

## Intermediate floor - gdrtn04a-03

intermediate floor, timber frame construction, directly, dry, with filling, other surface

### 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

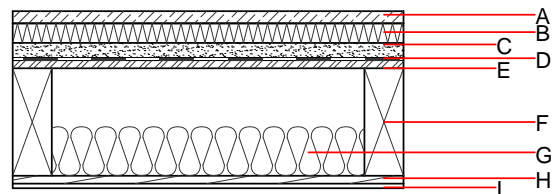
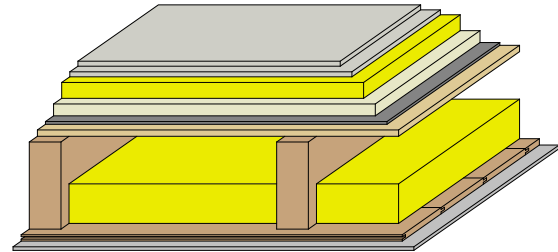
Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

**Thermal performance** U Diffusion suitable

**Acoustic performance**  $R_w (C; C_{tr})$  58(-6;-13) dB  
 $L_{n,w} (C_i)$  64(3)

Assessed by Müller-BBM

**Mass per unit area** m 119.70 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		0.040	1	180	1.030	A1
C	30.0	fill (m <sup>3</sup> ca. 45 kg/m <sup>3</sup> )	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	240.0	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

$OI3_{kon}$  28.6  
 Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

**Built-in renewable materials** kg 32.510  
**Biogenic carbon in kg CO<sub>2</sub>-e.** kg CO<sub>2</sub> 48.310  
**Energy use of Primary Energy** MJ 697.610  
**Share of renewable PE** % 24.27  
 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		0.144	0.048	1,95E-6	0.051	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	112.252	551.895	664.147	401.963	16.350	418.313

**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		0.125	0.020	1,02E-6	0.021	
C1 - C4		0.011	0.004	7,52E-8	0.001	
A1 - C4		0.138	0.024	1,10E-6	0.022	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	166.017	568.694	736.740	493.565	45.990	539.703
C1 - C4	2.941	-562.097	-559.157	29.701	-6.901	22.800
A1 - C4	169.278	6.856	178.162	528.330	39.131	567.609