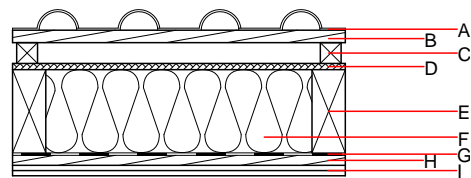
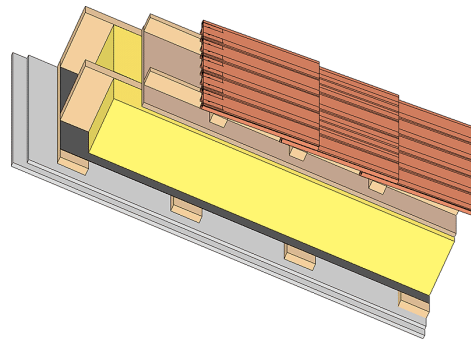


### Pitched roof - sdrhzi05b-03

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

#### Performance rating

<b>Fire protection performance</b>	REI	60
maximum span = 5 m; maximum load $E_{d,fi} = 3,66 \text{ kN/m}^2$ Classified by HFA		
<b>Thermal performance</b>	U Diffusion	0.19 $\text{W}/(\text{m}^2\text{K})$ suitable
Calculated by HFA		
<b>Acoustic performance</b>	$R_w (C;C_{tr})$ $L_{n,w} (C_i)$	52(-3;-9) dB
with a tiled roof $R_w = 50 (-3; -9)$ dB Assessed by TGM		
<b>Mass per unit area</b>	m	51.10 $\text{kg}/\text{m}^2$
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 (minimum height 50 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=800)	0.120	50	450	1.600	D
F 200.0	mineral wool [035; 50; <1000°C]	0.035	1	50	1.030	A1
G	vapour barrier $s_d \geq 1 \text{ m}$			1000		
H 24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
I 25.0	gypsum plaster board type DF (2x12,5 mm) or	0.250	10	800	1.050	A2
I 25.0	gypsum fibre board (2x12,5 mm)	0.320	21	1000	1.100	A2

#### Sustainability rating (per $\text{m}^2$ )

##### Database ecoinvent

$OI3_{kon}$  50.4

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		0.199	0.091	4,16E-6	0.029	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	85.183	433.342	518.525	693.469	22.510	715.979