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Designation: Last updated: Source: Editor: sdmhzo02-01 8/2/23 Holzforschung Austria HFA, PLB

Pitched roof - sdmhzo02-01

pitched roof, solid wood construction, ventilated, without dry lining, without lining, wooden surface

Performance rating

Fire protection performance	REI	30
maximum span = 5 m; max Classified by HFA	imum load $E_{d,fi} = 5 \text{ kN/m}^2$	(without roof structure)
Germany REI30 Load E _{d,fi} according to the (German certification docume	ent
Corresponding proof: manu	facturer-specific	
Thermal performance	U Diffusion	0.15 W∕(m ² K) suitable
Calculated by TUM		
Acoustic performance	R _w (C;C _{tr}) L _{n,w} (C _l)	46(-1;-7) dB
Assessed by Müller-BBM		
Mass per unit area	m	161.40 kg/m ²



Note: The design of the under-roof construction and of the counterbattens have to be specified according to the roof pitch and the national requirements.

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	
			λ	µ min – max	ρ	с	EN
А		concrete roof tile / tiled roof			2100		A1
В	30.0	spruce wood battens (30/50)	0.120	50	450	1.600	D
С	30.0	spruce wood counter battens (Germany 30mm); Austria: minimum 50mm	0.120	50	450	1.600	D
D	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
Е	200.0	wood-fibre insulation board [0,040; R=200] on-roof insulation	0.040	5 - 7	200	2.100	E
F	0.2	sealing sheet (air tight)					
G	120.0	cross laminated timber	0.130	50	500	1.600	D

Sustainability rating (per m²)

Database ecoinvent

OI3 _{Kon}	92.1	Built-in renewable materials	kg	125.020	
Calculated by HEA		Biogenic carbon in kg CO ₂ -e.	kg CO ₂	178.410	
		Energy use of Primary Energy	LW	1735.150	
		Share of renewable PE	%	32.79	
		Calculated by TUM			

Database GaBi (ÖKOBAUDAT)

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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		0.397	0.192	7,06E-6	0.076	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[M]	[LM]	[M]	[M]	[LM]
A1 - A3	166.888	1592.212	1759.100	1438.941	84.908	1523.850

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		0.175	0.037	4,49E-6	0.040	
C1 - C4		0.007	0.001	1,82E-7	0.001	
A1 - C4		0.184	0.039	4,68E-6	0.040	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[M]	[MJ]	[M]	[LM]	[MJ]	[MJ]
A1 - A3	564.886	1821.332	2384.006	1115.405	66.446	1181.179
C1 - C4	3.336	-1822.583	-1819.247	41.692	-57.374	-15.682
A1 - C4	568.919	-1.251	565.456	1166.231	9.072	1174.631