

Flat roof - fdmnti01 a-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 $E_{d,fi} = 5 \text{ kN/m}^2$
 Classified by HFA

Thermal performance U 0.11 $\text{W}/(\text{m}^2\text{K})$
Diffusion suitable

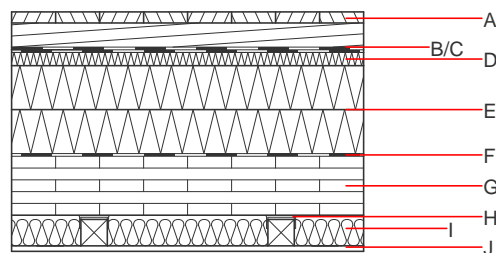
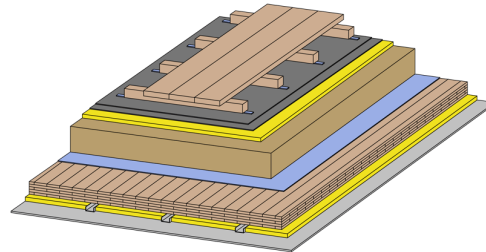
Calculated by HFA

Acoustic performance $R_w (C;C_{tr})$ 57(-4;11) dB
 $L_{n,w} (C_i)$ 53(3)

Assessed by TU-GRAZ

Mass per unit area m 136.40 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	80.0	wooden grating/wooden terrace	0.130	50	500	1.600	D
B		sealing sheet $sd \geq 100\text{m}$					
C		separation nonwoven					
D	30.0	impact sound absorbing subflooring MW-T	0.036	1	130	1.030	A1
E	200.0	Polystyrene EPS-W [R=15] (2*100)	0.040	20 - 50	15	1.450	E
F		sealing sheet bitumen					
G	140.0	cross laminated timber $\geq 140,0$; at least 5-layers, top layer at least 26 mm	0.130	50	500	1.600	D
H	70.0	acoustic hanger (suspension); $e=415$;					
I	60.0	mineral wool [040; 13]	0.040	1	13	1.030	A2
J	12.5	gypsum fibre board or	0.320	21	1000	1.100	A2
J	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

O13_{kon} 86.0

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		0.354	0.128	6,94E-6	0.123	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	111.589	1270.587	1382.177	1140.259	332.811	1473.070