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Designation: Last updated: Source: Editor:

sdmhbi01a-05 8/2/23 Holzforschung Austria HFA, PLB

Pitched roof - sdmhbi01a-05

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

Performance rating

Fire protection performance	REI	60					
maximum span = 5 m; max Classified by HFA	imum load E _{d,fi} = 5 kN∕m²	(without roof structure)					
Germany REI60 Load E _{d,fi} according to the German certification document Corresponding proof: manufacturer-specific							
Thermal performance	U Diffusion	0.12 W/(m ² K) suitable					
Calculated by TUM							
Acoustic performance	R _w (C;C _{tr}) L _{n,w} (C _I)	48(-1;-6) dB					
Assessed by Müller-BBM							
Mass per unit area	m	134.10 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.

Underlay laminated on insulation board

Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

	Thickness	Building material	Thermal per	Reaction to fire			
			λ	µ min – max	ρ	с	EN
А		sheet metal roofing on structured separation layer			7800		A1
В	24.0	spruce wood formwork	0.120	50	450	1.600	D
С	80.0	spruce wood counter battens (40/80)	0.120	50	450	1.600	D
D		sarking membrane sd \leq 0,3m			1000		E
Е	240.0	mineral wool [040; 130] on-roof insulation	0.040	1	130	1.030	
F	0.2	sealing sheet (air tight)					
G	120.0	cross laminated timber	0.130	50	500	1.600	D
Н	60.0	spruce wood (battens 60/60; e=400)	0.120	50	450	1.600	D
T	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 m²)

Database ecoinvent		Database GaBi (ÖKOBAUDAT)			
OI3 _{Kon}	114.0	Built-in renewable materials	kg	77.820	
Calculated by HFA		Biogenic carbon in kg CO ₂ -e.	kg CO ₂ MJ	112.470 1515.830	
		Energy use of Primary Energy			
		Share of renewable PE	%	25.45	
		Calculated by TUM			

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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		0.552	0.184	5,43E-6	0.207	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[M]	[LM]	[LM]	[M]	[MJ]
A1 - A3	111.014	1132.965	1243.979	1300.454	33.300	1333.754

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		0.403	0.059	4,68E-6	0.039	
C1 - C4		0.006	0.011	2,21E-7	0.001	
A1 - C4		0.411	0.070	4,91E-6	0.041	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[LM]	[M]	[LM]	[LM]	[MJ]	[M]
A1 - A3	384.173	1336.428	1718.940	1095.761	129.737	1224.828
C1 - C4	1.235	-1325.609	-1324.374	27.344	0.000	27.344
A1 - C4	385.800	11.078	395.216	1130.032	129.789	1259.151