

Pitched roof - sdmhbi02a-01

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

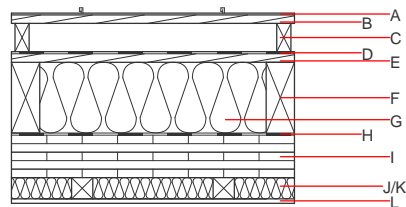
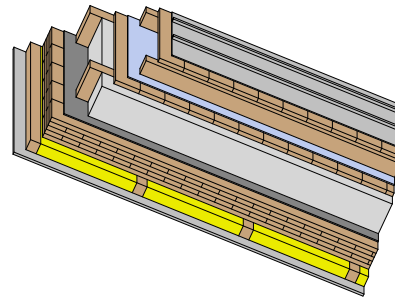
Thermal performance U Diffusion 0.14 $\text{W}/(\text{m}^2\text{K})$ suitable

Calculated by TUM

Acoustic performance $R_w (C; C_{tr})$ 49(-1;-6) dB
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

Mass per unit area m 120.90 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	$\mu \text{ min} - \text{max}$	ρ	c	
A		sheet metal roofing 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		sarking membrane $s_d \leq 0,3\text{m}$				1000	E
E	24.0	planking spruce wood full formwork	0.120	50	450	1.600	D
F	200.0	construction timber (80/.; e=800)	0.120	50	450	1.600	D
G	200.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
H	0.2	sealing sheet (air tight)					
I	120.0	cross laminated timber	0.130	50	500	1.600	D
J	60.0	spruce wood (battens 60/60; e=400)	0.120	50	450	1.600	D
K	60.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
L	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

OI3_{kon} 43.1

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	113.420
Biogenic carbon in $\text{kg CO}_2\text{-e}$.	kg CO_2	162.150
Energy use of Primary Energy	MJ	1258.850
Share of renewable PE	%	36.30

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		0.267	0.117	4,17E-6	0.077	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	175.530	1736.802	1912.332	815.053	33.300	848.353

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		0.185	0.031	4,13E-6	0.032	
C1 - C4		0.006	0.007	2,91E-7	0.001	
A1 - C4		0.193	0.039	4,43E-6	0.033	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	455.494	1894.929	2351.025	769.272	84.507	853.231
C1 - C4	1.114	-1745.602	-1744.487	27.041	-0.133	26.908
A1 - C4	456.990	149.587	607.178	801.855	84.426	885.733