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Pitched roof - sdrhbi01a-01
pitched roof, timber frame construction, ventilated, with dry lining, not suspended, other surface

Performance rating

Fire protection performance | **REI** | 30

maximum span = 5 m; maximum load $E_{d,fi}$ = 3,66 kN/m² (rafter 80/200 without roofing, full formwork and counter battens)
Classified by HFA

Germany

F30

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

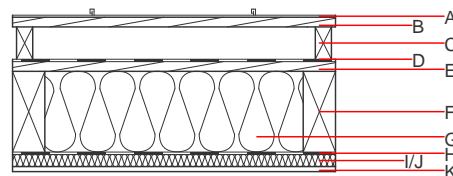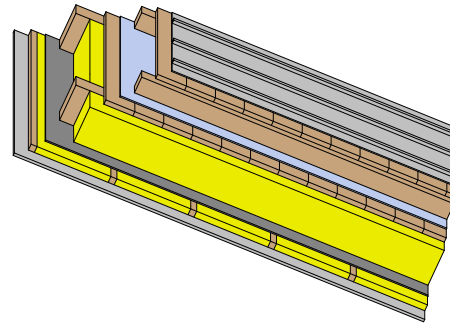Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.19, Zeile 1

| Thermal performance | U | 0.19 W/(m²K) |
| | Diffusion | suitable |

Calculated by TUM

| Acoustic performance | R_w (C;C$_{tr}$) | 50(-4;-11) dB |
| | $L_{n,w}$ (C$_I$) | |

Assessed by Müller-BBM

| Mass per unit area | m | 58.30 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		sheet metal roofing on structured separation layer			7800		A1
B	24.0	spruce wood full formwork	0.120	50	450	1.600	D
C	80.0	spruce wood counter battens (40/80)	0.120	50	450	1.600	D
D		sarking membrane sd ≤ 0,3m			1000		E
E	24.0	planking spruce wood full formwork	0.120	50	450	1.600	D
F	200.0	construction timber (80/*; e=625)	0.120	50	450	1.600	D
G	200.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
H		vapour barrier sd≥ 10m			1000		
I	30.0	spruce wood cross battens (a=400)	0.120	50	450	1.600	D
J	30.0	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 m²)

Database ecoinvent

| OI3$_{Kon}$ | 23.9 |

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	52.790
Biogenic carbon in kg CO₂-e.	kg CO₂	74.820
Energy use of Primary Energy	MJ	628.090
Share of renewable PE	%	34.30

Calculated by TUM

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Designation: sdrhbi01a-01
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

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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		0.135	0.062	1,93E-6	0.029	

Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]
A1 - A3	115.729	730.411	846.140	387.124	12.683	399.808

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		0.110	0.016	1,05E-6	0.017	
C1 - C4		0.005	0.007	1,43E-7	0.001	
A1 - C4		0.117	0.023	1,20E-6	0.018	

Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]
A1 - A3	214.552	867.069	1084.740	392.162	81.762	474.048
C1 - C4	0.518	-717.893	-717.375	15.102	-0.133	14.970
A1 - C4	215.450	149.435	368.004	412.645	81.682	494.450

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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