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Designation: sdmhbo02-01
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

Pitched roof - sdmhbo02-01

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

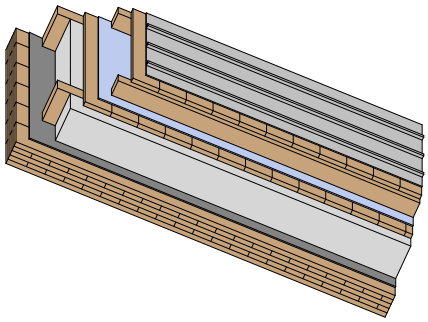
Thermal performance	**U**	0.18 W/(m²K)
	Diffusion	suitable

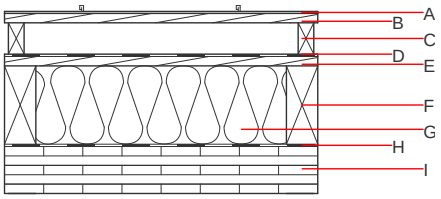
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	42(-1;-6) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	**m**	106.80 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	0.5	sarking membrane sd ≤ 0,3m			1000		E
E	24.0	planking spruce wood full formwork	0.120	50	450	1.600	D
F	200.0	construction timber (80/..; e=800)	0.120	50	450	1.600	D
G	200.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
H	0.2	sealing sheet (air tight)					
I	120.0	cross laminated timber	0.130	50	500	1.600	D

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	39.8

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	109.700
Biogenic carbon in kg CO_2-e.	**kg CO_2**	156.710
Energy use of Primary Energy	**MJ**	1161.000
Share of renewable PE	**%**	37.32

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		0.243	0.106	3,60E-6	0.070	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	137.591	1509.289	1646.880	723.019	33.300	756.319

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		0.163	0.028	3,99E-6	0.030	
C1 - C4		0.005	0.006	2,61E-7	0.001	
A1 - C4		0.169	0.034	4,25E-6	0.031	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	432.290	1825.152	2258.274	704.402	80.905	784.758
C1 - C4	1.023	-1681.292	-1680.269	23.282	-0.133	23.150
A1 - C4	433.313	143.860	578.005	727.684	80.772	807.908