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Designation: Last updated: Source: Editor: sdshzx01-04 8/2/23 Holzforschung Austria HFA, SP

Pitched roof - sdshzx01-04

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

Performance rating

Fire protection	REI	30
performance		
maximum span = 5 m	; maximum load E	$E_{d,fi}$ = 5,29 kN/m² (with exposed beam
180/240 and fire pro	tection cladding))
Classified by HFA		
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	0.14 W∕(m ² K) suitable	
Calculated by TUM			
Acoustic performance	R _w (C;C _{tr}) L _{n,w} (C _l)	44(-3;-8) dB	
Assessed by Müller-BBM			
Mass per unit area	m	132.70 kg/m ²	



Note: The design of the under-roof construction and of the counterbattens 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 pe	Reaction to fire			
			λ	µ min – max	ρ	с	EN
А		concrete roof tile or tiled roof			2100		A1
В	30.0	spruce wood battens (30/50)	0.120	50	450	1.600	D
С	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	240.0	mineral wool [040; 180; ${\simeq}1000^{\circ}C]$ - insulation placed on top of the rafters	0.040	1	180	1.030	A1
F		vapour barrier sd≥ 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
Н		construction timber in acc. with structural design	0.120	50	450	1.600	D

Sustainability rating (per m²)

Database ecoinvent

Calculated by HFA

OI3_{Kon}

Database GaBi (ÖKOBAUDAT)

107.4	Built-in renewable materials	kg	57.570
	Biogenic carbon in kg CO ₂ -e.	kg CO ₂	82.450
	Energy use of Primary Energy	MJ	1267.050
	Share of renewable PE	%	22.44
	Calculated by TUM		

dataholz.eu – Catalogue of timber building materials, components and component connections reviewed to consider thermal, acoustic, fire performance requirements and ecological drivers for timber construction released by accredited testing institutes.

These datasheets will generally be accepted as proofs of compliance by building authorities.

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Details of sustainability rating

Database ecoinvent

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO ₂ -e.]	[kg SO ₂ -e.]	[kg PO ₄ -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.504	0.147	4,32E-6	0.206	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[M]	[M]	[MJ]	[MJ]
A1 - A3	140.748	664.661	805.409	1065.956	37.094	1103.051

Database GaBi (ÖKOBAUDAT)

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO ₂ -e.]	[kg SO ₂ -e.]	[kg PO ₄ -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.331	0.050	3,29E-6	0.032	
C1 - C4		0.013	0.011	1,37E-7	0.002	
A1 - C4		0.346	0.062	3,43E-6	0.034	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[LM]	[M]	[MJ]	[MJ]	[MJ]	[LM]
A1 - A3	280.625	970.390	1250.881	934.186	75.208	1009.533
C1 - C4	2.985	-966.267	-963.282	38.025	-22.146	15.879
A1 - C4	284.317	4.123	288.306	982.730	53.062	1035.931