

Flat roof - fdrhbi02a-01

flat roof, timber frame construction, ventilated, with dry lining, not suspended, other surface

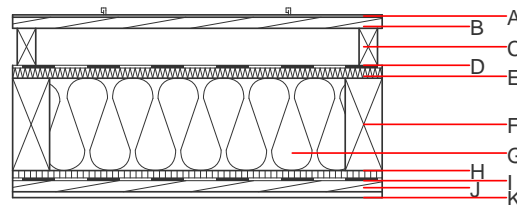
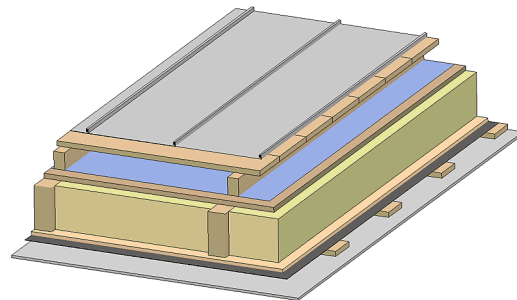
Performance rating

Fire protection performance REI 30
maximum span = 5 m; maximum load $E_{d,fi} = 3,66 \text{ kN/m}^2$
Classified by HFA

Thermal performance U 0.18 W/(m²K)
Diffusion suitable
Calculated by HFA

Acoustic performance $R_w (C; C_{tr})$ 47(-3;-7) dB
 $L_{n,w} (C_i)$
Assessed by TGM

Mass per unit area m 44.20 kg/m²
Calculation based on gypsum plaster board type DF



Note: The design of the under-roof construction and of the counter-battens have to be specified according to the roof pitch and the national requirements.

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		sheet metal roofing or plastic roofing membrane			7800		A1
A		Plastic roofing membrane					E
B	24.0	spruce wood closed cladding without spacing of cladding boards	0.120	50	450	1.600	D
C	80.0	spruce wood counter battens (ventilation)	0.120	50	450	1.600	D
D		sarking membrane $s_d \leq 0,3\text{m}$			1000		E
E	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
F	220.0	construction timber (80/*; e=800)	0.120	50	450	1.600	D
G	220.0	mineral wool [040; ≥ 16 ; <1000°C]	0.040	1	16	1.030	A1
H	16.0	particleboard	0.130	50 - 100	700	1.700	D
I		vapour barrier $s_d \geq 1\text{m}$			1000		
J	24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
K	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
K	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

013_{Kon} 40.5

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		0.180	0.084	2,88E-6	0.036	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	103.547	728.532	832.078	619.950	43.985	663.935