

Flat roof - fdmnko01-01

flat roof, solid wood construction, not ventilated, without dry lining, without lining, wooden surface

Performance rating

Fire protection performance REI 30

maximum span = 5 m; maximum load $E_{d,fi}$ = 5 kN/m²; also REI 60 without 12,5 mm gypsum plasterboards with improved properties at high temperatures (fire) or gypsum fibre board
Classified by HFA

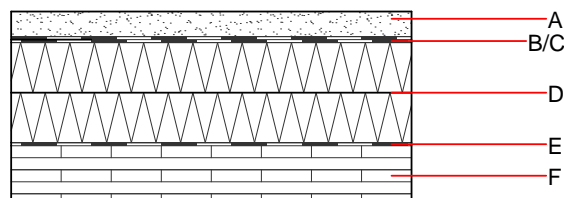
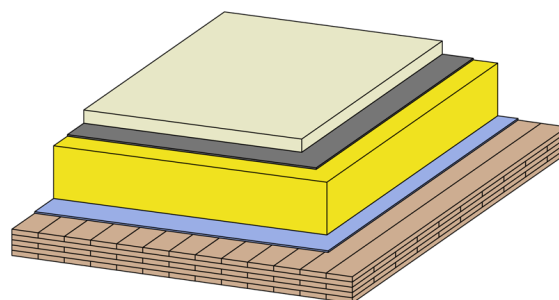
Germany

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

Thermal performance U Diffusion 0.21 W/(m²K) suitable

Acoustic performance R_w (C;C_{tr}) 50(-2;-7) dB
 $L_{n,w}$ (C_i)

Mass per unit area m 184.50 kg/m²



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	50.0	gravel gravel	0.700	1	1800	1.000	A1
B		separation nonwoven [sd & le; 0,2m]					
C		sealing sheet sd ≥ 100m					
D	200.0	wood-fibre insulation board [0,045; R=160] (2*100)	0.045	5 - 7	160	2.100	E
E		sealing sheet e.g. bitumen					
F	125.0	cross laminated timber ≥ 125,0; at least 5-layers, top layer at least 27,5 mm)	0.130	50	500	1.600	D

Sustainability rating (per m²)

Database ecoinvent

Ol3_{kon} 70.5
calculated with gypsum plaster fire protection board (GKF/DF); this data includes 3-, 5-, and 7-ply cross laminated timber elements;
Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	107.180
Biogenic carbon in kg CO ₂ -e.	kg CO ₂	153.940
Energy use of Primary Energy	MJ	1468.240
Share of renewable PE	%	33.98

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		0.301	0.126	7,28E-6	0.072	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	104.902	1445.414	1550.316	1069.502	256.373	1325.875

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		0.162	0.032	3,29E-6	0.032	
C1 - C4		0.014	0.002	1,51E-7	0.001	
A1 - C4		0.176	0.034	3,45E-6	0.033	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	494.006	1541.674	2033.180	914.186	164.944	1078.430
C1 - C4	4.965	-1541.674	-1536.708	55.087	-35.374	19.713
A1 - C4	498.971	-0.000	496.471	969.273	129.570	1098.143