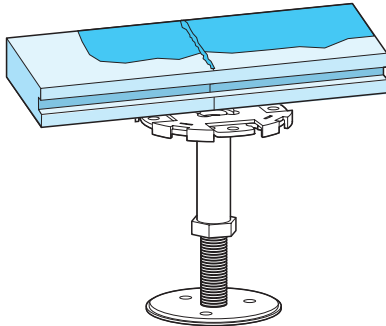
Put Flächenklebstoff (glue for the 2nd layer) onto the first layer holohedral and onto the rabbet. Load it after positioning and nail it with a nailer.

### Processing of the second layer

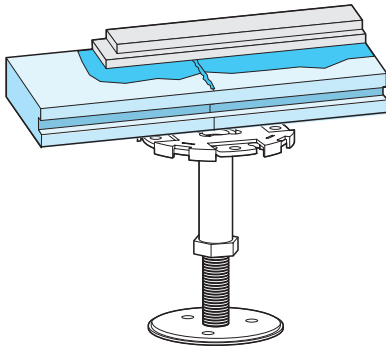
Glueing and joining of the tongue and groove of the first layer see drawing 1-4 page 9.

The rabbets of the GIFAfloor LEP panels could be glued with Knauf Integral Nut- / Feder- Klebstoff (glue for tongue and groove) or with Flächenklebstoff (glue for 2nd layer).

5

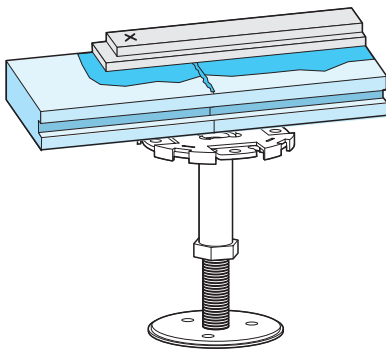


6



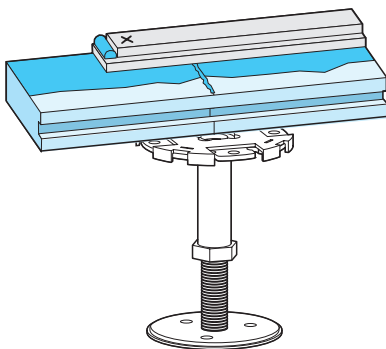
Put the LEP panel into the glue immediately after glue application.

7



The LEP panels respectively DLH panels for the second layer to be fixed immediately after being positioned in the applied glue. For this stand on the panel to be fixed while nailing with compressed air nailer or impulse nailer.

8

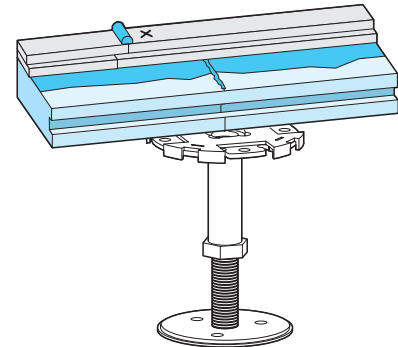


Glue for the next panel, continue as prescribed.

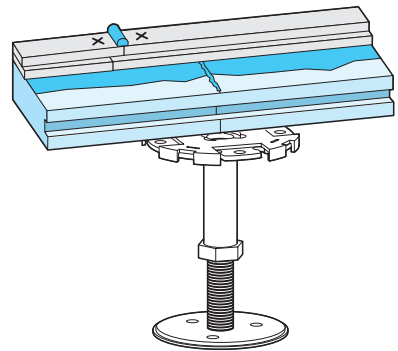
### Section of the notched blade TKB B3 (scale 1:1)



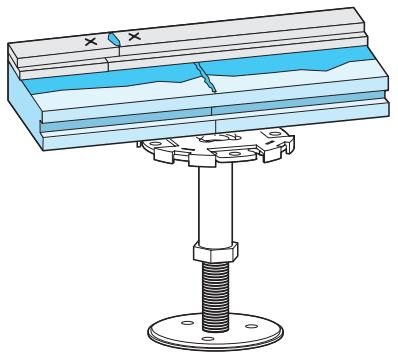
9



10

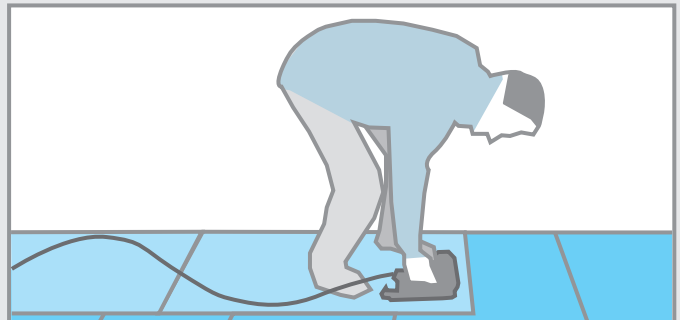


11



Scrape off the set glue with e.g. a sharp-edged spatula.

### Fixing with compressed air / impulse nailer while standing on the panel

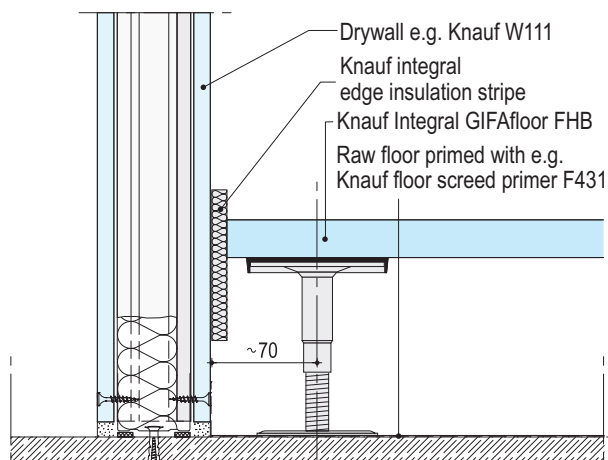


Compressed air nailer for brads: e.g. bradner Paslode FN 1665.1 (operation air pressure: 8.0 bar); brads e.g. Paslode F16x29 or Haubold SKN 16/30 C NK or SKN 16/25 C NK; gas impulse nailer: e.g. ITW impulse nailer IM65F 16 B-pack 19-64mm; brads e.g. pack F16-25mm (fuelcells + galv. brads)

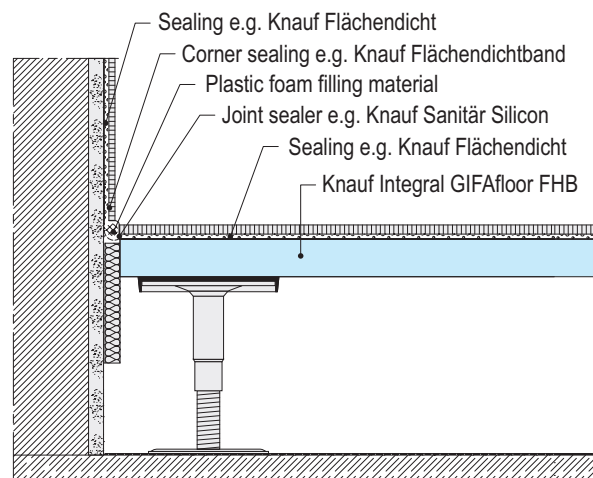
# F181 GIFAfloor FHB

Vertical sections single-layer system (scale 1:5)

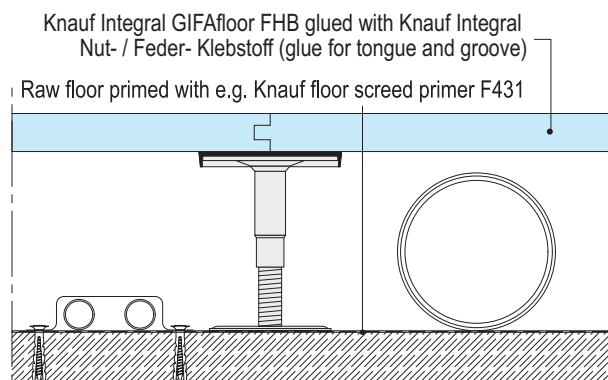
## F181-V1 Junction to drywall



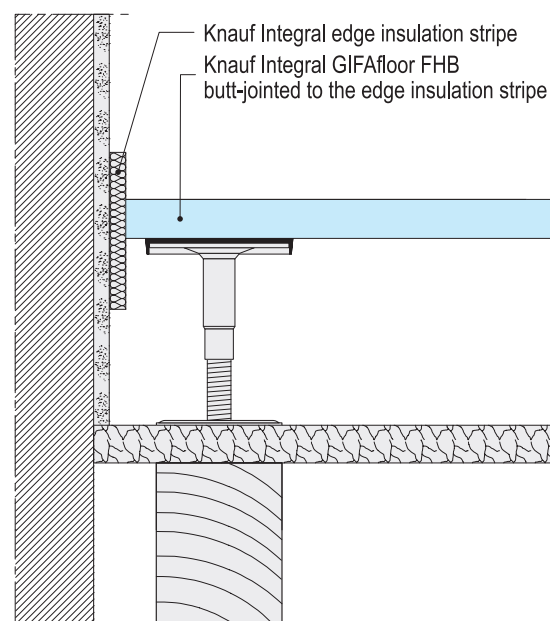
## F181-V2 Junction to massive wall



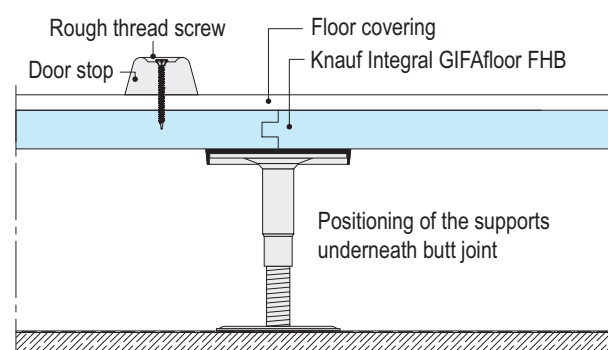
## F181-V4 Usage of the space for domestic service facilities



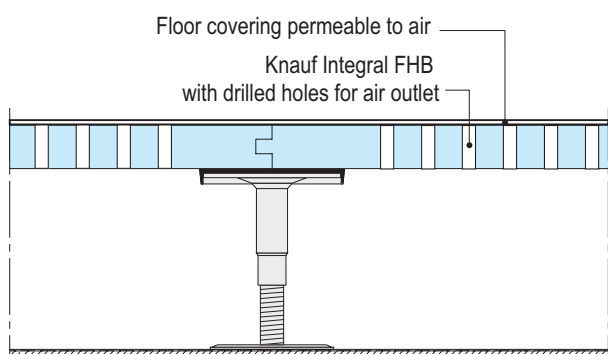
## F181-V3 Positioning of the steel supports on wooden joist ceiling



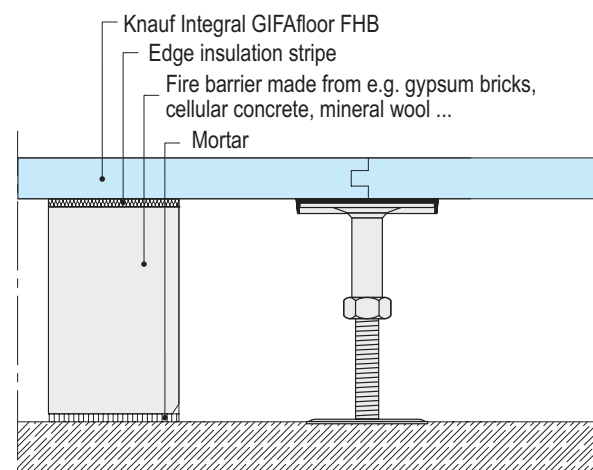
## F181-V6 Fixing of a



## F181- V5 Version with panels with drilled holes



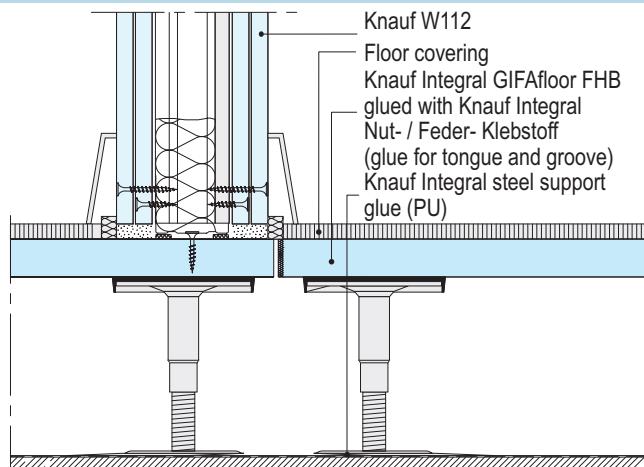
## F181-V9 Fire barrier



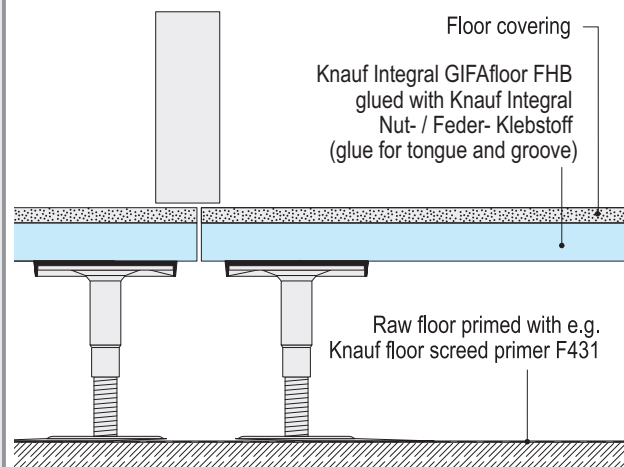
# F181 GIFAfloor FHB

Vertical sections single-layer system (scale 1:5)

**F181-V7 GIFAfloor FHBplus 25 + 18**  
Junction to drywall

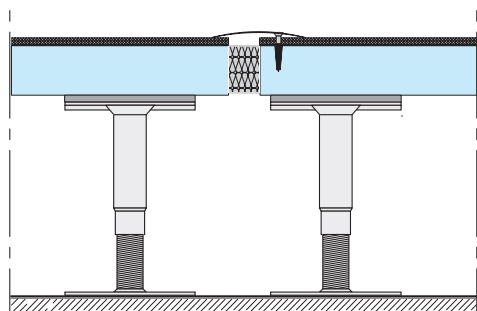


**F181-V8 Separation joint under a door leaf**

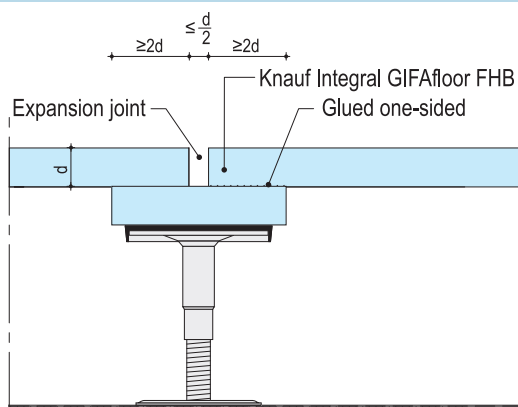


**F181-V15 Example: Installation of a joint cover profile**

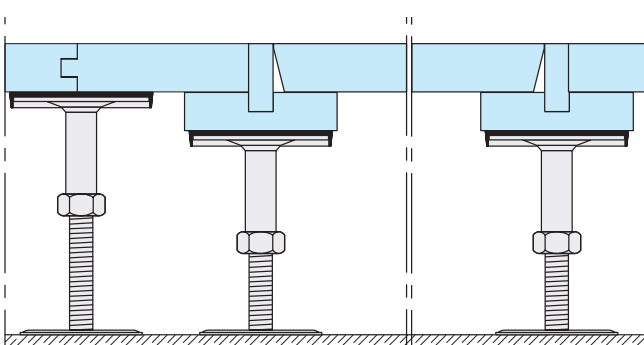
**Attention: Mounting one-sided!**



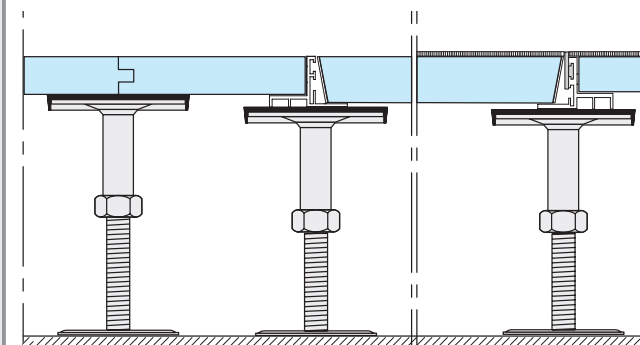
**F181-V11 Expansion joint with fire protection underlay**



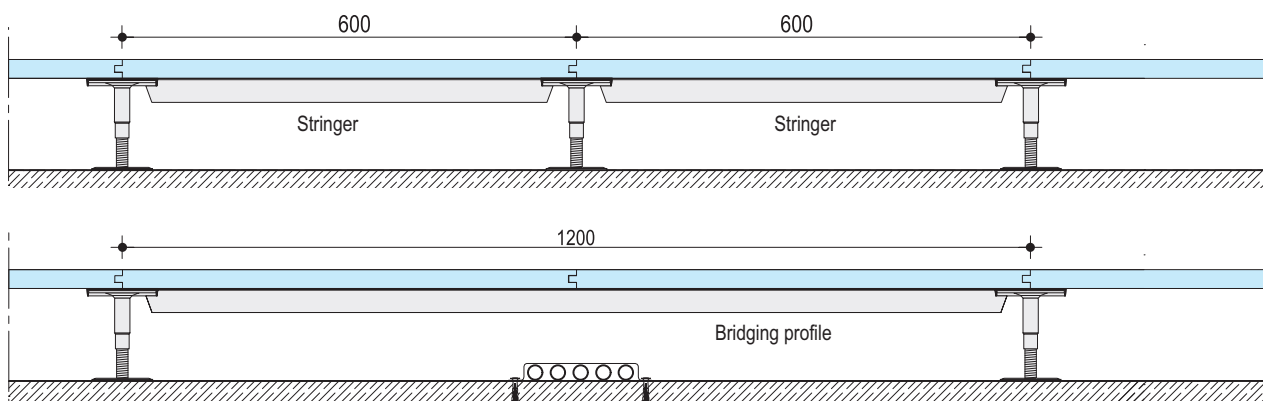
**F181-V12 Access opening fire protection F30 / F60**



**F181-V12b Access opening profile / frame**



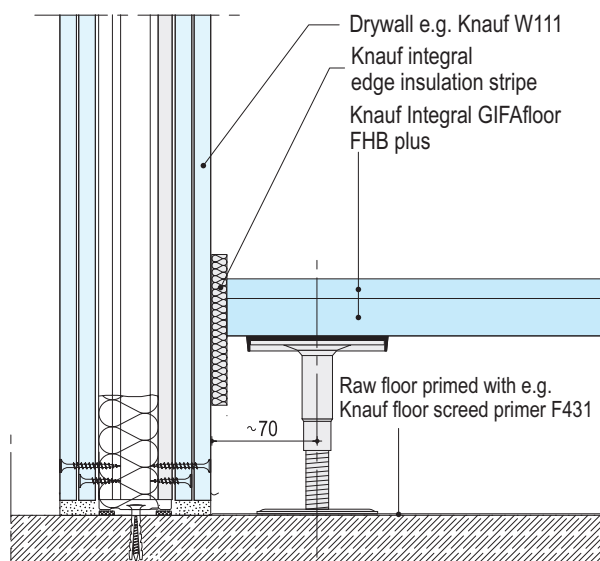
**F181-V13 / F181-V14 Examples: stringers / bridging profile (scale 1:10)**



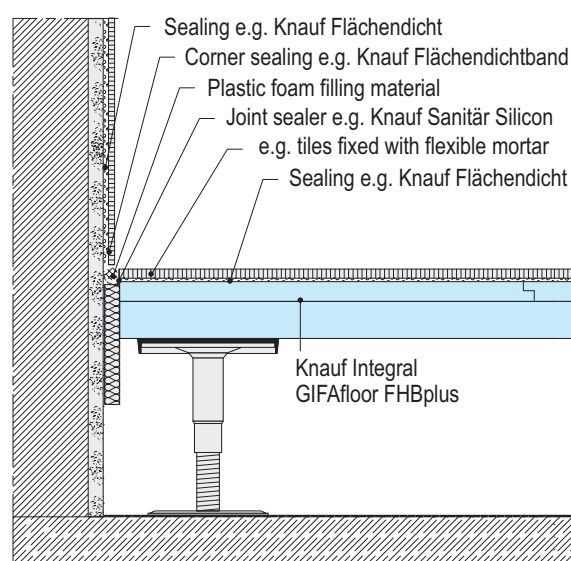
# F182 GIFAfloor FHBplus

Vertical sections double-layer system (scale 1:5)

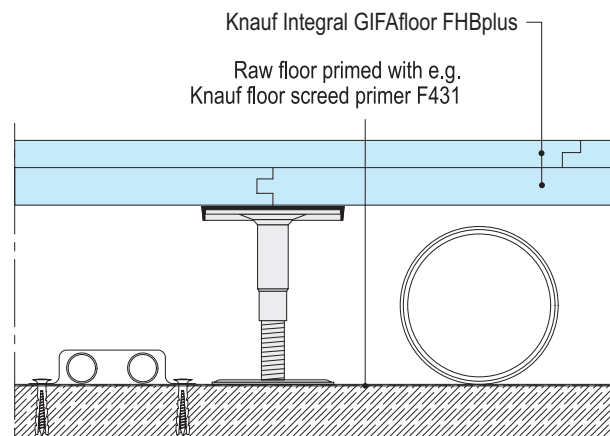
**F182-V31 GIFAfloor FHBplus 25+18  
Junction to drywall**



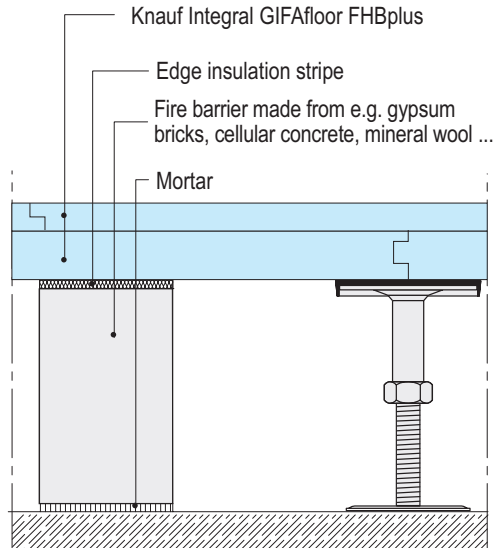
**F182-V32 GIFAfloor FHBplus 25+18  
Junction to massive wall**



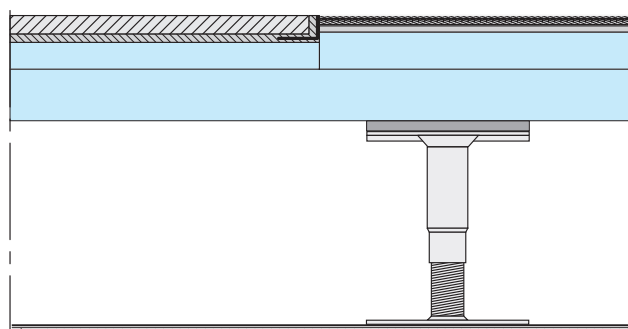
**F182-V34 GIFAfloor FHBplus 25+18 Usage of the  
space for domestic service facilities**



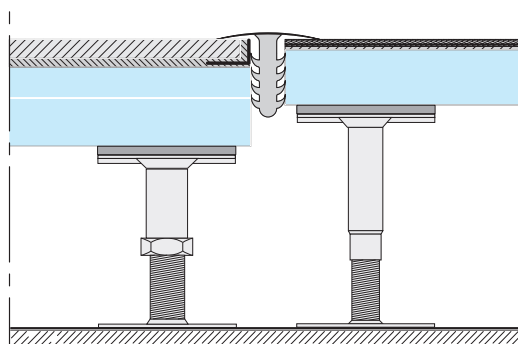
**F182-V39 GIFAfloor FHBplus 32+18  
Fire barrier**



**F182-V35 Change LEP 13 / LEP 18 for a variation of  
the floor finishing: tiles / thin elastic floor  
covering with full area mastic compound**



**F182-V36 Changing of the system F182 to F181  
(e.g. in the door area)**

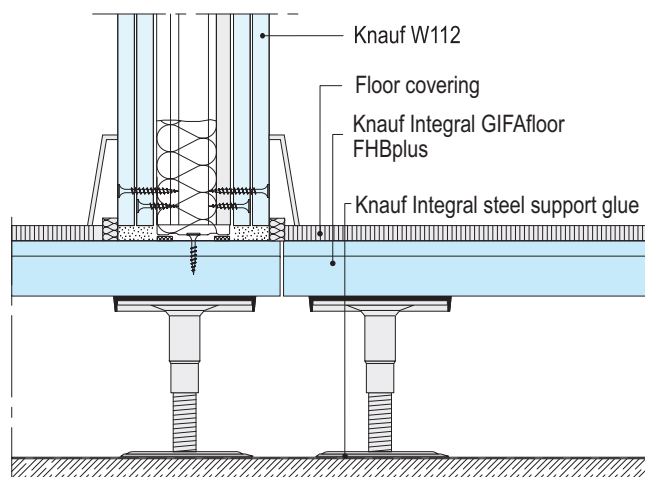




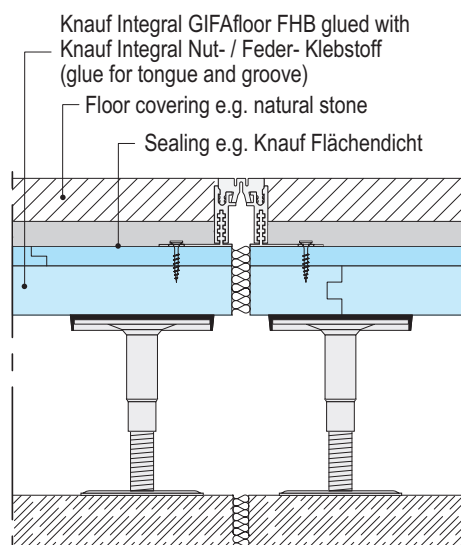
# F182 GIFAfloor FHBplus

Vertical sections double-layer system (scale 1:5)

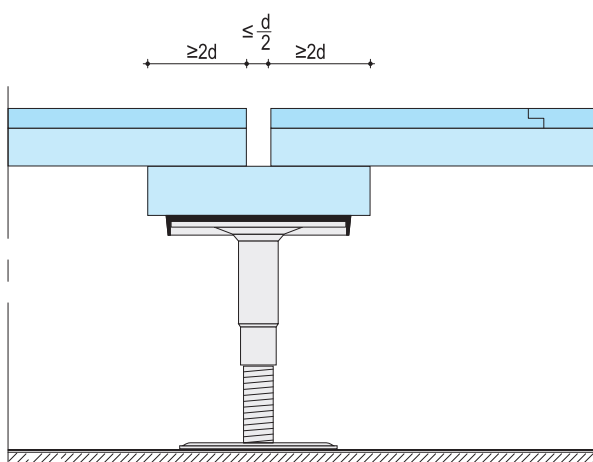
**F182-V37 Drywall on GIFAfloor FHBplus 32+13**



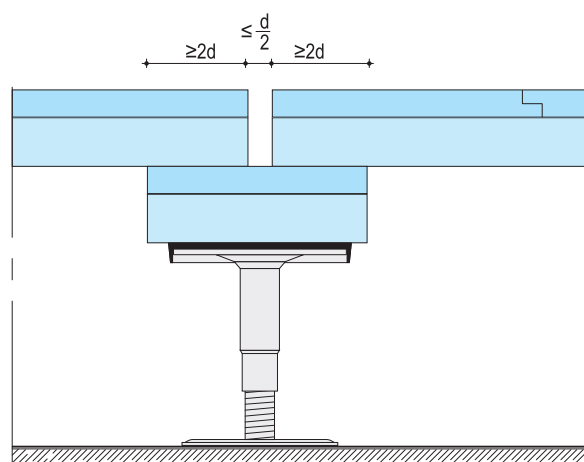
**F182-V40 GIFAfloor FHBplus 32+13**  
Example: installed movement joint profile



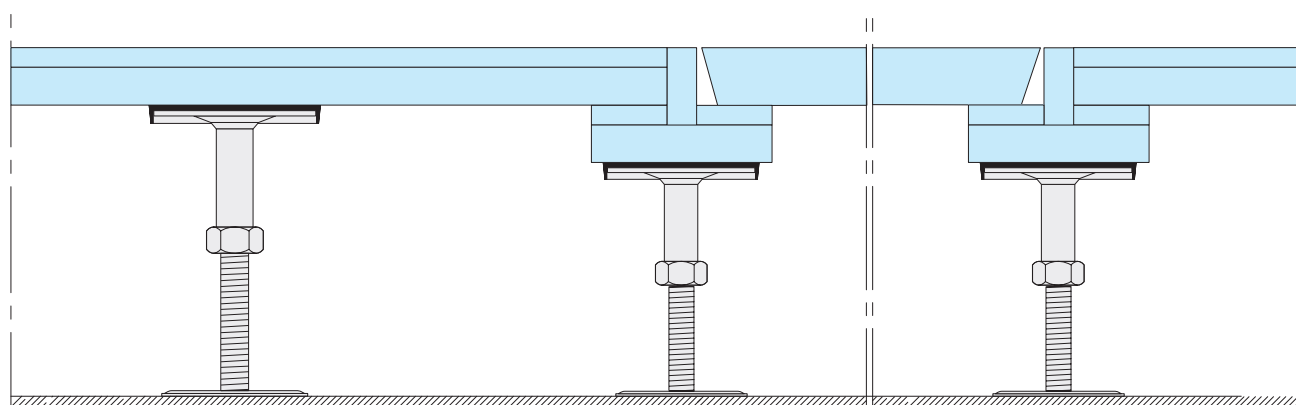
**F182-V41 GIFAfloor FHBplus 25+13 Expansion joint with fire protection underlay**



**F182-V41b GIFAfloor FHBplus 32+18 Expansion joint with fire protection underlay**



**F182-V42 GIFAfloor FHBplus 25+13 Access opening / transition to raised access floor panels**



## Transition profiles and access opening frames for GIFAfloor FHB systems

All transition profiles **universal uno** and **universal duo** and access opening frames **GIFAframe universal uno** and **GIFAframe universal duo** inclusive height adjustable, demontable aluminum profile for floor finishings (BTL)

Floor thickness [mm]*	FHB system	Type of profile	Length of profile [mm]	BTL adjustability	Mat.-no.	Suitable** revision panel / access floor panel	Accessories	Mat.-no.
25	F181 FHB25	Transition profile 25/34 with aluminum BTL	3000	0-8 mm*** flexible	74345	34R / DB 34	Joining plate	77807
25	F181 FHB25	Transition profile 25/34 with stainless steel BTL	3000	0-8 mm*** flexible	74348	34R / DB 34	Joining plate 90°	77808
28/32/38	F181 FHB28 to FHB38 F182 FHBplus 25+13	Transition profile universal uno 38/42 (incl. distance kit for 32/40 and 28/38)	3000	0-15mm in steps of 1mm	139308	for 28mm: 38R / DB38 for 32mm: 40R / DB40 for 38mm: 42R / DB42	Sealing foam tape 5x2mm	77809
43-56	F182 and F183 all systems from FHBplus 25+18 and FHBplus Klima 25+18	Transition profile universal duo 51/42 (incl. distance kit for 38R/40R/42R)	3000	0-15mm in steps of 1mm	142264	for 28mm: 38R / DB38 for 32mm: 40R / DB40 for 38mm: 42R / DB42	Distance kit uno 32/40 and 28/38 for one 3m profile End kit uno 300x600x300mm	139307 139310
							Distance kit duo for 38R / DB38 40R / DB40 and 42R / DB42 for one 3m profile End kit duo 300x600x300mm	139518 142265

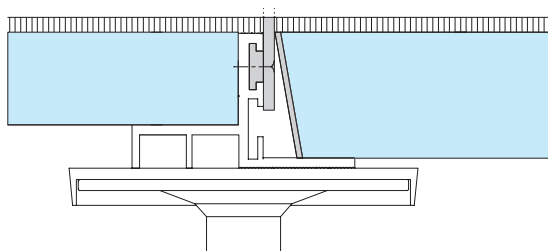
## Access opening frames

Floor thickness [mm]*	FHB system	Type of transition profile	Inside dimension of frame [mm]	BTL-Verstellbereich	Mat.-no.	Suitable** revision panel / access floor panel	Accessories	Mat.-no.
25	F181 FHB25	Transition profile FHB25	600x600 with aluminum BTL	0-8 mm***	30080 flexible	34R / DB 34	Sealing foam tape 5x2mm installed in the 600x600mm	77810
25	F181 FHB25	Transition profile FHB25 with stainless steel BTL	600x600	0-8 mm*** flexible	77801	34R / DB 34	access opening frame	
25	F181 FHB25	Transition profile FHB25	1200x600 with aluminum BTL	0-8 mm***	77798 flexible	34R / DB 34	Sealing foam tape 5x2mm installed in the 1200x600mm	77811
25	F181 FHB25	Transition profile FHB25 with stainless steel BTL	1200x600	0-8 mm*** flexible	77802	34R / DB 34	access opening frame	
28/32/38	F181 FHB28 to FHB38 F182 FHBplus 25+13	GIFAframe universal uno 38/42 (incl. distance kit for 32/40 and 28/38)	600x600 1200x600	0-15mm in steps of 1mm	139306 146151	for 28mm: 38R / DB38 for 32mm: 40R / DB40 for 38mm: 42R / DB42	Distance kit uno 32/40 and 28/38 for one access opening frame	139307
43-60	F182 and F183 all systems from FHBplus Klima 25+18 and FHBplus Klima 25+18	GIFAframe universal duo 51/42 (incl. distance kit for 38R/40R/42R)	600x600 1200x600	0-15mm in steps of 1mm	139517 159312	for 28mm: 38R / DB38 for 32mm: 40R / DB40 for 38mm: 42R / DB42	Distance kit duo for 38R / DB38; 40R / DB40; and 42R / DB42 for one access opening frame	139518

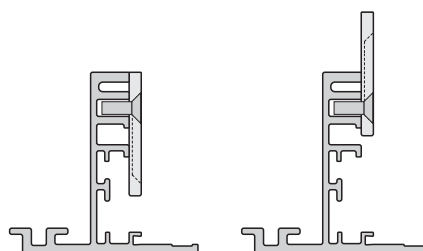
\*\*\* higher BTL available on request

\* Full area mastic compound is not considered  
\*\* Attention! For heavy load floors: the bearing capacity of the access opening panels is less!

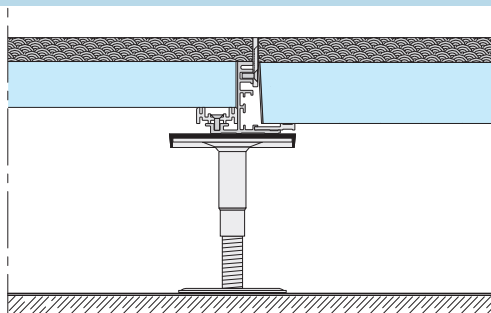
**Transition profile 25/34 and access opening frame FHB25 with aluminum profile for floor finishings (BTL)**



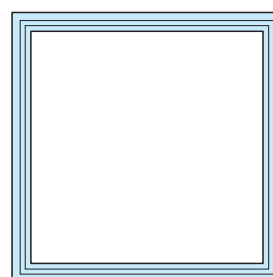
**Transition profile universal uno 38/42 and GIFAframe universal uno 38/42**



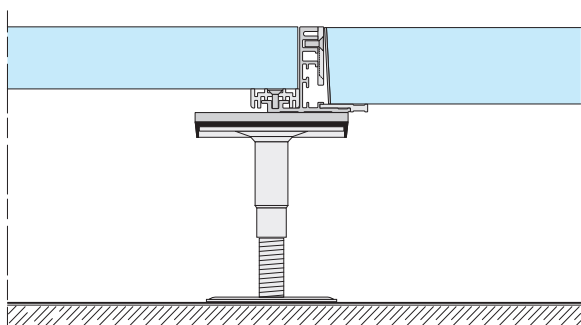
**F181-V16 Transition profile universal uno 38/42 and GIFAframe universal uno 38/42**



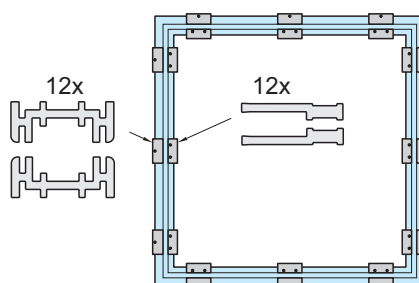
**Installation of GIFAframe universal uno for FHB38 without distance kit**



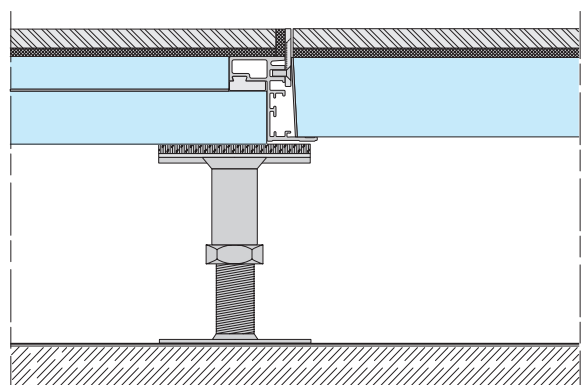
**F181-V17 Transition profile universal uno 38/42 and GIFAframe universal uno 38/42**



**Installation of GIFAframe universal uno for FHB28 and for FHB32 with distance kit**

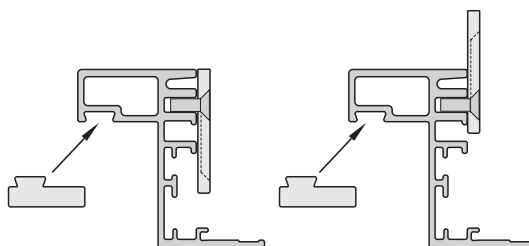


**F182-V43 Transition profile universal duo and GIFAframe universal duo**



**Transition profile universal duo and GIFAframe universal duo**

Installation for LEP13 without distance part  
Installation for LEP18 with distance part

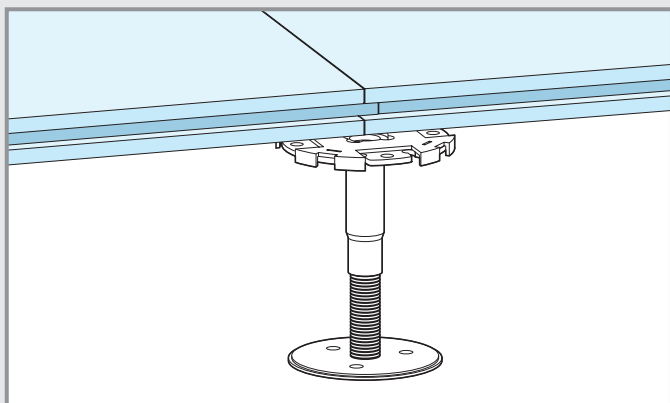


Installation of the access opening panels 38R and 40R / DB panels GIFAfloor DB38 and DB40 in each case with distance kit

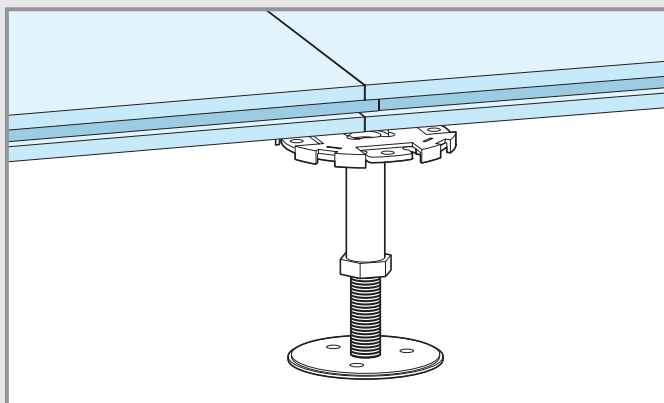
# F18 GIFAfloor

Construction steel supports

Threaded head support



Pipe-head support



Threaded-head supports M12 S for GIFAfloor FHB

Support height in mm			Mat.-No.
Medium height	min.	max.	
28	23	33	102661
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

Pipe-head supports M16 ST\* for GIFAfloor FHB and GIFAfloor FHBplus

Support height in mm			Mat.-No.
Medium height	min.	max.	
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	102663
502,5	475	530	102664
552,5	525	580	102665

\*Other support heights on request

Threaded-head supports M12 S for GIFAfloor FHB

Support height in mm			Mat.-no.
Medium height	min.	max.	
32,25	26,5	38	41191
37,5	30	45	74368
45	35	55	102662
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

Pipe-head supports M16 ST\* for GIFAfloor FHB and GIFAfloor FHBplus

Support height in mm			Mat.-no.
Medium height	min.	max.	
212,5	185	240	74412
262,6	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
662,5	635	690	74421
712,5	685	740	74422
762,5	735	790	74423
812,5	785	840	74424
862,5	835	890	74425
912,5	885	940	74426
962,5	935	990	74427
1062,5	1035	1090	74428
1162,5	1135	1190	74429

\* Other support heights on request.  
The installation of stringers is only possible with support types M16 S, M16 ST, M20 ST up to load class 5.  
Supports with bigger wall thickness e.g. for FHBultra or for fire protection reasons on request.

# F18 GIFAfloor

## Requirement of material

Material	Mat.-no.		Unit	Required quantity*
Knauf Knauf floor screed primer F 431	5355		10 kg pail	c.200g / m <sup>2</sup>
Knauf Integral steel support glue (PU)	48422		600 g tubular bag (film tube)	c.15g / support
Knauf Integral application gun for film tubes	4657		pc.	as required
Steel supports	see table p.6		pc.	c. 3.9 pcs. / m <sup>2</sup>
Thread sealer	78362		1000 ml spray bottle	c. 1 Fl. / 500 supports
Support sheets 90 without naps	30056		100 pc. / bag	c. 3.9 pcs./m <sup>2</sup>
Support sheets 100 without naps	30056		100 pc. / bag	c. 3.9 pcs./m <sup>2</sup>
Insulation sheets round, self-adhesive, 2mm	44135		pc.	additional c. 3.9 pcs. / m <sup>2</sup>
Insulation sheets cornered, self-adhesive, 2mm	44134		pc.	alternative c. 3.9 pcs. / m <sup>2</sup>
Knauf Integral stringers light	74336		pc.	if required c. 5.8 pcs. / m <sup>2</sup>
Knauf Integral stringers heavy	74337		pc.	if required c. 5.8 pcs. / m <sup>2</sup>
Knauf Integral ZD-diagonal rod	74338		pc.	as required
Knauf Integral edge insulation stripes for GIFAfloor systems	109147		c.13x100x1200mm 50 pcs. / carton	as required
Knauf Integral foam insulation stripe self-adhesive sk	74339		5x10m roll / bag 20 bags / carton	as required
GIFAfloor FHB panels	see table p.2		palette	c. 1.39 pcs. / m <sup>2</sup>
GIFAfloor LEP panels	see table p.2		palette	if required c. 1.39 pcs./m <sup>2</sup>
GIFAfloor DLH panels	see table p.2		palette	as required
Knauf Integral Nut- / Feder- Klebstoff (glue for tongue and groove)	141974		20 pcs. tubular bags à 600ml (~900g) / carton	F181 c. 82m <sup>2</sup> / carton F182 c. 54m <sup>2</sup> / carton + glue for 2nd layer
Knauf Integral application gun for film tubes	4657		pc.	as required
Knauf Integral Flächenklebstoff (glue f. 2nd layer)	141975		15 kg pail	c. 600g/m <sup>2</sup>
Coloquick spreader	4696		pc.	as required
Notched blades TKB B3 double sided 28cm for Coloquick spreader	4697		12 pcs. / pack	as required
GIFAfloor access panel	see table p. 2		pc.	as required
Knauf Integral access opening frame 25/34 600x600mm 1200x600mm	BTL aluminum 30080 77798	BTL stainl. steel 77801 77802	pc.	as required
Sealing foam tape for 25/34 600x600mm 1200x600mm	77810 77811		pc.	as required
Knauf Integral transition profile 25/34	BTL aluminum 74345	BTL stainl. steel 74348	pc.	as required
Joining plate for transition profile 25/34	77807		pc.	as required
Joining plate 90° for transition profile 25/34	77808		pc.	as required
Sealing foam tape for transition profile 25/34	77809		10m roll (5x2mm)	as required
Access opening frame GIFAframe universal uno	139306		pc.	as required
Distance kit uno	139307		pc.	as required
Access opening frame GIFAframe universal duo	139517		pc.	as required
Distance kit duo	139518		pc.	as required
Transition profile universal uno	139308		pc.	as required
End kit uno	139310		pc.	as required
Distance kit uno	139307		pc.	as required
Transition profile universal duo	142264		pc.	as required
End kit duo	142265		pc.	as required
Distance kit duo	139518		pc.	as required

\* Specification refers to a room dimension of 10x10m.  
Different room dimensions may cause different quantities.

Pos.	Description	Quantity	Unit price	Total price																												
.....	<p>Sheet-panelled access floor single-layer, type <b>Knauf Integral GIFAfloor FHB F181</b> or equivalent, made of adjustable, zinc-coated steel supports fixed to the primed raw floor by steel support glue, support sheets / insulation sheets* to put the <b>GIFAfloor FHB</b> panels as a floating layer on them. All corners of the <b>GIFAfloor FHB</b> panels are positioned on center of the supports. Panels laid in staggered position, connected by glued tongue and groove system to get big plates, ready for floor covering.</p> <p>Technical demands:</p> <table><tr><td>Producer:</td><td><b>Knauf Integral</b></td></tr><tr><td>Type:</td><td><b>GIFAfloor FHB F181 25/28/32/38*</b></td></tr><tr><td>Size of the panels:</td><td>1200x600mm t&amp;g / 600x600mm t&amp;g</td></tr><tr><td>Thickness / density:</td><td>..... mm / 1500 kg/m<sup>3</sup></td></tr><tr><td>Class / breaking load:</td><td>... / ≥ .....N</td></tr><tr><td>Safety factor:</td><td>2</td></tr><tr><td>Building material class:</td><td>A1 acc. EN 13501-1</td></tr><tr><td>Fire protection class:</td><td>F 30 AB / F 60 AB*</td></tr><tr><td>Structural module of the supports:</td><td>600x600mm; 425x425mm; 300x300mm* edge regions 300mm or stringers heavy</td></tr><tr><td>Structure height:</td><td>..... mm</td></tr><tr><td>Type of floor covering:</td><td>.....</td></tr><tr><td>Furnish and install</td><td>.....m<sup>2</sup> ..... € .....€</td></tr></table>	Producer:	<b>Knauf Integral</b>	Type:	<b>GIFAfloor FHB F181 25/28/32/38*</b>	Size of the panels:	1200x600mm t&g / 600x600mm t&g	Thickness / density:	..... mm / 1500 kg/m <sup>3</sup>	Class / breaking load:	... / ≥ .....N	Safety factor:	2	Building material class:	A1 acc. EN 13501-1	Fire protection class:	F 30 AB / F 60 AB*	Structural module of the supports:	600x600mm; 425x425mm; 300x300mm* edge regions 300mm or stringers heavy	Structure height:	..... mm	Type of floor covering:	.....	Furnish and install	.....m <sup>2</sup> ..... € .....€							
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Furnish and install	.....m <sup>2</sup> ..... € .....€																															
.....	<p>Sheet panelled access floor double-layer type <b>Knauf Integral GIFAfloor DLH F182</b> or equivalent, made of adjustable, zinc-coated steel supports fixed to the primed raw floor by steel support glue, support sheets / insulation sheets* to put the <b>GIFAfloor DLH25</b> panels as a floating layer on them. All corners of the <b>GIFAfloor DLH25</b> panels are positioned on center of the supports. Panels laid in staggered position, connected by glued tongue and groove system to get big plates. The <b>GIFAfloor DLH13</b> panels of the second layer are laid turned 90°, with staggered joints and are glued holohedral to the first layer and together on the rebate.</p> <p>After positioning they are immediately fixed by compression air / impulse nailing, ready for floor covering.</p> <p>Technical demands:</p> <table><tr><td>Producer:</td><td><b>Knauf Integral</b></td></tr><tr><td>Type:</td><td><b>GIFAfloor DLH F182 25+13</b></td></tr><tr><td>Panel thickness 1st layer / density:</td><td>25 mm / 1100 kg/m<sup>3</sup></td></tr><tr><td>Size of the panels:</td><td>1200x600mm t&amp;g</td></tr><tr><td>Panel thickness 2nd layer / density:</td><td>13 mm / 1100 kg/m<sup>3</sup></td></tr><tr><td>Size of the panels:</td><td>1200x600mm re</td></tr><tr><td>Class / breaking load:</td><td>... / ≥ .....N</td></tr><tr><td>Safety factor:</td><td>2</td></tr><tr><td>Building material class:</td><td>A1 acc. EN 13501-1</td></tr><tr><td>Fire protection class:</td><td>F 30 AB / F 60 AB*</td></tr><tr><td>Structural module of the supports:</td><td>600x600mm; 425x425mm* edge regions 300mm or stringers heavy</td></tr><tr><td>Structure height:</td><td>..... mm</td></tr><tr><td>Type of floor covering:</td><td>.....</td></tr><tr><td>Furnish and install</td><td>.....m<sup>2</sup> ..... € .....€</td></tr></table>	Producer:	<b>Knauf Integral</b>	Type:	<b>GIFAfloor DLH F182 25+13</b>	Panel thickness 1st layer / density:	25 mm / 1100 kg/m <sup>3</sup>	Size of the panels:	1200x600mm t&g	Panel thickness 2nd layer / density:	13 mm / 1100 kg/m <sup>3</sup>	Size of the panels:	1200x600mm re	Class / breaking load:	... / ≥ .....N	Safety factor:	2	Building material class:	A1 acc. EN 13501-1	Fire protection class:	F 30 AB / F 60 AB*	Structural module of the supports:	600x600mm; 425x425mm* edge regions 300mm or stringers heavy	Structure height:	..... mm	Type of floor covering:	.....	Furnish and install	.....m <sup>2</sup> ..... € .....€			
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Furnish and install	.....m <sup>2</sup> ..... € .....€																															

\* cancel non-applicable items

t&g = tongue and groove

re = rebate edges



Pos.	Description	Quantity	Unit price	Total price
.....	<p>Sheet panelled access floor double-layer type <b>Knauf Integral GIFAfloor FHBplus F182</b> or equivalent, made of adjustable, zinc-coated steel supports fixed to the primed raw floor by steel support glue, support sheets / insulation sheets* to put the <b>GIFAfloor FHB</b> panels as a floating layer on them. All corners of the <b>GIFAfloor FHB</b> panels are positioned on center of the supports. Panels laid in staggered position, connected by glued tongue and groove system to get big plates.</p> <p>The <b>GIFAfloor LEP</b> panels of the second layer are laid turned 90°, with staggered joints and are glued holohedral to the first layer and together on the rebate joint.</p> <p>After positioning they are immediately fixed by compression air / impulse nailing, ready for floor covering.</p> <p>Technical demands:</p> <p>Producer: <b>Knauf Integral</b>  Type: <b>GIFAfloor FHBplus F182</b>  25+13; 25+18; 28+13; 28+18; 32+13; 32+18; 38+18*</p> <p>Panel thickness 1st layer / density: ..... mm / 1500 kg/m<sup>3</sup>  Size of the panels: 1200x600mm t&amp;g / 600x600mm t&amp;g  Panel thickness 2nd layer / density: ..... mm / 1500 kg/m<sup>3</sup>  Size of the panels: 1200x600mm re  Class / breaking load: ... / ≥ .....N  Safety factor: 2  Building material class: A1 acc. EN 13501-1  Fire protection class: F 30 AB / F 60 AB*  Structural module of the supports: 600x600mm; 425x425mm; 300x300mm*  edge regions 300mm or stringers heavy</p> <p>Structure height: ..... mm  Type of floor covering: . .....  Furnish and install: .....m<sup>2</sup> ..... € .....€</p>			
.....	<p>Priming the vacuum-cleaned raw floor to bind remained dust with <b>Knauf Floor screed primer F431</b> or equivalent.</p> <p>Furnish and install .....m<sup>2</sup> ..... € .....€</p>			
.....	<p>Extra charge. Installation of <b>Knauf Integral edge insulation stripes / Knauf Integral foam insulation stripes self-adhesive sk*</b> to separate the sheet-panelled access floor GIFAfloor from surrounding building parts.</p> <p>Furnish and install .....m ..... € .....€</p>			
.....	<p>Extra charge. Installation of separation / extension / movement* joints including the delivery and installation of the required additional supports (grid 300mm o.c.) / stringers heavy*</p> <p>Furnish and install .....m ..... € .....€</p>			

Pos.	Description	Quantity	Unit price	Total price
.....	Extra charge. Installation of <b>Knauf Integral transition profiles</b> with floor covering separation profile aluminum / stainless steel*, flush with the surface to the sheet-panelled access floor <b>GIFAfloor FHB F181 / GIFAfloor FHBplus 182</b> for connection with <b>Knauf Integral GIFAfloor DB / GIFAfloor access panels</b> . Furnish and install	.....pc.	..... €	.....€
.....	Extra charge. Installation of <b>Knauf Integral access opening frame</b> with / without* floor covering separation profile aluminum / stainless steel*, flush with the surface to the sheet-panelled access floor <b>GIFAfloor FHB F181 / GIFAfloor FHBplus 182</b> for installation of <b>GIFAfloor access panels</b> . Furnish and install	.....pc.	..... €	.....€
.....	Extra charge. Installation of <b>Knauf Integral access panel GIFAfloor 34R; 38R; 40R; 42R*</b> into the <b>Knauf Integral access opening frame</b> in the sheet-panelled access floor <b>GIFAfloor FHB F181 / GIFAfloor FHBplus</b> . Furnish and install	.....pc.	..... €	.....€
.....	Extra charge. Making round / rectangular* cut-outs of the <b>GIFAfloor</b> with a maximum size 305 diameter / edge length* (only possible in the middle of the grid of the supports) including the delivery and installation of the required additional supports. Furnish and install	.....pc.	..... €	.....€
.....	Extra charge. Cutting out rectangular connection at the edges of the <b>GIFAfloor sheet-panelled access floor</b> , including required additional supports. Furnish and install	.....m/pc.*	..... €	.....€
.....	Extra charge. Cutting out round / curved* connection at the edges of the <b>GIFAfloor sheet-panelled access floor</b> , including required additional supports. Furnish and install	.....m/pc.*	..... €	.....€
.....	Extra charge. Making round / rectangular* cut-outs of the area of the <b>GIFAfloor</b> for e.g. columns, including the delivery and installation of the required additional supports. Furnish and install	.....m/pc.*	..... €	.....€
.....	Extra charge. Installation of steps to prepare the <b>GIFAfloor sheet-panelled access floor</b> for different thickness of floor finishings including required separation joints with additional supports (grid 300mm o.c.) / stringers heavy*. Furnish and install	.....m	..... €	.....€
.....	Extra charge for different lengths of the supports caused by different heights of the level of the raw floor. Furnish and install	.....m <sup>2</sup>	..... €	.....€
.....	Extra charge. Installation of protective covering consists of cardboard / plastic film / non-woven material / derived timber panels* protected against shifting. Furnish and install	.....m <sup>2</sup>	..... €	.....€

\* cancel non-applicable items

### Construction

Knauf Integral GIFAfloor FHB panels are made of Knauf Integral GIFAtec gypsum fibre material in standardized thicknesses of 25, 28, 32 or 38mm. The size of the GIFAfloor FHB panels is 1200x600mm with tongue and groove edges to be stuck with Knauf Integral Nut- / Feder- Klebstoff (glue for tongue and groove).

The GIFAfloor panels are laid floating on the height adjustable and levelled steel supports. The steel supports have been fixed to the load bearing raw ceiling. The system is suitable for floor heating and cooling systems.

In the cavity all mechanical services could be installed and drywalls could be mounted at any place on the GIFAfloor FHB systems while observing the load limits. Joints have to be planned according their width, positioning and construction.

### Grounding

The ground has to take at least the ultimate loads of the floor system supported by the steel supports. The ground must be dry and solid and free of separating agents like e.g. bitumen, oil or colours. Insulation materials and bituminous sheetings usu-

ally are only with a sufficient load-distributing base able to support hollow floor systems. The raw floor has to be swept and vacuum cleaned thoroughly and to be primed with e.g. z.B. Knauf Estrichgrund F 431.

Control joints of the structure of the building have to be placed at the same position of the GIFAfloor FHB.

### Installation

Put edge insulation stripes or foam insulation stripes self-adhesive at the connecting building parts. Mark the positions of the first row of steel supports. Stick the bases of the steel supports with approx. 15g Knauf Integral Stützenkleber (steel support glue PU) to the ground, then adjust them with a laser or with a spirit level with high accuracy measurement precision.

For all edge areas of the GIFAfloor FHB F181: steel support center distance  $\leq 70$ mm.

Put support sheets or insulation sheets self-adhesive on the steel supports, secure thread against loosen using thread sealer.

All edge areas of the GIFAfloor half steel support distance (grid 300mm o.c.) or stringers heavy! Second row of steel supports for the first panel to be installed like described before. Cut at least both tongues of the first panel, put it onto the prepared steel supports and press against the edge insulation stripes.

Cutting of the GIFAfloor panels with e.g. circular saw with a diamond- tipped saw blade and dust exhaustion system or with e.g. a pendulum jigsaw / assembly band saw with a HM-tipped saw blade. Cut the tongue of the second and the following panels of the first row.

Put Nut- / Feder- Klebstoff (glue for tongue and groove) into the groove of the located panel and onto the tongue of the panel to be laid (see page 9). Put the panels together butt jointed immediately in true alignment.

Second and the following rows of panels to be installed in a staggered position (half of the panel's length).

Glue coming out of the butt joint shows that the quantity of the glue is sufficient and could be scraped off e.g. by using a sharp-edged spatula next day.

The edge insulation stripes for the gap behind the last row of GIFAfloor panels have to be insert into the gap at last.

Don't walk on the installed GIFAfloor for c.12 hours.

The floor system is receptive to the full working load after c. 24 hours (standard time of the glue is fully set).

For support heights higher than c. 500mm stringers are recommended, for heights higher than c. 800mm or expected lateral forces (e.g. corridors in front of elevators in hospitals) Knauf Integral ZD diagonal rods are advised.

### Treatment of the surface and floor finishing

Control joints, expansion joints, transition joints and connection joints of the GIFAfloor must be adopted to the floor finishing.

GIFAfloor resists the castors of chairs without supplementary treatment.

Prime with Knauf Estrichgrund F431 or with the primer prescribed of the used adhesive system.

Fitted carpet without putty, or if necessary jointing with Knauf Uniflott. Thin elastic floor coverings (e.g. PVC, linoleum) only with full area mastic compound (self levelling) Knauf Nivellierspachtel 415, minimum thickness 2mm, after beeing dry to be primed.

Ceramic tiles and natural stone to be fixed with flexible tile adhesives preferably on double-layer systems F182. The prescribed installation guides of the manufacturer of the glue system especially the minimum thickness of the glue for the choosen tile size must be observed. Porcelain stoneware to be fixed by buttering and floating method, herefor put the tiles into the glue sideways while pressing it down. The usage of fleece or woven recommended by the manufacturer of the glueing system is possible.

If the allowed deflections of GIFAfloor by expected loads are bigger than the possible deflection of the floor covering, additional steps to reduce those deflections have to be planned. For further limitation of these deflections use thicker panels and/or additional supports and/or a second layer of panels.

Protect the GIFAfloor against water e.g. in bathrooms by using a liquid sealant system (e.g. Knauf Flächendicht / Flächendichtband).

Lay parquet flooring as a floating system or thickness of the parquet limited to  $\leq 2/3$  of the thickness of the GIFAfloor panels. The installation guides of the manufacturer of the parquet and of the glueing system for the choosen type of parquet flooring have to be considered.

Fluid floor coverings like e.g. epoxy resin floors have to be elastified and, depending on the manufacturer, water vapour permeable.

Test the bond strength of the floor finish / glueing system (if necessary by usage of a specimen).

### Construction

Knauf Integral GIFAfloor FHB panels are made of Knauf Integral GIFAtec gypsum fibre material in standardized thicknesses of 25, 28, 32 or 38mm. The size of the panels is 1200x600mm with tongue and groove edges to be stuck with Knauf Integral Nut- / Feder-Klebstoff (glue for tongue and groove).

The second layer of the F182 system consists of LEP panels in 13 or 18mm thickness with rebate joints is lain to reduce deflection, as an installation area for e.g.

heating pipes or to rise the load bearing capacity or for fire protection reasons.

The second layer is glued holohedral to the first layer and is nailed immediately after been positioned.

The GIFAfloor FHB panels of the first layer are laid floating on the height adjustable and levelled steel supports. The steel supports have been fixed to the load bearing raw ceiling.

The system is suitable for floor heating and cooling systems.

In the cavity all mechanical services could be installed and drywalls could be mounted at any place on the GIFAfloor FHBplus systems while observing the load limits.

Joints have to be planned according their width, positioning and construction.

### Grounding

The ground has to take at least the ultimate loads of the floor system supported by the steel supports.

The ground must be dry and solid and free of separating agents like e.g. bitumen, oil or colours.

Insulation materials and bituminous sheetings usu-

ally are only with a sufficient load-distributing base able to support hollow floor systems.

The raw floor has to be swept and vacuum cleaned thoroughly and to be primed with e.g. z.B. Knauf Estrichgrund F 431.

Control joints of the structure of the building have to be placed at the same position of the GIFAfloor FHBplus.

### Installation

Put edge insulation stripes or foam insulation stripes self-adhesive at the connecting building parts.

Mark the positions of the first row of steel supports. Stick the bases of the steel supports with approx. 15g Knauf Integral Stützenkleber (steel support glue PU) to the ground, then adjust them with a laser or with a spirit level with high accuracy measurement precision.

For all edge areas of the GIFAfloor FHBplus: steel support center distance  $\leq 70$ mm.

Put support sheets or insulation sheets self-adhesive on the steel supports, secure thread against loosen using thread sealer.

All edge areas of the GIFAfloor half steel support distance (grid 300mm o.c.) or stringers heavy! Second row of steel supports for the first panel to be installed like described before. Cut at least both tongues of the first panel, put it onto the prepared steel supports and press against the edge insulation stripes.

Cutting of the GIFAfloor panels with e.g. circular saw with a diamond- tipped saw blade and dust exhaustion system or with e.g. a pendulum jigsaw / assembly band saw with a HM-tipped saw blade. Cut the tongue of the second and the following panels of the first row.

Put Nut- / Feder- Klebstoff (glue for tongue and groove) into the groove of the located panel and onto the tongue of the panel to be laid (see page 9). Put the panels together butt jointed immediately in true alignment.

Second and the following rows of panels to be installed in a staggered position (half of the panel's length).

The second layer consists of GIFAfloor LEP panels is installed 90° turned with staggered joints and is glued holohedral to the first layer with Knauf Integral Flächenklebstoff (glue for the 2nd layer) and nailed immediately after been positioned.

Glue coming out of the butt joint shows that the quantity of the glue is sufficient and could be scraped off e.g. by using a sharp-edged spatula next day.

The edge insulation stripes for the gap behind the last row of GIFAfloor panels have to be insert into the gap at last.

Don't walk on the installed GIFAfloor for c.12 hours.

The floor system is receptive to the full working load after c. 24 hours (standard time of the glue is fully set).

For support heights higher than c. 500mm stringers are recommended, for heights higher than c. 800mm or expected lateral forces (e.g. corridors in front of elevators in hospitals) Knauf Integral ZD diagonal rods are advised.

### Treatment of the surface and floor finishing

Control joints, expansion joints, transition joints and connection joints of the GIFAfloor must be adopted to the floor finishing.

GIFAfloor resists the castors of chairs without supplementary treatment.

For floor heating and cooling systems please note Knauf Integral technical information sheet TI Klima. Prime with Knauf Estrichgrund F431 or with the primer prescribed of the used adhesive system.

Fitted carpet without putty, or if necessary jointing with Knauf Uniflott. Thin elastic floor coverings (e.g. PVC, linoleum) only with full area mastic compound (self levelling) Knauf Nivellierspachtel 415, minimum thickness 2mm, after being dry to be primed.

Ceramic tiles and natural stone to be fixed with flexible tile adhesives. The prescribed installation guides of the manufacturer of the glue system especially the minimum thickness of the glue for the choosen tile size must be observed. Porcelain stoneware to be fixed by buttering and floating method, herefor put the tiles into the glue sideways while pressing it down. The usage of fleece or woven recommended by the manufacturer of the glueing system is possible. If the allowed deflections of GIFAfloor by expected loads are bigger than the possible deflection of the floor covering, additional steps to reduce those deflections have to be planned. For further limitation of these deflections use thicker panels and/or additional supports and/or a second layer of panels.

Protect the GIFAfloor against water e.g. in bathrooms by using a liquid sealant system (e.g. Knauf Flächendicht / Flächendichtband).

Lay parquet flooring as a floating system or thickness of the parquet limited to  $\leq 2/3$  of the thickness of the GIFAfloor panels. The installation guides of the manufacturer of the parquet and of the glueing system for the choosen type of parquet flooring have to be considered.

Fluid floor coverings like e.g. epoxy resin floors have to be elastified and, depending on the manufacturer, water vapour permeable.

Test the bond strength of the floor finish / glueing system (if necessary by usage of a specimen).

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**The structural, statical properties and characteristic building physics of Knauf Integral systems can solely be ensured with the exclusive use of Knauf Integral system components, or other products expressly recommended by Knauf Integral.**

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