

## Intermediate floor - gdrtn04a-01

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

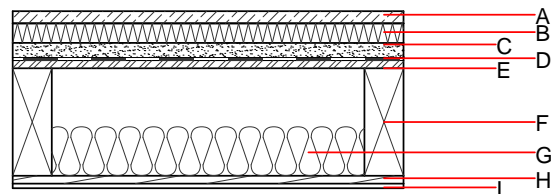
Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

**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 120.30 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; $s' < 40 \text{ MN/m}^3$ ]	0.040	1	180	1.030	A1
C	30.0	fill (m' 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	220.0	construction timber (80/...; e=625)	0.120	50	450	1.600	D
G	100.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
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

$OI3_{Kon}$  24.4

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

**Built-in renewable materials** kg 36.910  
**Biogenic carbon in kg CO<sub>2</sub>-e.** kg CO<sub>2</sub> 53.570  
**Energy use of Primary Energy** MJ 656.400  
**Share of renewable PE** % 25.16

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		0.126	0.045	1,93E-6	0.038	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	110.924	574.390	685.314	370.540	16.350	386.890

### 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		0.106	0.017	8,75E-7	0.020	
C1 - C4		0.012	0.006	8,18E-8	0.001	
A1 - C4		0.119	0.024	9,63E-7	0.021	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	161.926	618.418	782.290	455.916	41.699	497.751
C1 - C4	2.927	-540.317	-537.391	30.759	-6.888	23.871
A1 - C4	165.168	78.360	245.474	491.236	34.853	526.226