

## Intermediate floor - gdrtn04a-00

intermediate floor, timber frame construction, directly, dry, with filling, Gipsplatte

### Performance rating

**Fire protection performance** REI 30

with planking 19 mm; maximum span = 5 m; maximum load  $E_{d,fi} = 4,5 \text{ kN/m}^2$   
 (without floor construction, with ceiling beam 80/220)  
 Classified by HFA

#### Germany

F30

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

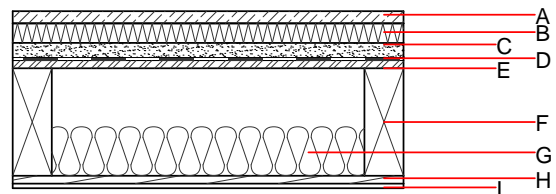
Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

**Thermal performance** U Diffusion suitable

**Acoustic performance**  $R_w (C; C_{tr})$  57(-6;-13) dB  
 $L_{n,w} (C_i)$  65(3)

Assessed by Müller-BBM

**Mass per unit area** m 118.60 kg/m<sup>2</sup>



### 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	25.0	dry screed	0.210	8	900	1.050	A1
B	40.0	impact sound absorbing subflooring [040; $s' < 40 \text{ MN/m}^2$ ]	0.040	1	180	1.030	A1
C	30.0	fill (m' ca. $45 \text{ kg/m}^2$ )	0.700	1	1800	1.000	A1
D	0.2	trickling protection					E
E	16.0	OSB	0.130	200	600	1.700	D
F	220.0	construction timber (80/...; e=625)	0.120	50	450	1.600	D
G	100.0	mineral wool [040; 30; $\geq 1000^\circ\text{C}$ ]	0.040	1	30	1.030	A1
H	16.0	spruce wood tongue and groove planking	0.120	50	450	1.600	D
I	9.5	gypsum plaster board type A	0.250	4 - 10	680	1.050	A2

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

#### Database ecoinvent

**O13<sub>kon</sub>** 28.6  
 Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

**Built-in renewable materials** kg 31.250  
**Biogenic carbon in kg CO<sub>2</sub>-e.** kg CO<sub>2</sub> 46.460  
**Energy use of Primary Energy** MJ 688.570  
**Share of renewable PE** % 23.89  
 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		0.142	0.048	1,93E-6	0.050	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	108.502	530.931	639.434	397.600	16.350	413.950

**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		0.124	0.019	9,81E-7	0.021	
C1 - C4		0.011	0.004	7,22E-8	0.001	
A1 - C4		0.136	0.024	1,06E-6	0.022	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	161.281	546.908	710.116	489.520	45.976	535.633
C1 - C4	2.929	-540.317	-537.389	29.460	-6.888	22.572
A1 - C4	164.530	6.850	173.306	524.045	39.131	563.311