

Intermediate floor - gdrta03b-04

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

Performance rating

Fire protection performance REI 60

maximum span = 5 m; maximum load $E_{d,fi} = 3,66 \text{ kN/m}^2$
 Classified by HFA

Germany

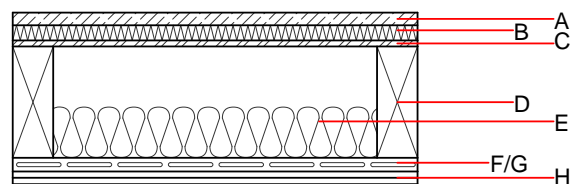
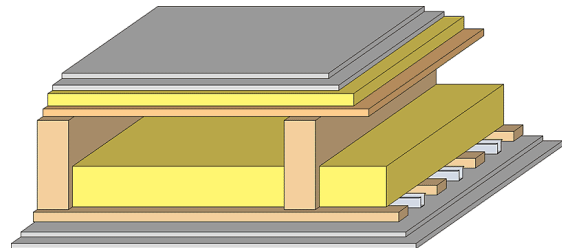
Load $E_{d,fi}$ according to the German certification document

Thermal performance U Diffusion 0.26 $\text{W}/(\text{m}^2\text{K})$ suitable

Acoustic performance R_w (C;C_{tr}) 64(-3;10) dB
 $L_{n,w}$ (C_i) 52(2)

Mass per unit area m 74.50 kg/m^2

Calculation based on gypsum plaster board type DF



Note: e=625;

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	30.0	impact sound absorbing subflooring MW-T	0.035	1	68	1.030	A1
C	18.0	OSB	0.130	200	600	1.700	D
D	220.0	construction timber (80/...; e=625) (80/...; e=*)	0.120	50	450	1.600	D
E	100.0	mineral wool [038; ≥33; ≥1000°C]	0.038	1	33	1.030	A1
F	24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
G	27.0	resilient channel (placed between open formwork)	0.156				
H	25.0	gypsum plaster board type DF (2x12,5 mm) or	0.250	10	800	1.050	A2
H	25.0	gypsum fibre board (2x12,5 mm)	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 37.0

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	27.590
Biogenic carbon in $\text{kg CO}_2\text{-e}$.	kg CO_2	41.210
Energy use of Primary Energy	MJ	679.370
Share of renewable PE	%	21.27

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		0.162	0.055	2,36E-6	0.054	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	91.709	406.419	498.128	483.595	16.832	500.426

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	8,44E-7	0.022	
C1 - C4		0.006	0.003	8,38E-8	0.001	
A1 - C4		0.131	0.023	9,43E-7	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	142.210	488.396	632.033	505.574	19.562	525.272
C1 - C4	1.515	-476.814	-475.299	18.177	-7.731	10.446
A1 - C4	144.488	12.101	158.015	534.886	11.936	546.957