

Pitched roof - sdmhzo03-00

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 $E_{d,fi} = 5 \text{ kN/m}^2$ (without roof structure)
 Classified by HFA

Germany

REI30

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

Corresponding proof: manufacturer-specific

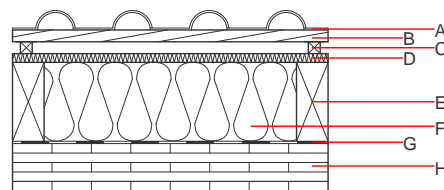
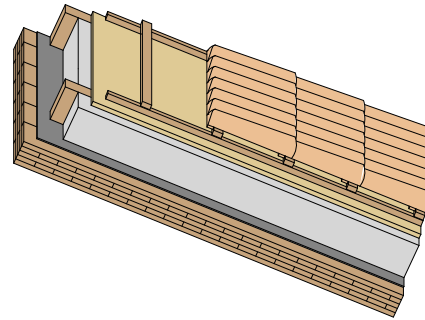
Thermal performance U Diffusion 0.18 $\text{W}/(\text{m}^2\text{K})$ suitable

Calculated by TUM

Acoustic performance $R_w (C; C_{tr})$ 45(-1;-7) dB
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

Mass per unit area m 137.60 kg/m^2



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 EN
			λ	μ min - max	ρ	c	
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	180.0	construction timber (80/...; e=800)	0.120	50	450	1.600	D
F	180.0	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 m^2)

Database ecoinvent

$O13_{kon}$ 36.1

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 100.580
Biogenic carbon in $\text{kg CO}_2\text{-e}$. kg CO_2 141.900
Energy use of Primary Energy MJ 1274.190
Share of renewable PE % 30.54

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		0.200	0.085	3,85E-6	0.057	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	90.852	1229.938	1320.790	659.598	35.418	695.016

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		0.135	0.027	4,71E-6	0.029	
C1 - C4		0.010	0.006	2,26E-7	0.001	
A1 - C4		0.147	0.034	4,93E-6	0.030	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	386.242	1641.627	2026.613	843.212	31.191	873.843
C1 - C4	2.248	-1513.181	-1510.933	32.653	-22.119	10.534
A1 - C4	389.187	128.446	516.377	884.999	9.072	893.510