

Pitched roof - sdshzx01-01

pitched roof, exposed rafter, ventilated, -, without lining, wooden surface

Performance rating

Fire protection performance REI 30

maximum span = 5 m; maximum load $E_{d,fi} = 5,29 \text{ kN/m}^2$ (with exposed beams 180/240 and fire protection cladding)
Classified by IBS
Classified by HFA

Germany

F30

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

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.24, Zeile 1

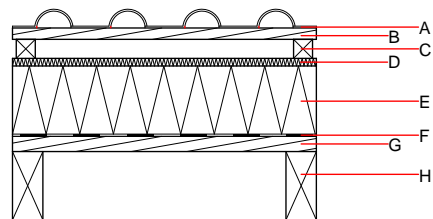
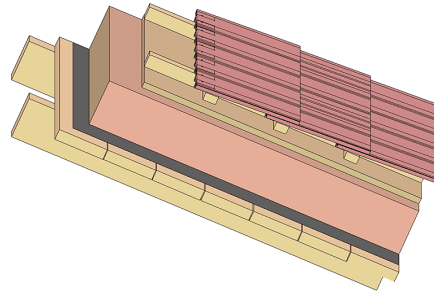
Thermal performance U Diffusion 0.18 W/(m²K) suitable

Calculated by HFA
Calculated by TUM

Acoustic performance R_w (C;C_{tr}) 42(-3;-8) dB
 $L_{n,w}$ (C_i)

with a tiled roof $R_w = 41$ (-2; -8) dB
Assessed by TGM
Assessed by Müller-BBM

Mass per unit area m 125.50 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 EN
			λ	μ min – max	ρ	c	
A		concrete roof tile or tiled roof			2100		A1
B	30.0	spruce wood battens (30/50)	0.120	50	450	1.600	D
C	50.0	spruce wood counter battens (Austria: minimum height 50 mm), Germany 30 mm	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] - insulation placed on top of the rafters	0.040	5 - 7	200	2.100	E
F		vapour barrier sd \geq 1 m			1000		
G	40.0	spruce wood tongue and groove, fire protection cladding (Germany minimum 50 mm)	0.120	50	450	1.600	D
H		construction timber in acc. with structural design	0.120	50	450	1.600	D

Sustainability rating (per m²)

Database ecoinvent

O13_{Kon} 41.4

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	98.970
Biogenic carbon in kg CO ₂ -e.	kg CO ₂	141.740
Energy use of Primary Energy	MJ	1314.320
Share of renewable PE	%	34.33

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		0.189	0.086	3,97E-6	0.039	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	172.408	1196.034	1368.442	725.938	87.288	813.227

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		0.134	0.029	2,21E-6	0.031	
C1 - C4		0.010	0.001	1,29E-7	0.001	
A1 - C4		0.146	0.031	2,34E-6	0.032	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	446.851	1419.783	1866.499	811.625	61.682	873.443
C1 - C4	3.693	-1421.149	-1417.455	42.316	-53.982	-11.666
A1 - C4	451.241	-1.366	449.741	863.076	7.700	870.912