

## Intermediate floor - gdrnxa05a-12

intermediate floor, timber frame construction, suspended, wet, without filling, other surface

### Performance rating

**Fire protection performance** REI 30

maximum span = 5 m; maximum load  $E_{d,fi}$  = 2,62 kN/m<sup>2</sup> (without floor construction and 12mm OSB; with ceiling beam 60/200)

Classified by HFA

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### Germany

F30

Load  $E_{d,fi}$  according to the German certification document

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

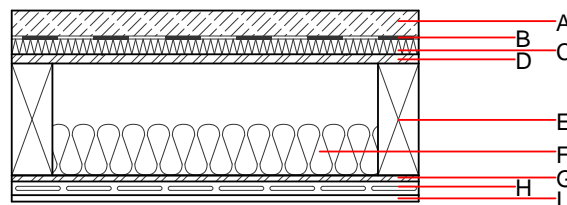
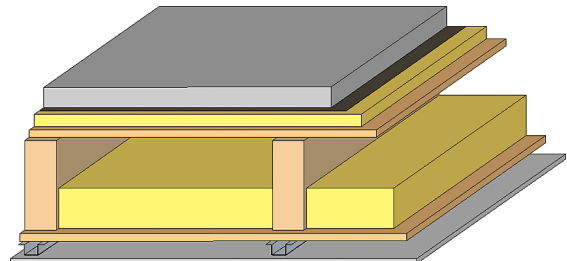
**Thermal performance** U Diffusion suitable

**Acoustic performance**  $R_w$  (C;C<sub>tr</sub>) 60(-2;-8) dB  
 $L_{n,w}$  (C<sub>i</sub>) 60(0)

Assessed by Müller-BBM

**Mass per unit area** m 160.70 kg/m<sup>2</sup>

Calculation based on gypsum plaster board type DF



### Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

	Thickness	Building material	Thermal performance				Reaction to fire EN
			$\lambda$	$\mu$ min – max	$\rho$	c	
A	50.0	anhydrite screed	0.700	10	2200	1.300	A1
B		plastic separation layer	0.200	100000	1400	1.400	E
C	30.0	impact sound absorbing subflooring MW-T	0.036	1	100	1.030	A1
D	18.0	OSB	0.130	200	600	1.700	D
E	240.0	construction timber (80/...; e=625)	0.120	50	450	1.600	D
F	100.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
G	12.0	OSB	0.130	200	600	1.700	D
H	27.0	resilient channel					
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

### Sustainability rating (per m<sup>2</sup>)

#### Database ecoinvent

IO<sub>3</sub><sub>Kon</sub> 37.2

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 38.810  
 Biogenic carbon in kg CO<sub>2</sub>-e. kg CO<sub>2</sub> 57.020  
 Energy use of Primary Energy MJ 671.730  
 Share of renewable PE % 22.94

Calculated by TUM

## Details of sustainability rating

### Database ecoinvent

Lifecycle (Phases)	GWP [kg CO <sub>2</sub> -e.]	AP [kg SO <sub>2</sub> -e.]	EP [kg PO <sub>4</sub> -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.158	0.075	2,63E-6	0.029	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	128.077	588.053	716.129	543.669	25.504	569.173

### Database GaBi (ÖKOBAUDAT)

Lifecycle (Phases)	GWP [kg CO <sub>2</sub> -e.]	AP [kg SO <sub>2</sub> -e.]	EP [kg PO <sub>4</sub> -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.128	0.019	7,50E-7	0.029	
C1 - C4		0.010	0.006	6,98E-8	0.001	
A1 - C4		0.143	0.025	8,28E-7	0.029	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	152.654	650.454	804.356	501.516	27.113	528.777
C1 - C4	1.030	-572.502	-570.334	10.750	-12.800	13.550
A1 - C4	154.064	78.211	235.146	517.668	14.364	555.921