

Pitched roof - sdmhbi01a-00

pitched roof, solid wood construction, ventilated, with dry lining, not suspended, other surface

Performance rating

Fire protection performance REI 60

maximum span = 5 m; maximum load $E_{d,fi} = 5 \text{ kN/m}^2$ (without roof structure)
 Classified by HFA

Germany

REI60

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

Corresponding proof: manufacturer-specific

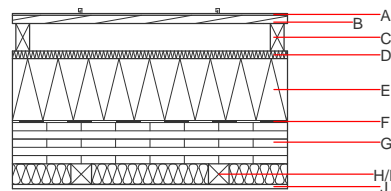
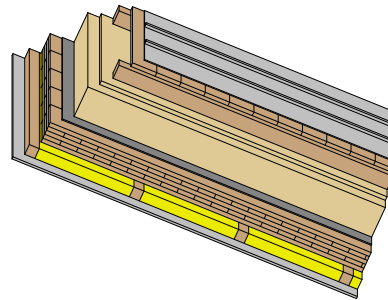
Thermal performance U Diffusion 0.13 $\text{W}/(\text{m}^2\text{K})$ suitable

Calculated by TUM

Acoustic performance R_w (C;C_{tr}) 53(-1;-6) dB
 $L_{n,w}$ (C_i)

Assessed by Müller-BBM

Mass per unit area m 138.90 kg/m^2



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	μ min - max	ρ	c	
A	sheet metal roofing on structured separation layer			7800		A1
B 24.0	spruce wood 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 22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
E 180.0	wood-fibre insulation board [0,040; R=200] on-roof insulation	0.040	5 - 7	200	2.100	E
F 0.2	sealing sheet (air tight)					
G 120.0	cross laminated timber	0.130	50	500	1.600	D
H 60.0	spruce wood (battens 60/60; e=400)	0.120	50	450	1.600	D
I 60.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
J 12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 68.9

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	135.440
Biogenic carbon in $\text{kg CO}_2\text{-e}$.	kg CO_2	190.630
Energy use of Primary Energy	MJ	1785.110
Share of renewable PE	%	34.49

Calculated by TUM

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		0.335	0.149	5,86E-6	0.080	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	156.902	1754.540	1911.441	1165.806	85.612	1251.418

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		0.229	0.044	4,87E-6	0.046	
C1 - C4		0.003	0.001	2,39E-7	0.000	
A1 - C4		0.234	0.045	5,12E-6	0.047	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	613.242	2036.620	2648.641	1130.126	133.591	1263.045
C1 - C4	2.047	-2032.512	-2030.464	33.770	-53.836	-20.066
A1 - C4	615.670	4.368	618.817	1169.438	79.806	1248.573