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Designation: fdmnti01a-00
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

Flat roof - fdmnti01a-00

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 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

Thermal performance	**U**	0.12 W/(m²K)
	Diffusion	suitable

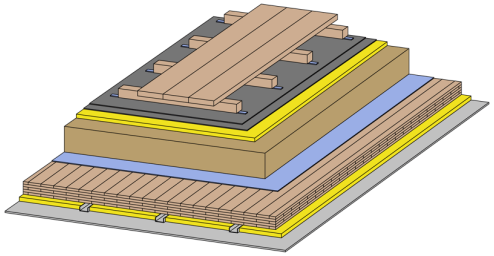
Calculated by HFA

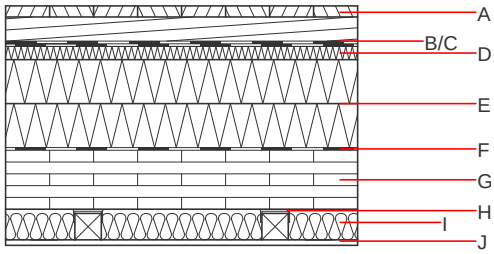
Acoustic performance	**R_w ($C;C_{tr}$)**	60 dB
	$L_{n,w}$ (C_I)	50

Assessed by TU-GRAZ

Mass per unit area	**m**	165.40 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	80.0	wooden grating/wooden terrace	0.130	50	500	1.600	D
B		sealing sheet sd≥ 100m					
C		separation nonwoven					
D	30.0	impact sound absorbing subflooring MW-T	0.036	1	130	1.030	A1
E	200.0	wood-fibre insulation board [0,045; R=160] (2*100)	0.045	5 - 7	160	2.100	E
F		sealing sheet bitumen					
G	140.0	cross laminated timber ≥ 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; 20]	0.040	1	20	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 m²)

Database ecoinvent

$OI3_{Kon}$	96.7

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		0.429	0.176	8,94E-6	0.112	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	175.124	1861.002	2036.125	1428.811	263.446	1692.257