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Designation: sdmhzo03-02
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

Pitched roof - sdmhzo03-02

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

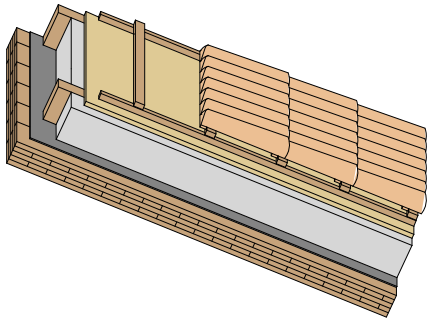
Thermal performance	**U**	0.15 W/(m²K)
	Diffusion	suitable

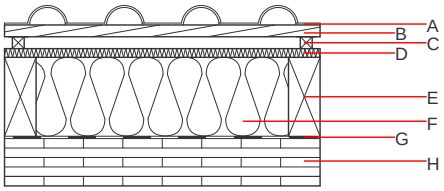
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	47(-1;-7) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	**m**	143.00 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		concrete roof tile /tiled roof			2100		A1
B	30.0	spruce wood battens (30/50)	0.120	50	450	1.600	D
C	30.0	spruce wood counter battens (Germany 30mm); Austria: minimum 50mm	0.120	50	450	1.600	D
D	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
E	240.0	construction timber (80/..; e=800)	0.120	50	450	1.600	D
F	240.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
G		sealing sheet (air tight)					
H	120.0	cross laminated timber	0.130	50	500	1.600	D

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	37.5

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	107.770
Biogenic carbon in kg CO_2-e.	**kg CO_2**	151.690
Energy use of Primary Energy	**MJ**	1314.740
Share of renewable PE	**%**	31.09

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		0.211	0.089	4,00E-6	0.059	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	101.020	1305.985	1407.005	684.587	35.418	720.005

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		0.142	0.029	4,83E-6	0.030	
C1 - C4		0.011	0.008	2,41E-7	0.001	
A1 - C4		0.156	0.038	5,07E-6	0.031	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	405.750	1750.200	2155.014	862.169	31.231	892.876
C1 - C4	2.307	-1578.522	-1576.215	34.682	-22.159	12.523
A1 - C4	408.754	171.679	579.496	905.985	9.072	914.533