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Designation: Last updated: Source: Editor: sdrhbi02a-03 8/2/23 Holzforschung Austria HFA, SP

Pitched roof - sdrhbi02a-03

pitched roof, timber frame construction, ventilated, with dry lining, not suspended, other surface

Performance rating

Fire protection	REI	30
maximum span = 5 m; ma roofing, full formwork, cou Classified by HFA	ximum load E _{d,fi} = 3 Inter battens and OS	,66 kN∕m² (rafter 80∕200 without B)
Germany		
F30		
Load E _{d,fi} according to the	German certification	n document
Corresponding proof: DIN	4102-4:2016-05, Ta	abelle 10.19, Zeile 1
Thermal performance	U Diffusion	0.17 W∕(m ² K) suitable
Calculated by TUM		
Acoustic performance	R _w (C;C _{tr}) L _{n,w} (C _I)	48(-1;-7) dB
Assessed by Müller-BBM		
Mass per unit area	m	68.10 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 pe	Reaction to fire			
			λ	µ min – max	ρ	с	EN
А		sheet metal roofing on structured separation layer			7800		A1
В	24.0	spruce wood full formwork	0.120	50	450	1.600	D
С	80.0	spruce wood counter battens (40/80)	0.120	50	450	1.600	D
D		sarking membrane sd \leq 0,3m			1000		E
Е	24.0	planking spruce wood full formwork	0.120	50	450	1.600	D
F	240.0	construction timber (80/*; e=625)	0.120	50	450	1.600	D
G	240.0	mineral wool [040; 30; ≥1000°C]	0.040	1	30	1.030	A1
Н	15.0	OSB airtight	0.130	200	600	1.700	D
Ι	24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
J	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent		Database GaBi (ÖKOBAUDAT)			
OI3 _{Kon}	36.1	Built-in renewable materials	kg	54.070	
Calculated by HFA		Biogenic carbon in kg CO ₂ -e.	kg CO ₂	79.810	
		Energy use of Primary Energy	MJ	872.400	
		Share of renewable PE	%	30.35	
		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		0.194	0.075	2,24E-6	0.064	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[M]	[LM]	[MJ]	[MJ]
A1 - A3	145.526	827.183	972.710	511.109	17.244	528.353

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		0.168	0.024	1,45E-6	0.030	
C1 - C4		0.003	0.002	1,33E-7	0.000	
A1 - C4		0.172	0.027	1,59E-6	0.030	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[LM]	[M]	[LM]	[MJ]	[MJ]
A1 - A3	263.480	942.373	1209.552	586.864	89.387	676.399
C1 - C4	0.942	-936.170	-935.229	14.287	-6.480	7.807
A1 - C4	264.809	6.462	274.970	607.588	82.959	690.695