Pitched roof - sdrhbi02a-05

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, counter battens and OSB)
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	0.17 W/(m²K)
	Diffusion	suitable

Calculated by TUM

Acoustic performance	R_w (C;C_{tr})	48(-1;-7) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	m	71.30 kg/m²
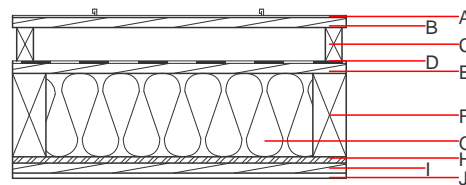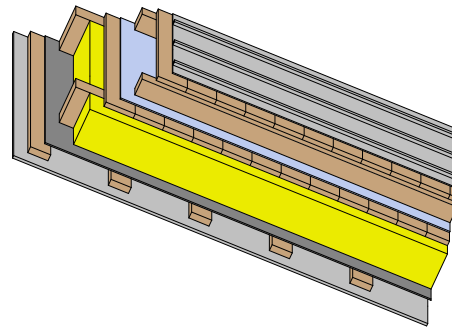
Note: The design of the under-roof construction and of the counter-battens have to be specified according to the roof pitch and the national requirements.

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	240.0	construction timber (80/*; e=625)	0.120	50	450	1.600	D
G	240.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
H	15.0	OSB airtight	0.130	200	600	1.700	D
I	24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
J	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

OI3$_{Kon}$	28.3

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	65.580
Biogenic carbon in kg CO_2-e.	kg CO_2	96.300
Energy use of Primary Energy	MJ	1351.040
Share of renewable PE	%	36.60

Calculated by TUM

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dataholz.eu

Designation: sdrhbi02a-05
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

Page 1

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		0.154	0.072	2,52E-6	0.036	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	160.411	1004.308	1164.719	515.584	33.975	549.559

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		0.174	0.031	1,31E-6	0.040	
C1 - C4		0.002	0.000	1,33E-7	0.000	
A1 - C4		0.178	0.032	1,45E-6	0.041	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	491.998	1470.008	1965.705	823.256	116.137	939.541
C1 - C4	2.168	-1465.046	-1462.877	28.007	-43.495	-15.488
A1 - C4	494.546	5.221	503.466	856.492	72.694	929.334

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.

Page 2