

Intermediate floor - gdrnxa05b-05

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

Performance rating

Fire protection performance REI 60

maximum span = 5 m; maximum load $E_{d,fi} = 3,66 \text{ kN/m}^2$ (without floor construction and 12mm OSB; with ceiling beam 80/200)
 Classified by IBS
 Classified by HFA

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 0.25 $\text{W}/(\text{m}^2\text{K})$ suitable

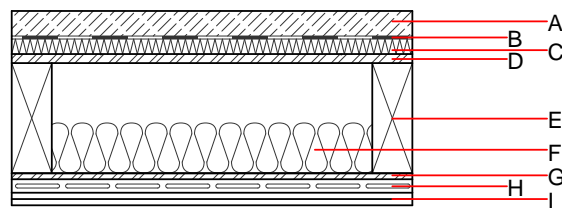
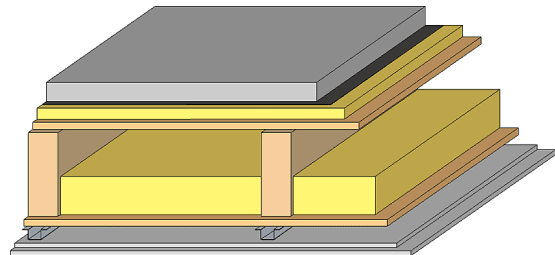
Acoustic performance $R_w (C; C_{tr})$ 59(-2;-8) dB
 $L_{n,w} (C_i)$ 60(0)

Assessed by TGM

Assessed by Müller-BBM

Mass per unit area m 171.60 kg/m^2

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 or cement 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	22.0	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	25.0	gypsum plaster board type DF (2x12,5 mm) or	0.250	10	800	1.050	A2
I	25.0	gypsum fibre board (2x12,5 mm)	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 40.4

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	39.950
Biogenic carbon in $\text{kg CO}_2\text{-e}$.	kg CO_2	58.880
Energy use of Primary Energy	MJ	746.020
Share of renewable PE	%	21.91

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	0.079	2,98E-6	0.030	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	134.224	606.159	740.382	597.232	28.395	625.627

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		0.137	0.020	7,39E-7	0.032	
C1 - C4		0.011	0.006	8,72E-8	0.001	
A1 - C4		0.154	0.028	8,41E-7	0.032	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	161.580	675.327	838.054	558.628	29.727	588.491
C1 - C4	1.149	-592.207	-589.919	13.268	-14.473	14.395
A1 - C4	163.489	83.638	249.896	582.527	15.358	621.761