

## Flat roof - fdrhbi08b-05

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

### Performance rating

**Fire protection performance** REI 60

maximum span = 5 m; maximum load  $E_{d,fi} = 3,66 \text{ kN/m}^2$   
Classified by HFA

**Thermal performance** U 0.18 W/(m<sup>2</sup>K)  
Diffusion suitable

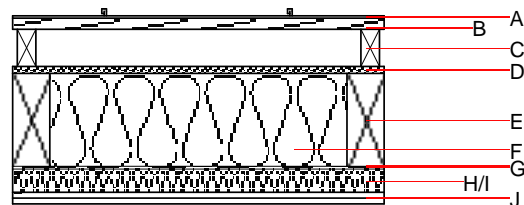
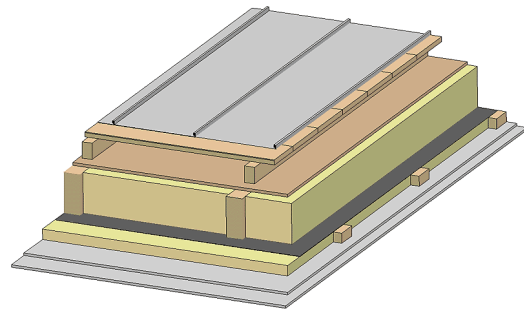
Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  50(-2;-7) dB  
 $L_{n,w} (C_i)$

Assessed by TGM

**Mass per unit area** m 51.40 kg/m<sup>2</sup>

Calculation based on GF



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		Plastic roofing membrane or					E
A		sheet metal roofing			7800		A1
B	24.0	spruce wood closed cladding without spacing of cladding boards	0.120	50	450	1.600	D
C	80.0	spruce wood counter battens (ventilation)	0.120	50	450	1.600	D
D		sarking membrane $s_d \leq 0,3\text{m}$			1000		E
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 [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	50.0	spruce wood cross battens (50/80;a=400)	0.120	50	450	1.600	D
I	50.0	mineral wool [038; $\geq 33$ ; $\geq 1000^\circ\text{C}$ ] or without insulation in type 01	0.038	1	33	1.030	A1
J	25.0	gypsum fibre board (2x12,5 mm) or	0.320	21	1000	1.100	A2
J	25.0	gypsum plaster board type DF (2x12,5 mm)	0.250	10	800	1.050	A2

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

#### Database ecoinvent

013<sub>Kon</sub> 45.9

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		0.219	0.082	2,39E-6	0.069	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	105.740	638.476	744.217	578.078	29.762	607.840