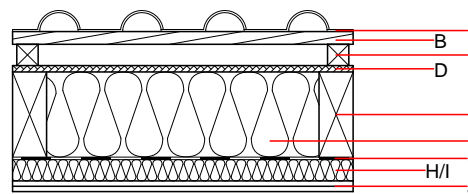
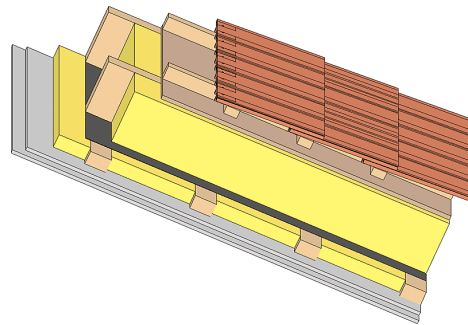


**Pitched roof - sdrhzi08b-01**

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	0.21 $\text{W}/(\text{m}^2\text{K})$ suitable
Calculated by HFA		
<b>Acoustic performance</b>	$R_w (C;C_{tr})$ $L_{n,w} (C_i)$	50(-4;-10) dB
with a tiled roof $R_w = 48 (-4; -10) \text{ dB}$ Assessed by TGM		
<b>Mass per unit area</b>	m	47.00 $\text{kg}/\text{m}^2$
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.  
 I=without insulation

**Register of building materials used for this application, cross-section** (from outside to inside, dimensions in mm)

Layer	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 [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
G		vapour barrier $s_d \geq 1 \text{ m}$				1000	
H	50.0	spruce wood cross battens (50/80;a=400)	0.120	50	450	1.600	D
I		air layer	0.000	1		1	1.008
J	25.0	gypsum plaster board type DF (2x12,5 mm) or	0.250	10	800	1.050	A2
J	25.0	gypsum fibre board (2x12,5 mm)	0.320	21	1000	1.100	A2

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

**Database ecoinvent**

**O13<sub>kon</sub>** 30.3

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		0.119	0.053	2,71E-6	0.022	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	80.202	475.925	556.127	460.977	46.624	507.601