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Designation: sdshzx01-03
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

Pitched roof - sdshzx01-03

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 kN/m² (with exposed beams 180/240 and fire protection cladding)
Classified by IBSm²
Classified by HFA

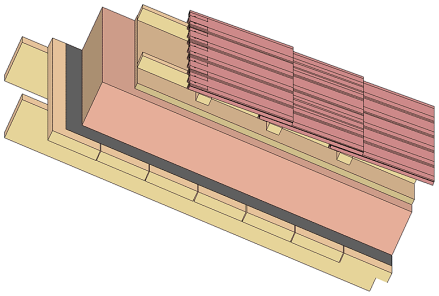
Thermal performance	**U**	0.13 W/(m²K)
	Diffusion	suitable

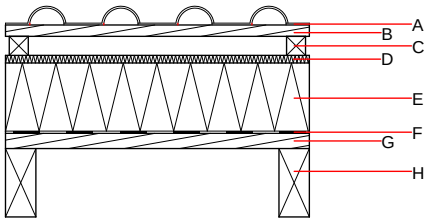
Calculated by HFA

Acoustic performance	**R_w ($C;C_{tr}$)**	44(-2;-8) dB
	$L_{n,w}$ (C_I)	

with a tiled roof Rw = 43 (-2; -8) dB
Assessed by TGM

Mass per unit area	**m**	77.60 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
			λ	μ min – max	ρ	c	EN
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	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≥ 1m			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

$OI3_{Kon}$	53.3

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		0.238	0.108	4,94E-6	0.046	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	199.034	1432.199	1631.234	916.308	109.597	1025.906