

Flat roof - fdmko01-00

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 $E_{d,fi} = 5 \text{ kN/m}^2$; also REI 60 without 12,5 mm gypsum plasterboards with improved properties at high temperatures (fire) or gypsum fibre board
 Classified by HFA

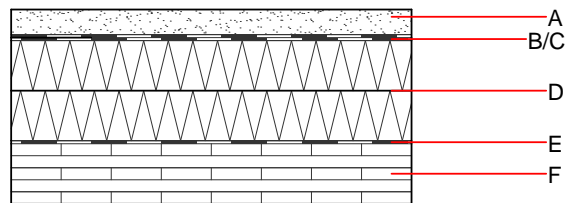
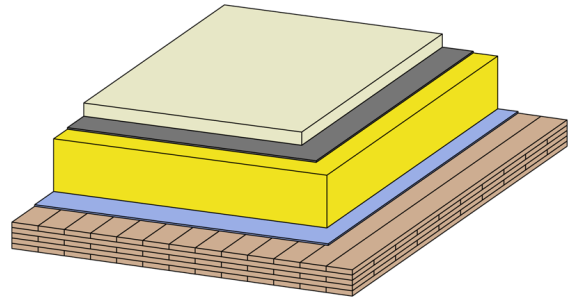
Germany

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

Thermal performance U Diffusion 0.21 $\text{W}/(\text{m}^2\text{K})$ suitable

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

Mass per unit area m 178.50 kg/m^2



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 \geq 100m					
D	200.0	mineral wool [040; 130; \geq 1000°C] (2*100)	0.040	1	130	1.030	A1
E		sealing sheet e.g. bitumen					
F	125.0	cross laminated timber \geq 125,0; at least 5-layers, top layer at least 27,5 mm)	0.130	50	500	1.600	D

Sustainability rating (per m^2)

Database ecoinvent

O13_{kon} 102.6
 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	61.180
Biogenic carbon in kg CO₂-e.	kg CO ₂	88.060
Energy use of Primary Energy	MJ	1283.200
Share of renewable PE	%	23.40

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		0.462	0.144	6,54E-6	0.176	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	57.169	855.000	912.169	1105.811	200.602	1306.412

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		0.311	0.046	4,15E-6	0.029	
C1 - C4		0.017	0.010	1,57E-7	0.002	
A1 - C4		0.328	0.056	4,31E-6	0.032	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	296.192	1040.824	1334.516	934.054	167.372	1100.728
C1 - C4	4.059	-1036.250	-1032.191	47.729	0.000	47.729
A1 - C4	300.260	4.574	302.334	982.938	167.372	1149.612