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Designation: sdmhbo01-01
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

Pitched roof - sdmhbo01-01

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

Performance rating

Fire protection performance	**REI**	30

maximum span = 5 m; maximum load $E_{d,fi}$ = 5 kN/m² (without roof structure)
Classified by HFA

Germany

REI30

Load $E_{d,fi}$ according to the German certification document

Corresponding proof: manufacturer-specific

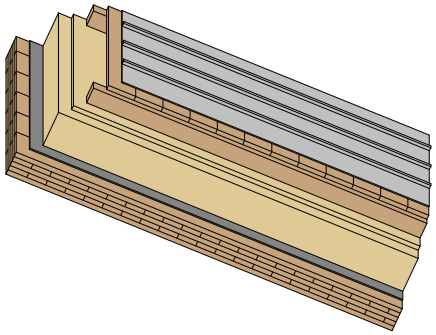
Thermal performance	**U**	0.15 W/(m²K)
	Diffusion	suitable

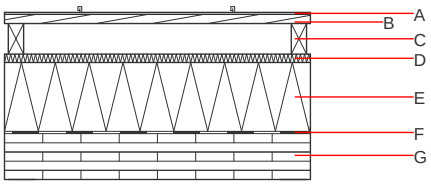
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	47(-1;-6) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	**m**	128.30 kg/m²





Note: The design of the under-roof construction and of the counter-battens 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	c	EN
A		sheet metal roofing on structured separation layer			7800		A1
B	24.0	spruce wood formwork	0.120	50	450	1.600	D
C	80.0	spruce wood counter battens (40/80)	0.120	50	450	1.600	D
D	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
E	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

$OI3_{Kon}$	67.6

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	136.320
Biogenic carbon in kg CO_2-e.	**kg CO_2**	191.420
Energy use of Primary Energy	**MJ**	1745.520
Share of renewable PE	**%**	35.28

Calculated by TUM

Details of sustainability rating

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO_2-e.]	AP [kg SO_2-e.]	EP [kg PO_4-e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.329	0.147	5,62E-6	0.078	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	149.250	1739.880	1889.131	1138.667	91.189	1229.855

Database GaBi (ÖKOBAUDAT)

Lifecycle (Phases)	GWP [kg CO_2-e.]	AP [kg SO_2-e.]	EP [kg PO_4-e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.214	0.041	4,74E-6	0.046	
C1 - C4		0.002	0.000	2,09E-7	0.000	
A1 - C4		0.216	0.042	4,95E-6	0.046	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	613.754	2017.386	2630.149	1098.161	133.526	1231.016
C1 - C4	2.082	-2018.745	-2016.662	31.525	-57.374	-25.849
A1 - C4	615.836	-1.359	613.487	1129.686	76.152	1205.166