

### Intermediate floor - gdrnxa07a-05

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

#### Performance rating

**Fire protection performance** REI 30

maximum span = 5 m; maximum load  $E_{d,fi} = 3,66 \text{ kN/m}^2$  (without floor construction; with ceiling beam 80/200)  
 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 Diffusion 0.26  $\text{W}/(\text{m}^2\text{K})$  suitable

Calculated by HFA

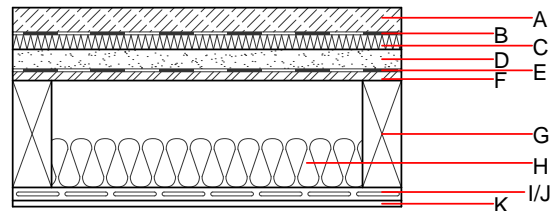
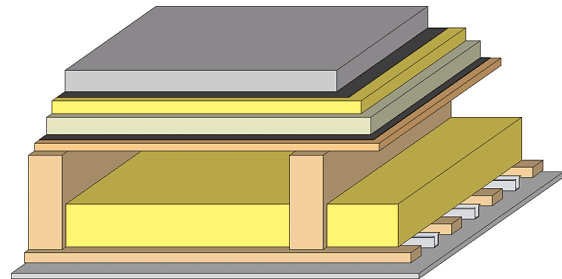
**Acoustic performance**  $R_w (C; C_{tr})$  70(-1;-6) dB  
 $L_{n,w} (C_i)$  41(1)

Assessed by TGM

Assessed by Müller-BBM

**Mass per unit area** m 215.90  $\text{kg}/\text{m}^2$

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 [ $s' = 10 \text{ MN}/\text{m}^3$ ]	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	cellulose fibre [040; E]	0.040	1 - 2	55	2.000	E
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 $\text{m}^2$ )

##### Database ecoinvent

$OI3_{kon}$  35.5

Calculated by HFA

##### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	33.260
Biogenic carbon in $\text{kg CO}_2\text{-e.}$	kg $\text{CO}_2$	48.320
Energy use of Primary Energy	MJ	646.270
Share of renewable PE	%	22.46

## 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		0.148	0.071	2,45E-6	0.027	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	109.193	499.012	608.205	504.925	20.654	525.579

### 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	7,79E-7	0.022	
C1 - C4		0.016	0.007	7,43E-8	0.002	
A1 - C4		0.148	0.027	8,61E-7	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	142.581	554.961	698.988	471.910	50.453	522.499
C1 - C4	2.203	-476.814	-473.472	23.740	-7.731	31.610
A1 - C4	145.165	78.406	226.640	501.110	42.774	567.760