

Pitched roof - sdmhzi03a-02

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

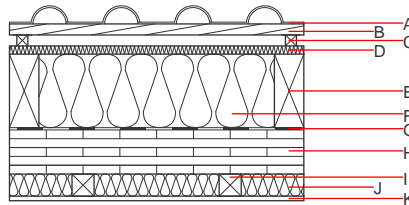
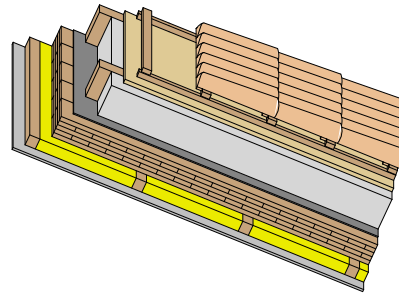
Thermal performance U Diffusion 0.12 $\text{W}/(\text{m}^2\text{K})$ suitable

Calculated by TUM

Acoustic performance $R_w (C; C_{tr})$ 54(-1;-7) dB
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

Mass per unit area m 157.60 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	$\mu \text{ min - max}$	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	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	0.2	sealing sheet (air tight)					
H	120.0	cross laminated timber	0.130	50	500	1.600	D
I	60.0	spruce wood battens (60/60; e=400)	0.120	50	450	1.600	D
J	60.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
K	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{Kon}$ 42.1

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	100.330
Biogenic carbon in $\text{kg CO}_2\text{-e}$.	kg CO_2	141.960
Energy use of Primary Energy	MJ	1412.590
Share of renewable PE	%	30.61

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		0.228	0.097	4,47E-6	0.062	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	111.408	1353.153	1464.562	757.077	35.418	792.495

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		0.164	0.032	4,97E-6	0.032	
C1 - C4		0.012	0.009	2,71E-7	0.001	
A1 - C4		0.180	0.042	5,25E-6	0.034	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	428.955	1819.978	2247.765	927.040	34.834	961.349
C1 - C4	2.398	-1642.831	-1640.433	38.440	-22.159	16.281
A1 - C4	432.432	177.406	608.670	980.156	12.726	992.359