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Designation: Last updated: Source: Editor: sdrhbi01a-02 8/2/23 Holzforschung Austria HFA, SP

# Pitched roof - sdrhbi01a-02

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 <sub>d,fi</sub> = 3, counter battens)	66 kN/m² (rafter 80/200 without
Germany		
F30		
Load E <sub>d.fi</sub> according to the	German certification	document
Corresponding proof: DIN	4102-4:2016-05, Ta	belle 10.19, Zeile 1
Thermal performance	U Diffusion	0.19 W∕(m <sup>2</sup> K) suitable
Calculated by TUM		
Acoustic performance	R <sub>w</sub> (C;C <sub>tr</sub> ) L <sub>n,w</sub> (C <sub>l</sub> )	50(-4;-11) dB
Assessed by Müller-BBM		
Mass per unit area	m	57.40 kg∕m <sup>2</sup>



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				
			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	200.0	construction timber ( $80/*$ ; e=625)	0.120	50	450	1.600	D
G	200.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
Н		vapour barrier sd≥ 10m			1000		
T	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 m<sup>2</sup>)

Database ecoinvent		Database GaBi (ÖKOBAUDAT)				
OI3 <sub>Kon</sub>	25.5	Built-in renewable materials	kg	51.040		
Calculated by HFA		Biogenic carbon in kg CO <sub>2</sub> -e.	kg CO <sub>2</sub>	74.360		
		Energy use of Primary Energy	MJ	1091.300		
		Share of renewable PE	%	37.17		
		Calculated by TUM				

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### Details of sustainability rating

#### Database ecoinvent

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO <sub>2</sub> -e.]	[kg SO <sub>2</sub> -e.]	[kg PO <sub>4</sub> -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.133	0.063	2,12E-6	0.031	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[M]	[M]	[MJ]	[LM]
A1 - A3	121.980	777.092	899.072	439.286	26.626	465.912

#### Database GaBi (ÖKOBAUDAT)

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO <sub>2</sub> -e.]	[kg SO <sub>2</sub> -e.]	[kg PO <sub>4</sub> -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.152	0.026	1,14E-6	0.028	
C1 - C4		0.002	0.001	1,24E-7	0.000	
A1 - C4		0.155	0.027	1,28E-6	0.028	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[LM]	[M]	[LM]	[MJ]	[M]
A1 - A3	403.695	1163.744	1570.521	656.364	112.608	769.095
C1 - C4	1.545	-1158.623	-1157.078	23.937	-30.979	-7.042
A1 - C4	405.620	5.380	414.082	685.681	81.682	767.487