

## Pitched roof - sdshzx01-03

pitched roof, exposed rafter, ventilated, -, without lining, wooden surface

### Performance rating

**Fire protection performance** REI 30

maximum span = 5 m; maximum load  $E_{d,fi} = 5,29 \text{ kN/m}^2$  (with exposed beams 180/240 and fire protection cladding)  
 Classified by IBSm<sup>2</sup>  
 Classified by HFA

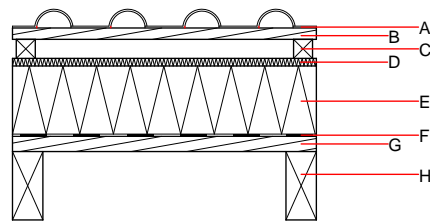
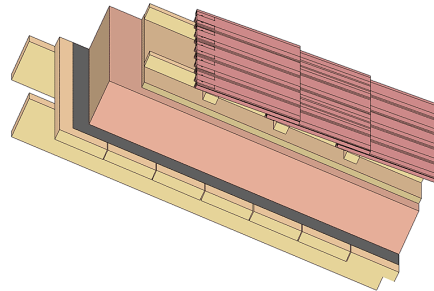
**Thermal performance** U Diffusion 0.13  $\text{W}/(\text{m}^2\text{K})$  suitable

Calculated by HFA

**Acoustic performance**  $R_w (C;C_{tr})$  44(-2;-8) dB  
 $L_{n,w} (C_i)$

with a tiled roof  $R_w = 43 (-2; -8) \text{ dB}$   
 Assessed by TGM

**Mass per unit area** m 77.60  $\text{kg}/\text{m}^2$



**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 (Austria: minimum height 50 mm), Germany 30 mm	0.120	50	450	1.600	D
D	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
E	260.0	wood-fibre insulation board [0,040; R=200] - insulation placed on top of the rafters	0.040	5 - 7	200	2.100	E
F		vapour barrier $s_{d,e} \geq 1 \text{ m}$				1000	
G	40.0	spruce wood tongue and groove, fire protection cladding (Germany minimum 50 mm)	0.120	50	450	1.600	D
H		construction timber in acc. with structural design	0.120	50	450	1.600	D

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

#### Database ecoinvent

$OI_{3kon}$  53.3

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		0.238	0.108	4,94E-6	0.046	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	199.034	1432.199	1631.234	916.308	109.597	1025.906