

Intermediate floor - gdrnxa07b-11

intermediate floor, timber frame construction, suspended, wet, with filling, other surface

Performance rating

Fire protection performance REI 60

maximum span = 5 m; maximum load $E_{d,fi}$ = 3,66 kN/m² (without floor construction; with ceiling beam 80/200)

Classified by HFA

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Germany

F60

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

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

Thermal performance U Diffusion suitable

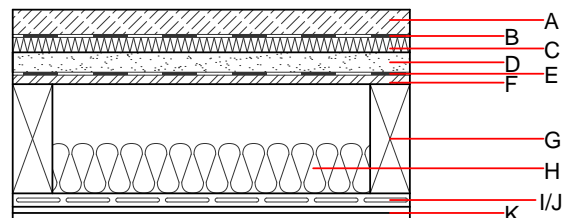
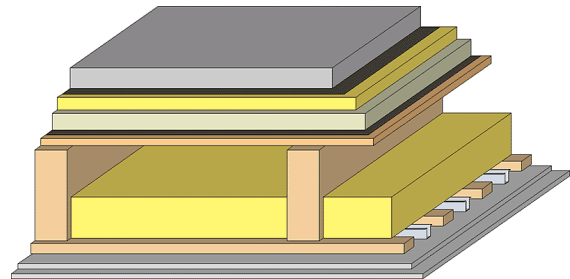
Calculated by HFA

Acoustic performance R_w (C;C_{tr}) 70(-1;-6) dB
 $L_{n,w}$ (C_i) 41(1)

Assessed by Müller-BBM

Mass per unit area m 228.10 kg/m²

Calculation based on gypsum plaster board type DF



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	50.0	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	30.0	impact sound absorbing subflooring MW-T	0.035	1	68	1.030	A1
D	40.0	fill loose	0.700	1	1800	1.000	A1
E		trickling protection					E
F	22.0	OSB	0.130	200	600	1.700	D
G	220.0	construction timber (80/...; e=625)	0.120	50	450	1.600	D
H	100.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
I		spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
J	27.0	resilient channel placed between cladding with spacing	0.156				
K	25.0	gypsum plaster board type DF (2x...) or	0.250	10	800	1.050	A2
K	25.0	gypsum fibre board (2x...)	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

OI3_{Kon} 38.8

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	33.260
Biogenic carbon in kg CO ₂ -e.	kg CO ₂	48.320
Energy use of Primary Energy	MJ	683.560
Share of renewable PE	%	21.95

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		0.159	0.075	2,82E-6	0.029	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	119.089	538.082	657.172	562.852	23.545	586.396

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		0.122	0.019	7,38E-7	0.022	
C1 - C4		0.019	0.007	9,43E-8	0.002	
A1 - C4		0.146	0.027	8,47E-7	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	146.616	559.906	707.968	492.725	49.505	542.366
C1 - C4	2.689	-476.814	-472.985	30.140	-7.731	38.010
A1 - C4	150.065	83.611	236.745	533.497	41.878	599.251