

## Pitched roof - sdmhbi01a-02

pitched roof, solid wood construction, ventilated, with dry lining, not suspended, other surface

### Performance rating

**Fire protection performance** REI 60

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

#### Germany

REI60

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

Corresponding proof: manufacturer-specific

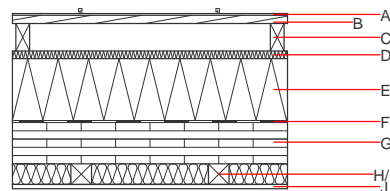
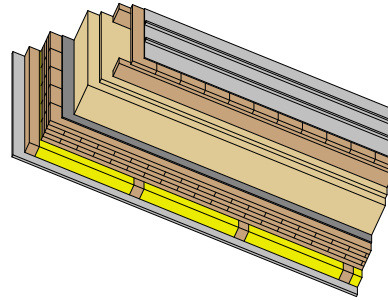
**Thermal performance** U Diffusion 0.11 W/(m<sup>2</sup>K) suitable

Calculated by TUM

**Acoustic performance**  $R_w$  ( $C$ ;  $C_{tr}$ ) 55(-1;-6) dB  
 $L_{n,w}$  ( $C_i$ )

Assessed by Müller-BBM

**Mass per unit area** m 150.90 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		sheet metal roofing on structured separation layer			7800		A1
B	24.0	spruce wood formwork	0.120	50	450	1.600	D
C	80.0	spruce wood counter battens (40/80)	0.120	50	450	1.600	D
D	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
E	240.0	wood-fibre insulation board [0,040; R=200] on-roof insulation	0.040	5 - 7	200	2.100	E
F	0.2	sealing sheet (air tight)					
G	120.0	cross laminated timber	0.130	50	500	1.600	D
H	60.0	spruce wood (battens 60/60; e=400)	0.120	50	450	1.600	D
I	60.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
J	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

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

#### Database ecoinvent

OI3<sub>Kon</sub> 77.8

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	149.240
Biogenic carbon in kg CO <sub>2</sub> -e.	kg CO <sub>2</sub>	209.330
Energy use of Primary Energy	MJ	1959.900
Share of renewable PE	%	35.06

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		0.372	0.166	6,59E-6	0.085	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	176.871	1931.664	2108.535	1308.584	102.343	1410.926

### 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		0.248	0.048	4,92E-6	0.051	
C1 - C4		0.003	0.001	2,40E-7	0.000	
A1 - C4		0.252	0.049	5,17E-6	0.051	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	684.393	2188.248	2871.419	1228.845	144.203	1372.376
C1 - C4	2.426	-2184.139	-2181.712	38.308	-64.449	-26.140
A1 - C4	687.200	4.368	690.347	1272.695	79.806	1351.830