Flat roof - fdmobi01a-02

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

Performance rating

Fire protection performance	**REI**	60

maximum span = 5 m; maximum load $E_{d,fi}$ = 0,6 kN/m²
Classified by HFA

Thermal performance	**U**	0.10 W/(m²K)
	Diffusion	suitable

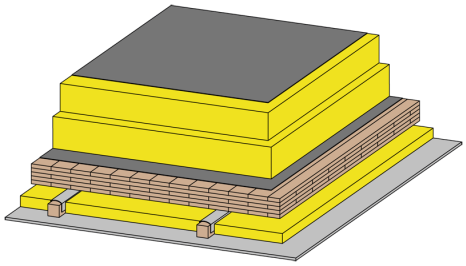
Calculated by HFA

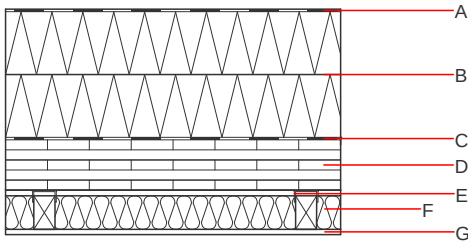
Acoustic performance	**R_w ($C_;C_{tr}$)**	52 dB
	$L_{n,w}$ (C_I)	

Assessed by HFA

Mass per unit area	**m**	127.10 kg/m²

Calculation based on gypsum plaster board type DF





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		Plastic roofing membrane					E
B	300.0	wood-fibre insulation board [0,045; R=160] ; pressure-resistant	0.045	5 - 7	160	2.100	E
C		sealing sheet					
D	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
E	80.0	spruce wood ; battens on resilient clips (50/80; e=625)	0.120	50	450	1.600	D
F	80.0	mineral wool [040; 18]	0.040	1	18	1.030	A1
G	12.5	gypsum plaster board type DF / gypsum fibre board	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	91.6

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

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		0.387	0.166	9,09E-6	0.084	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	150.634	1793.031	1943.665	1403.966	281.710	1685.676