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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
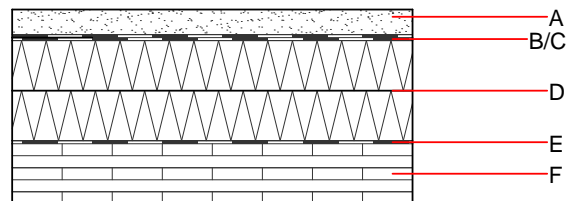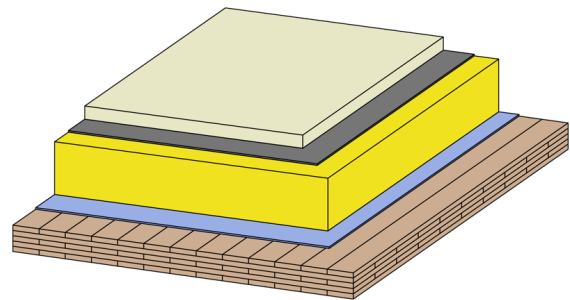Classified by HFA

Germany

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

Thermal performance	U	0.21 W/(m²K)
	Diffusion	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
			λ	μ min − max	ρ	c	EN
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

$OI3_{Kon}$	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

Page 1

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

dataholz.eu – Catalogue of timber building materials, components and component connections reviewed to consider thermal, acoustic, fire performance requirements and ecological drivers for timber construction released by accredited testing institutes.
These datasheets will generally be accepted as proofs of compliance by building authorities.

Page 2