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Designation: Last updated: Source: Editor: ddrxxa01a-05 8/2/23 Holzforschung Austria HFA, PLB

Floor towards attic (uninhabitable) - ddrxxa01a-05

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

Performance rating

Fire protection	REI	30
performance		

maximum span = 5 m; maximum load $E_{d,fi}$ = 3,5 kN/m² 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 W/(m ² K) suitable
Calculated by TUM		
Acoustic performance	R _w (C;C _{tr}) L _{n,w} (C _l)	43(-3;-11) dB 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 per	Reaction to fire			
			λ	µ min – max	ρ	с	EN
А	16.0	fibreboard (MDF)	0.140	11	600	1.700	D
В	220.0	construction timber	0.120	50	450	1.600	D
С	220.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
D	15.0	OSB	0.130	200	600	1.700	D
Е	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 m²)

Database ecoinvent		Database GaBi (ÖKOBAUDAT)				
OI3 _{Kon}	20.1	Built-in renewable materials	kg	47.150		
Calculated by HEA		Biogenic carbon in kg CO ₂ -e.	kg CO ₂	65.830		
		Energy use of Primary Energy	MJ	551.050		
		Share of renewable PE	%	28.85		

Calculated by TUM

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Details of sustainability rating

Database ecoinvent

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO ₂ -e.]	[kg SO ₂ -e.]	[kg PO ₄ -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.106	0.045	1,54E-6	0.017	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[M]	[MJ]	[M]	[M]	[MJ]	[LM]
A1 - A3	87.622	575.530	663.152	323.283	30.095	353.378

Database GaBi (ÖKOBAUDAT)

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO ₂ -e.]	[kg SO ₂ -e.]	[kg PO ₄ -e.]	[kg R11-e.]	[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	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[LM]	[M]	[M]	[LM]	[MJ]	[LM]
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