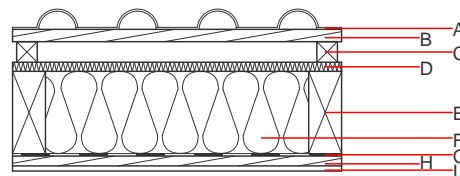
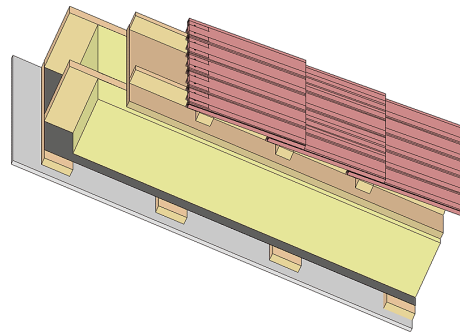


**Pitched roof - sdrhzi01 a-04**

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

**Performance rating**

<b>Fire protection performance</b>	<b>REI</b>	30
maximum span = 5 m; maximum load $E_{d,fi} = 3,66 \text{ kN/m}^2$ Classified by HFA		
<b>Thermal performance</b>	<b>U Diffusion</b>	0.20 $\text{W}/(\text{m}^2\text{K})$ suitable
Calculated by HFA		
<b>Acoustic performance</b>	<b><math>R_w (C;C_{tr})</math> <math>L_{n,w} (C_i)</math></b>	50(-3;-9) dB
with a tiled roof $R_w = 48 (-3; -9) \text{ dB}$ Assessed by TGM		
<b>Mass per unit area</b>	<b>m</b>	34.60 $\text{kg}/\text{m}^2$
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)

Layer	Thickness	Building material	Thermal performance				Reaction to fire EN
			$\lambda$	$\mu \text{ min - max}$	$\rho$	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	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
E	200.0	construction timber (80/..; e=800)	0.120	50	450	1.600	D
F	200.0	mineral wool [038; $\geq 33$ ; $\geq 1000^\circ\text{C}$ ]	0.038	1	33	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**

**O13<sub>kon</sub>** 32.0

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		0.143	0.049	2,24E-6	0.051	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	68.245	386.235	454.479	403.886	12.980	416.866