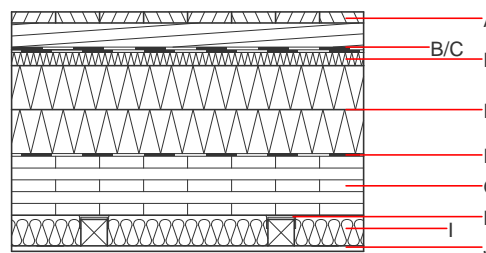
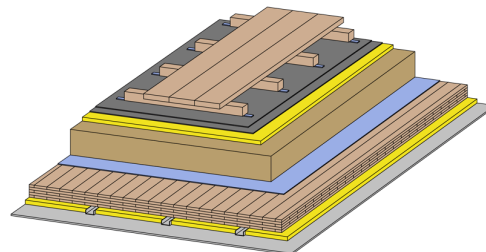


Flat roof - fdmnti01a-01

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

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 Diffusion	0.11 $\text{W}/(\text{m}^2\text{K})$ suitable
Calculated by HFA		
Acoustic performance	$R_w (C;C_{tr})$ $L_{n,w} (C_i)$	57(-4;11) dB 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	$\mu \text{ min} - \text{max}$	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