

Note on English translation / Hinweise zur englischen Fassung

This is a translation of the product 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 Gips KG denies any liability for applications outside of Germany as this requires changes acc. to the respective national standards and building regulations.



Drywall Systems

K716S.de

Product Data Sheet

2023-12



Diamant SX GKFI

Robust all-rounder for optimum structural features in timber constructions

Product description

Diamant SX is used as reinforcing cladding for structural wood frame wall panels from single-family dwellings to multi-storey timber constructions.

- Board type
DIN 18180
EN 520
- Colour of board liner
- Rear side marking

GKFI
DEFH1R
blue
red

Storage

Store boards on board pallets in a dry environment.

Quality

In compliance with ETA-23/0395 as well as EN 520, the product is subject to initial type testing and continuous factory production control and bears the CE marking.

Properties and added value

- Optimum strengths for bracing of the building
- Enhanced structural ratings certified acc. to ETA-23/0395
- Rating of the board load bearing capacity with two cladding layers possible
- High level impregnation (H1) for reduced water absorption
- Low expansion and shrinkage when climate conditions change
- High dowel load capacity
- Robust surface
- Easy application and jointing
- Very easy to attach with staples
- Non-combustible

Robust all-rounder for optimum structural features in timber constructions

Field of application

Diamant SX GKFI is optimally suited for use in timber construction thanks to its combination of board characteristics and the high level of stability. Can be used as reinforcing cladding in acc. to EN 1995-1-1/NA.

Diamant SX GKFI is suitable for moderately damp rooms, e.g. such as domestic bathrooms. Rooms with moderately high humidity are rooms with a constant relative day-to-day air humidity of $\leq 70\%$

Furthermore, DIN EN 1995-1-1/NA allows the application in structural wood frame wall panels as bracing wall cladding. This applies for interior walls of service class 1 and also for exterior cladding in service class 2 (e.g. as substrate for ETICS).

Technical data

Description	Standard	Unit	Diamant SX GKFI 12.5	Diamant SX GKFI 15	Diamant SX GKFI 18
Board type Germany	DIN 18180	–	GKFI	GKFI	GKFI
Board type European	EN 520	–	DEFH1IR	DEFH1IR	DEFH1IR
Reaction to fire	EN 520	–	A2-s1, d0 (B)	A2-s1, d0 (B)	A2-s1, d0 (B)
Width dimensional tolerance	EN 520	mm	+0 / -4	+0 / -4	+0 / -4
Length dimensional tolerance	EN 520	mm	+0 / -5	+0 / -5	+0 / -5
Thickness dimensional tolerance	EN 520	mm	+0.5 / -0.5	+0.5 / -0.5	+0.7 / -0.7
Angularity dimensional tolerance	EN 520	mm per m board width	≤ 2.5	≤ 2.5	≤ 2.5
Thermal conductivity λ	EN 12664	W/(m·K)	0.37	0.37	0.37
Shrinkage and expansion per 1 % change of relative air humidity	–	mm/m	0.005 – 0.008	0.005 – 0.008	0.005 – 0.008
Shrinkage and expansion per 1 Kelvin change of temperature	–	mm/m	0.013 – 0.02	0.013 – 0.02	0.013 – 0.02
Long term temperature exposure (max. limit)	–	°C	≤ 50	≤ 50	≤ 50
Density	–	kg/m ³	≥ 1100	≥ 1100	≥ 1100
Board weight	–	kg/m ²	approx. 13.8	Approx. 16.5	Approx. 19.8
Water vapour resistance factor μ dry	EN ISO 12572	–	15.8	14	13.7
Water vapour resistance factor μ wet	EN ISO 12572	–	8.4	7.8	8.7
Total water absorption	EN 520	%	≤ 5	≤ 5	≤ 5
Brinell hardness	Following EN 13279-2	N/mm ²	approx. 0.43	approx. 0.43	approx. 0.43
Surface hardness	EN 520	mm \emptyset	≤ 15	≤ 15	≤ 15

Design

Application

Note	Application should be undertaken in accordance to the applicable standards and acc. to the relevant Knauf system data sheets for drywall systems.
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Screw fastening

Note	Use Knauf Diamant screws for fastening the boards to a wood frame structure. Fastening on wood is also possible with staples or nails. Observe the structural design rating.
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Modification factors k_{mod} for imposed load duration and moisture level

Load duration class (KLED) according to EN 1995-1-1	Permanent	Long	Medium	Short	Very short
Service class	Modification factor k_{mod}				
1	0.20	0.40	0.60	0.80	1.10
2	0.15	0.30	0.45	0.60	0.80

Deformation factor k_{def}

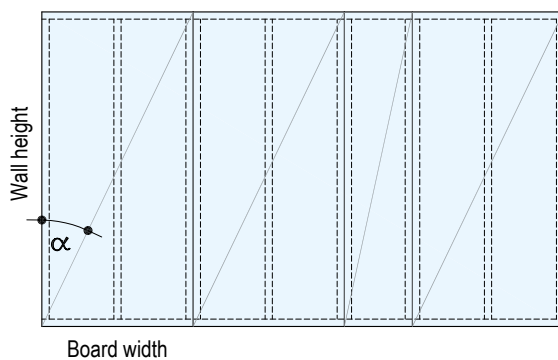
Service class	Deformation factor k_{def}
1	3.0
2	4.0

Calculation values in acc. to ETA-23/0395

Stress	Longitudinal direction (0°)			Transverse direction (90°)			
	12.5 mm	15 mm	18 mm	12.5 mm	15 mm	18 mm	
Strengths in N/mm²							
Bearing stress	In both directions						
Embedding strength $f_{h,k}(d)$	$16 \cdot d^{-0.7} \cdot t^{0.6}$ with d – fastener diameter in mm and for $1.5 \text{ mm} \leq d \leq 5.5 \text{ mm}$ and t – gypsum board nominal thickness in mm						
Plate stress							
Flexural strength $f_{m,k}$		8.2	7.0	5.4	4.1	3.8	3.0
Bending modulus of elasticity $E_{m,mean}$		5700	5800	5000	4800	4900	4200
Tensile strength $f_{c,k}$ Transverse to board level		9.8	9.8	9.8	9.8	9.8	9.8
Shear strength f_v		4.3	4.3	4.3	4.3	4.3	4.3
Shear modulus G_k		2400	2400	2400	2400	2400	2400

Tensile strength values depending on the angle to direction of manufacture

Stress					
Strengths in N/mm ²		12.5 mm	15 mm	18 mm	
Tensile strength $f_{t,k}$	$\alpha < 45^\circ$		$2.7 - 0.0145 \cdot \alpha$	$2.7 - 0.0145 \cdot \alpha$	$2.0 - 0.011 \cdot \alpha$
	$\alpha \geq 45^\circ$		2.0	2.0	1.5


Determination of angle Alpha α

$$\alpha = \arctan\left(\frac{\text{Board width}}{\text{Wall height}}\right)$$

Rules of application of the angle-dependent tensile strength:

Wall heights 2.40 to 3.50 m

Gypsum board width 1.20 to 1.25 m

Order information

Description	Width	Length	Thickness	Edges	Packaging unit	Material number	EAN
Diamant SX GKFI 12.5	1250 mm	2750 mm	12.5 mm	HRAK SSK	40 pieces / pallet 137.5 m ² / pallet	00729642	4003982544162
Diamant SX GKFI 12.5	Custom	Custom	12.5 mm	HRAK SSK	-	00797991	4003982558770
Diamant SX GKFI 15	1250 mm	2750 mm	15 mm	HRAK SSK	34 pieces / pallet 116.875 m ² / pallet	00810227	4003982562777
Diamant SX GKFI 15	Custom	Custom	-	HRAK SSK	-	00797992	4003982558886
Diamant SX GKFI 18	1250 mm	2750 mm	18 mm	HRAK SK	28 pieces / pallet 96.25 m ² / pallet	00810233	4003982562838
Diamant SX GKFI 18	Custom	Custom	-	HRAK SK	-	00810236	4003982562869

Customized lengths dependent on the minimum order quantity possible on request.

HRAK = Half-rounded tapered long edge

SSK = Front cut square edge

SK = Cut square edge

Sustainability and environment

Short description	Unit	Diamant SX GKFI 12.5	Diamant SX GKFI 15	Diamant SX GKFI 18
Requirements of the German AgBB-scheme	-	fulfilled	fulfilled	fulfilled
Complies with the requirements of the French emission class	-	A+	A+	A+
LEED requirements	-	fulfilled	fulfilled	fulfilled
BREEAM requirements	-	Exemplary Level	Exemplary Level	Exemplary Level
Recycling share post-consumer	%	approx. 3	approx. 2.5	approx. 2



Observe the safety data sheet!

For safety data sheets and CE marking see

pd.knauf.de



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[youtube.com/knauf](https://www.youtube.com/knauf)



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