

## Pitched roof - sdrhzi05a-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  $E_{d,fi} = 3,66 \text{ kN/m}^2$   
 Classified by HFA

**Thermal performance** U Diffusion 0.20  $\text{W}/(\text{m}^2\text{K})$   
 suitable

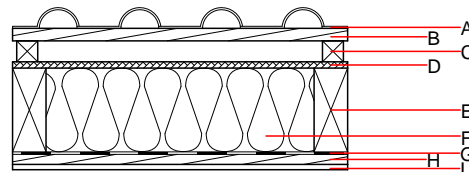
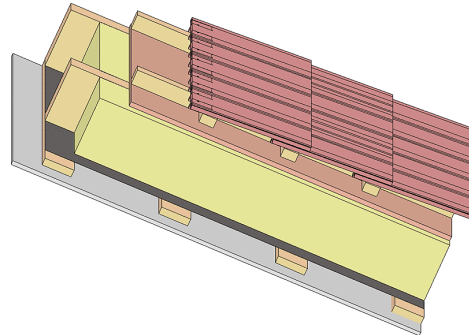
Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  51 (-3; 9) dB  
 $L_{n,w} (C_i)$

with a tiled roof  $R_w = 49 (-3; -9) \text{ dB}$   
 Assessed by TGM

**Mass per unit area** m 41.10  $\text{kg/m}^2$

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
			$\lambda$	$\mu \text{ min} - \text{max}$	$\rho$	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	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

013<sub>Kon</sub> 48.1

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		0.193	0.088	3,88E-6	0.028	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	83.154	433.342	516.496	655.148	22.510	677.658