

Flat roof - fdrobo01a-03

flat roof, timber frame construction, not ventilated, without dry lining, directly, wooden surface

Performance rating

Fire protection performance REI 60

maximum span = 5 m; maximum load $E_{d,fi} = 2,6 \text{ kN/m}^2$
 Classified by HFA

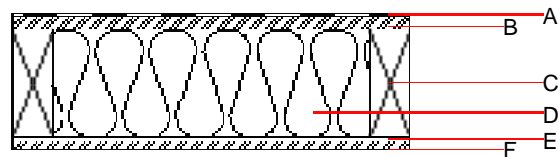
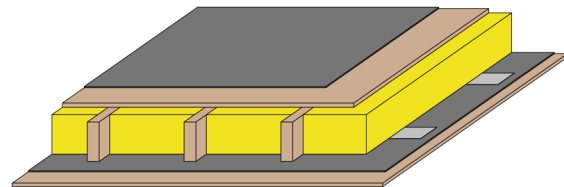
Thermal performance U 0.15 $\text{W}/(\text{m}^2\text{K})$
Diffusion

Attention: Due to the application of a moisture-adaptive vapour barrier an object-related proof according to protection against moisture (diffusion) is mandatory. A hygrothermic simulation is necessary (e.g. WUFI)
 Calculated by HFA

Acoustic performance $R_w (C;C_{tr})$ 39 dB
 $L_{n,w} (C_i)$

Assessed by HFA

Mass per unit area m 49.20 kg/m^2



Note: ATTENTION: Regarding protection against moisture an object-related proof in terms of parameter like e.g. climate, shading class etc. is required. Therefore a hygrothermic simulation is necessary (e.g. WUFI), a simple Glaser calculation is not allowed.

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	25.0	OSB	0.130	200	600	1.700	D
C	300.0	glued laminated timber (80/300; e=800)	0.130	50	500	1.600	D
D	300.0	mineral wool [040; 33; $\geq 1000^\circ\text{C}$] with metal strip to retain the insulation in case of fire (0,63/100 mm; e=500)	0.040	1	33	1.030	A1
E		moisture-adaptive vapour retarder					E
F	18.0	OSB	0.130	200	600	1.700	D

Sustainability rating (per m^2)

Database ecoinvent

OI_{kon} 38.9

Connection joint and screws are disregarded
 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		0.184	0.059	2,84E-6	0.063	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	128.989	665.676	794.665	490.125	101.136	591.261