

Intermediate floor - gdrtn04a-02

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

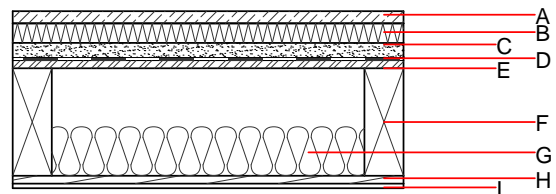
Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

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 119.90 kg/m²



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
			λ	μ min – max	ρ	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 ³)	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	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	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 m²)

Database ecoinvent

$OI3_{Kon}$ 25.4

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 36.040
Biogenic carbon in kg CO₂-e. kg CO₂ 53.330
Energy use of Primary Energy MJ 888.010
Share of renewable PE % 29.31

Calculated by TUM

Details of sustainability rating

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO ₂ -e.]	AP [kg SO ₂ -e.]	EP [kg PO ₄ -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.126	0.046	2,04E-6	0.039	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	114.512	602.437	716.948	399.407	23.104	422.511

Database GaBi (ÖKOBAUDAT)

Lifecycle (Phases)	GWP [kg CO ₂ -e.]	AP [kg SO ₂ -e.]	EP [kg PO ₄ -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.126	0.022	9,23E-7	0.025	
C1 - C4		0.011	0.003	7,23E-8	0.001	
A1 - C4		0.138	0.026	1,00E-6	0.026	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	256.497	766.756	1025.180	588.017	57.122	645.275
C1 - C4	3.440	-760.682	-757.242	35.176	-22.311	12.866
A1 - C4	260.253	6.333	268.513	627.755	34.853	662.744