

Intermediate floor - gdrnxa09a-01

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 kN/m² (without floor construction, with ceiling beam 80/200)
Classified by HFA

Germany

F30

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

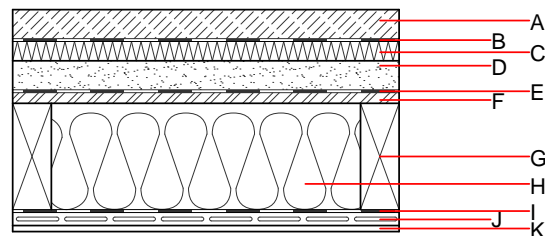
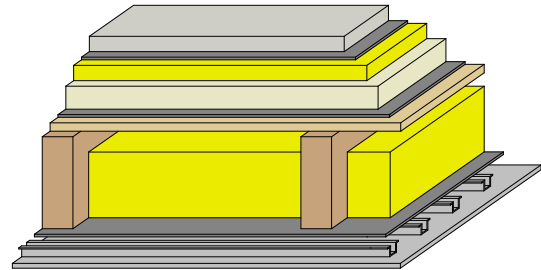
Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

Thermal performance U Diffusion suitable

Acoustic performance R_w (C;C_{tr}) 71(-1;-6) dB
 $L_{n,w}$ (C_i) 36(2)

Assessed by Müller-BBM

Mass per unit area m 264.80 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	60.0	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	40.0	impact sound absorbing subflooring MW [$s' = 7$ MN/m ²]	0.033	1	30	0.030	A1
D	60.0	fill line split $m' = 90$ kg/m ²	0.700	1	1500	1.000	A1
E		trickling protection					E
F	22.0	OSB	0.130	200	600	1.700	D
G	240.0	construction timber (80/...; e=625)	0.120	50	450	1.600	D
H	100.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
I		trickling protection					E
J	27.0	resilient channel	0.156				
K	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

OI3_{Kon} 41.8

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 24.490
Biogenic carbon in kg CO₂-e. kg CO₂ 36.880
Energy use of Primary Energy MJ 721.290
Share of renewable PE % 18.77

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		0.167	0.080	2,83E-6	0.029	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	112.600	466.453	579.053	579.091	27.367	606.458

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		0.150	0.022	7,67E-7	0.024	
C1 - C4		0.022	0.006	5,14E-8	0.002	
A1 - C4		0.177	0.028	8,27E-7	0.026	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	131.348	429.772	562.037	545.465	30.028	575.604
C1 - C4	3.663	-423.099	-418.069	34.443	-9.389	43.774
A1 - C4	135.396	6.932	145.193	585.890	20.691	635.179