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Designation: Last updated: Source: Editor: sdrhbi01a-03 8/2/23 Holzforschung Austria HFA, SP

Pitched roof - sdrhbi01a-03

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

Performance rating

Fire protection performance	REI	30
maximum span = 5 m; ma roofing, full formwork and Classified by HFA	ximum load E _{d,fi} = 3 counter battens)	,66 kN/m² (rafter 80/200 without
Germany		
F30		
Load E _{d.fi} according to the	German certification	i document
Corresponding proof: DIN	4102-4:2016-05, Ta	abelle 10.19, Zeile 1
Thermal performance	U Diffusion	0.16 W∕(m ² K) suitable
Calculated by TUM		
Acoustic performance	R _w (C;C _{tr}) L _{n,w} (C _I)	51(-4;-11) dB
Assessed by Müller-BBM		
Mass per unit area	m	53.50 kg⁄m²



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 per	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; 11; <1000°C]	0.040	1	11	1.030	A1
Η		vapour barrier sd≥ 10m			1000		
I	30.0	spruce wood cross battens (a=400)	0.120	50	450	1.600	D
J	30.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
Κ	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} Calculated by HFA	27.3	Built-in renewable materials Biogenic carbon in kg CO ₂ -e. Energy use of Primary Energy	kg kg CO ₂ MJ	43.980 64.300 732.340	
		Share of renewable PE	%	30.99	
		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		0.139	0.066	2,16E-6	0.031	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[M]	[LM]	[MJ]	[M]
A1 - A3	115.274	662.244	777.519	433.744	12.683	446.427

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		0.158	0.022	1,39E-6	0.020	
C1 - C4		0.003	0.003	1,30E-7	0.000	
A1 - C4		0.163	0.026	1,53E-6	0.020	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[LM]	[MJ]	[M]	[LM]	[MJ]	[LM]
A1 - A3	226.011	767.827	997.124	485.450	92.054	577.652
C1 - C4	0.563	-761.454	-760.891	13.337	-0.159	13.178
A1 - C4	226.963	6.632	236.881	505.375	91.947	597.470