

### Pitched roof - sdrhzi09a-03

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

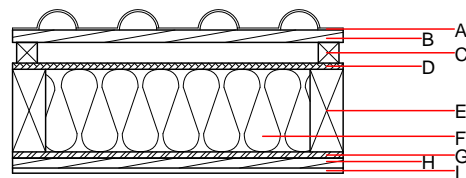
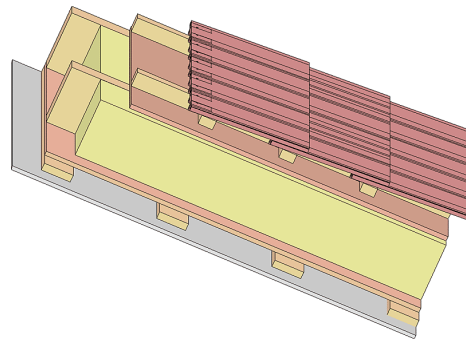
Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  53(-2;-8) dB  
 $L_{n,w} (C_i)$

with a tiled roof  $R_w = 51 (-2; -8) \text{ dB}$   
 Assessed by TGM

**Mass per unit area** m 50.80  $\text{kg}/\text{m}^2$

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
		$\lambda$	$\mu$ min – max	$\rho$	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 200.0	construction timber (80/..; e=625)	0.120	50	450	1.600	D
F 200.0	mineral wool [035; 50; <1000°C]	0.035	1	50	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 $\text{m}^2$ )

##### Database ecoinvent

$OI3_{Kon}$  51.0

Calculated by HFA

**Details of sustainability rating**

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO <sub>2</sub> -e.]	AP [kg SO <sub>2</sub> -e.]	EP [kg PO <sub>4</sub> -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.212	0.096	4,21E-6	0.032	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	113.043	589.683	702.725	718.181	28.891	747.073