

Pitched roof - sdshzx01-02

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		

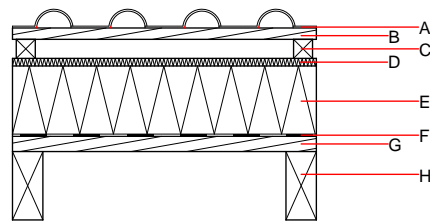
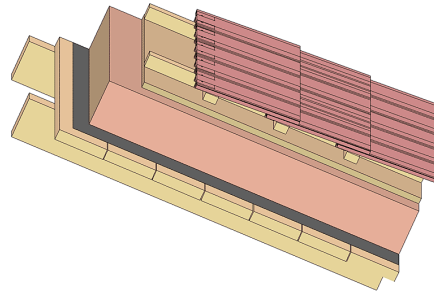
Thermal performance	U Diffusion	0.13 $\text{W}/(\text{m}^2\text{K})$ suitable
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Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$ $L_{n,w} (C_i)$	44(-3;-8) dB
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with a tiled roof $R_w = 43 (-3; -8) \text{ dB}$
 Assessed by TGM

Mass per unit area	m	72.40 kg/m^2
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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 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	260.0	mineral wool [040; 180; $\geq 1000^\circ\text{C}$] - insulation placed on top of the rafters	0.040	1	180	1.030	A1
F		vapour barrier $s_d \geq 1 \text{ m}$				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 m^2)

Database ecoinvent

013_{kon} 1152

Calculated by HFA

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		0.539	0.156	4,53E-6	0.221	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	143.102	664.661	807.763	1129.986	37.094	1167.080