

## Intermediate floor - gdrnxa07a-04

intermediate floor, timber frame construction, suspended, wet, with filling, other surface

### Performance rating

**Fire protection performance** REI 30

maximum span = 5 m; maximum load  $E_{d,fi}$  = 3,66 kN/m<sup>2</sup> (without floor construction; with ceiling beam 80/200); REI60: if 200 mm mineral wool  $\geq 1000^\circ\text{C}$  and insulation protection is built-in (metal strip: b = 100 mm, e  $\leq$  300 mm; d = 0,5-1,0 mm), maximum span = 5 m; maximum load  $E_{d,fi}$  = 3,0 kN/m<sup>2</sup>  
Classified by IBS  
Classified by HFA

#### 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 0.26 W/(m<sup>2</sup>K)  
Diffusion suitable

Calculated by HFA

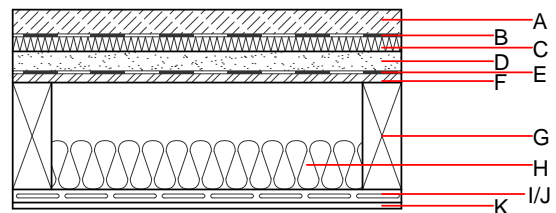
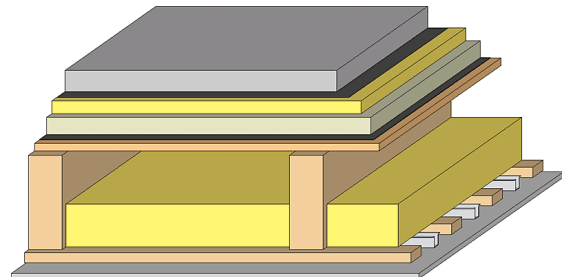
**Acoustic performance**  $R_w$  (C;C<sub>tr</sub>) 70(-1;-5) dB  
 $L_{n,w}$  (C<sub>i</sub>) 41(1)

Assessed by TGM

Assessed by Müller-BBM

**Mass per unit area** m 216.90 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	cement screed or anhydrite screed	1.330	50 - 100	2000	1.080	A1
B		plastic separation layer	0.200	100000	1400	1.400	E
C	30.0	impact sound absorbing subflooring MW-T [s' = 10 MN/m <sup>3</sup> ]	0.035	1	68	1.030	A1
D	40.0	fill loose	0.700	1	1800	1.000	A1
E		trickling protection					E
F	18.0	OSB	0.130	200	600	1.700	D
G	220.0	construction timber (80/...; e=625)	0.120	50	450	1.600	D
H	100.0	mineral wool [038; $\geq 33$ ; $\geq 1000^\circ\text{C}$ ]	0.038	1	33	1.030	A1
I	24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
J	27.0	resilient channel placed between cladding with spacing	0.156				
K	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
K	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

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

### Database ecoinvent

<b>O13<sub>Kon</sub></b>	42.0
Calculated by HFA	

### Database GaBi (ÖKOBAUDAT)

<b>Built-in renewable materials</b>	<b>kg</b>	27.590
<b>Biogenic carbon in kg CO<sub>2</sub>-e.</b>	<b>kg CO<sub>2</sub></b>	41.210
<b>Energy use of Primary Energy</b>	<b>MJ</b>	678.440
<b>Share of renewable PE</b>	<b>%</b>	21.30

## 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		0.176	0.076	2,52E-6	0.043	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	107.456	455.553	563.008	550.596	20.654	571.250

### 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		0.146	0.021	8,86E-7	0.023	
C1 - C4		0.015	0.005	6,46E-8	0.002	
A1 - C4		0.165	0.027	9,59E-7	0.024	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	141.936	483.451	626.814	505.514	54.730	560.380
C1 - C4	2.205	-476.814	-473.469	22.441	-7.731	30.310
A1 - C4	144.526	6.896	154.473	533.918	47.052	604.846