

Pitched roof - sdrhzi09a-01

pitched 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 $E_{d,fi} = 2,62 \text{ kN/m}^2$ (rafter 60/200 without roofing, counter battens and battens)
 Classified by IBS
 Classified by HFA

Thermal performance U Diffusion 0.19 $\text{W}/(\text{m}^2\text{K})$
 suitable

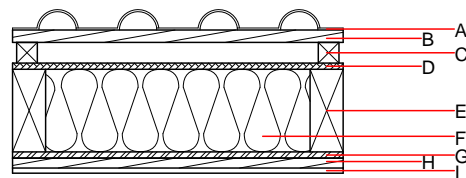
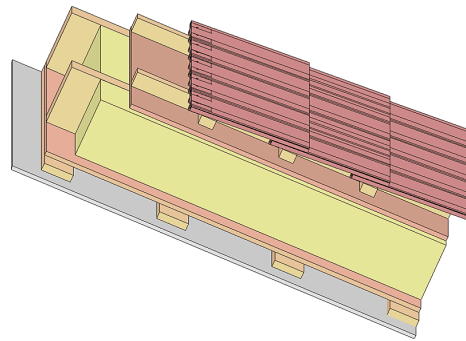
Calculated by HFA

Acoustic performance $R_w (C; C_{tr})$ 52(-1;-7) dB
 $L_{n,w} (C_i)$

with a tiled roof $R_w = 50 (-1; -7) \text{ dB}$
 Assessed by TGM

Mass per unit area m 45.90 kg/m^2

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	μ min – max	ρ	c	
A	concrete roof tile or tiled roof			2100		A1
B 30.0	spruce wood battens (30/50)	0.120	50	450	1.600	D
C 50.0	spruce wood counter battens (Austria: minimum height 50 mm), Germany 30 mm	0.120	50	450	1.600	D
D 15.0	fibreboard (MDF)	0.140	11	600	1.700	D
E 220.0	construction timber (80/..; e=625)	0.120	50	450	1.600	D
F 220.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
G 15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
H 24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
I 12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I 12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 29.6

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		0.131	0.059	2.80E-6	0.024	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	104.059	606.061	710.120	471.972	28.891	500.864