

Floor towards attic (uninhabitable) - ddrxxa01a-05

floor towards attic (uninhabitable), timber frame construction, suspended, dry, other surface

Performance rating

Fire protection performance REI 30

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

Germany

F30 (from below/from above)

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

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1 in conjunction with 10.7.5 (to attic no floating screed necessary)

Thermal performance U Diffusion 0.19 $\text{W}/(\text{m}^2\text{K})$ suitable

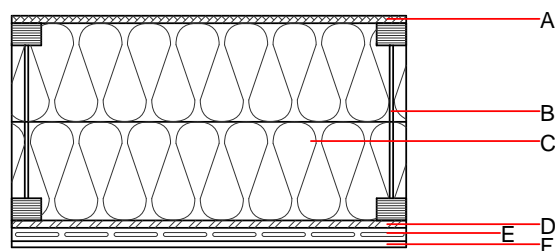
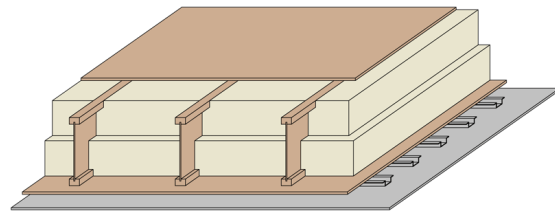
Calculated by TUM

Acoustic performance $R_w (C;C_{tr})$ 43(-3;-11) dB
 $L_{n,w} (C_i)$ 75(0)

Assessed by Müller-BBM

Mass per unit area m 51.60 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	16.0	fibreboard (MDF)	0.140	11	600	1.700	D
B	220.0	construction timber	0.120	50	450	1.600	D
C	220.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
D	15.0	OSB	0.130	200	600	1.700	D
E	27.0	metal rail					
F	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
F	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{Kon}$ 20.1

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	47.150
Biogenic carbon in $\text{kg CO}_2\text{-e}$.	kg CO_2	65.830
Energy use of Primary Energy	MJ	551.050
Share of renewable PE	%	28.85

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		0.106	0.045	1,54E-6	0.017	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	87.622	575.530	663.152	323.283	30.095	353.378

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		0.078	0.014	1,45E-6	0.022	
C1 - C4		0.005	0.007	9,63E-8	0.001	
A1 - C4		0.085	0.022	1,55E-6	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	157.883	741.245	900.617	374.347	23.408	397.891
C1 - C4	0.704	-578.440	-577.737	12.507	-22.466	-9.960
A1 - C4	158.966	163.064	323.518	392.083	0.994	393.212