

Pitched roof - sdmhzi02a-00

pitched roof, solid wood construction, ventilated, with dry lining, not suspended, other surface

Performance rating

Fire protection performance REI 60
 maximum span = 5 m; maximum load $E_{d,fi} = 5 \text{ kN/m}^2$ (without roof structure)
 Classified by HFA

Germany
 REI60
 Load $E_{d,fi}$ according to the German certification document
 Corresponding proof: manufacturer-specific

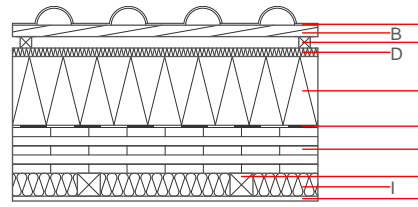
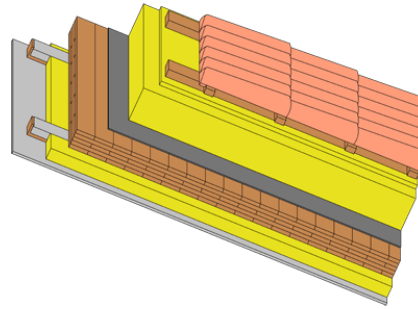
Thermal performance U Diffusion 0.13 $\text{W}/(\text{m}^2\text{K})$ suitable

Calculated by TUM

Acoustic performance $R_w (C; C_{tr})$ 52(-1;-7) dB
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

Mass per unit area m 172.00 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	$\mu \text{ min - max}$	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	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
H 60.0	spruce wood battens (60/60; e=400)	0.120	50	450	1.600	D
I 60.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
J 12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

OI_{kon} 63.0
 Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 124.150
Biogenic carbon in $\text{kg CO}_2\text{-e}$. kg CO_2 177.260
Energy use of Primary Energy MJ 1775.030
Share of renewable PE % 32.04
 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		0.293	0.129	6,04E-6	0.070	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	130.645	1580.339	1710.984	1085.454	85.612	1171.066

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		0.191	0.040	4,62E-6	0.040	
C1 - C4		0.008	0.002	2,12E-7	0.001	
A1 - C4		0.203	0.042	4,84E-6	0.041	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	564.374	1840.567	2402.498	1147.370	66.511	1213.208
C1 - C4	3.330	-1836.350	-1833.019	44.206	-53.836	-9.630
A1 - C4	568.783	4.476	570.816	1206.252	12.726	1218.306