

Intermediate floor - gdrnxa05a-05

intermediate floor, timber frame construction, suspended, wet, without filling, other surface

Performance rating

Fire protection performance REI 30

maximum span = 5 m; maximum load $E_{d,fi}$ = 2,62 kN/m² (without floor construction and 12mm OSB; with ceiling beam 60/200)
 Classified by IBS
 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 0.26 W/(m²K) suitable

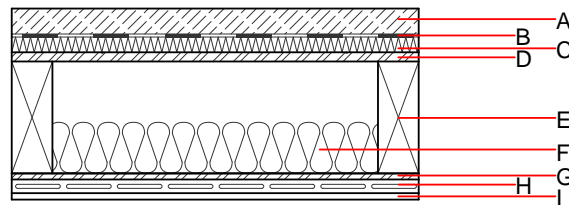
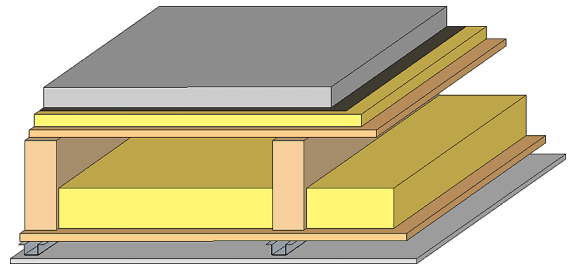
Acoustic performance R_w (C;C_{tr}) 59(-2;-8) dB
 $L_{n,w}$ (C_i) 61(0)

Assessed by TU-GRAZ

Assessed by Müller-BBM

Mass per unit area m 159.00 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	anhydrite screed	0.700	10	2200	1.300	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	18.0	OSB	0.130	200	600	1.700	D
E	220.0	construction timber (80/.,; e=625)	0.120	50	450	1.600	D
F	100.0	cellulose fibre [0,040; R=55]	0.040	1 - 2	55	2.000	B
G	12.0	OSB	0.130	200	600	1.700	D
H	27.0	resilient channel					
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

O13_{kon} 37.1

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 37.550
Biogenic carbon in kg CO₂-e. kg CO₂ 55.180
Energy use of Primary Energy MJ 662.700
Share of renewable PE % 22.53

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		0.157	0.074	2,61E-6	0.028	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	124.327	567.089	691.416	539.306	25.504	564.810

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		0.127	0.019	7,13E-7	0.028	
C1 - C4		0.010	0.006	6,67E-8	0.001	
A1 - C4		0.142	0.025	7,87E-7	0.029	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	147.918	628.668	777.732	497.471	27.100	524.706
C1 - C4	1.018	-550.722	-548.566	10.509	-12.787	13.322
A1 - C4	149.316	78.205	230.290	513.383	14.364	551.623