

Flat roof - fdmobi01a-01

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 $E_{d,fi} = 0,6 \text{ kN/m}^2$
 Classified by HFA

Thermal performance U Diffusion 0.09 $\text{W}/(\text{m}^2\text{K})$
 suitable

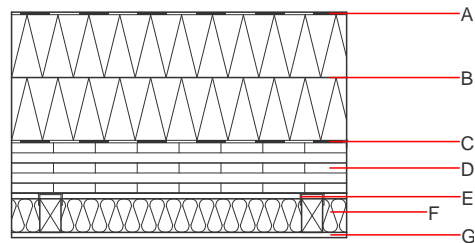
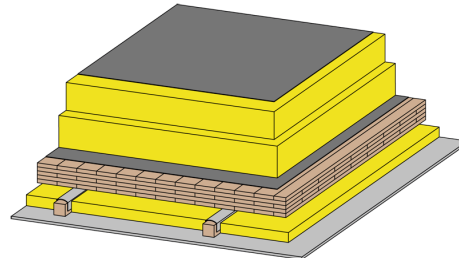
Calculated by HFA

Acoustic performance $R_w (C; C_{tr})$ 48 dB
 $L_{n,w} (C_i)$

Assessed by HFA

Mass per unit area m 117.60 kg/m^2

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 EN
			λ	μ min – max	ρ	c	
A		Plastic roofing membrane					E
B	300.0	mineral wool [040; 130; $\geq 1000^\circ\text{C}$]; pressure-resistant	0.040	1	130	1.030	A1
C		sealing sheet					
D	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
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	19.0	3-ply solid wood panel	0.110	50	400	2.500	D

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{Kon}$ 164.4

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	8.132	0.780	0.213	8,31E-6	0.178

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	78.598	1061.476	1140.074	1568.688	203.521	1772.209