

## Pitched roof - sdmhzo03-01

pitched roof, solid wood construction, ventilated, without dry lining, without lining, wooden surface

### Performance rating

**Fire protection performance** REI 30

maximum span = 5 m; maximum load  $E_{d,fi}$  = 5 kN/m<sup>2</sup> (without roof structure)  
Classified by HFA

#### Germany

REI30

Load  $E_{d,fi}$  according to the German certification document

Corresponding proof: manufacturer-specific

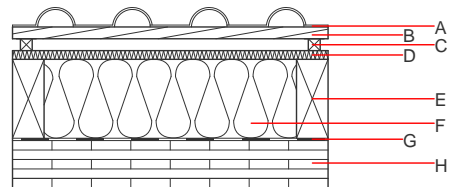
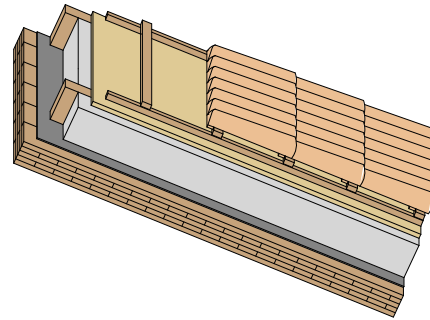
**Thermal performance** U Diffusion 0.17 W/(m<sup>2</sup>K) suitable

Calculated by TUM

**Acoustic performance**  $R_w$  (C;C<sub>tr</sub>) 46(-1;-7) dB  
 $L_{n,w}$  (C<sub>i</sub>)

Assessed by Müller-BBM

**Mass per unit area** m 139.40 kg/m<sup>2</sup>



**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 /tiled roof			2100		A1
B	30.0	spruce wood battens (30/50)	0.120	50	450	1.600	D
C	30.0	spruce wood counter battens (Germany 30mm); Austria: minimum 50mm	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	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
G		sealing sheet (air tight)					
H	120.0	cross laminated timber	0.130	50	500	1.600	D

### Sustainability rating (per m<sup>2</sup>)

#### Database ecoinvent

O13<sub>Kon</sub> 36.6

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	102.980
Biogenic carbon in kg CO <sub>2</sub> -e.	kg CO <sub>2</sub>	145.160
Energy use of Primary Energy	MJ	1287.700
Share of renewable PE	%	30.73

Calculated by TUM

## 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		0.203	0.086	3,90E-6	0.058	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	94.241	1255.287	1349.528	667.928	35.418	703.346

### Database GaBi (ÖKOBAUDAT)

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		0.138	0.028	4,75E-6	0.030	
C1 - C4		0.011	0.007	2,31E-7	0.001	
A1 - C4		0.150	0.035	4,98E-6	0.030	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	392.745	1677.818	2069.414	849.531	31.205	880.187
C1 - C4	2.268	-1534.962	-1532.694	33.329	-22.133	11.197
A1 - C4	395.710	142.857	537.417	891.994	9.072	900.518