

## Flat roof - fdrhbi03a-02

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

### Performance rating

**Fire protection performance** REI 30

maximum span = 5 m; maximum load  $E_{d,fi} = 2,62 \text{ kN/m}^2$   
Classified by HFA

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

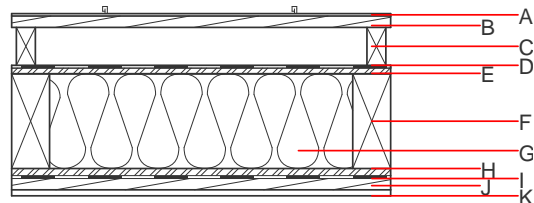
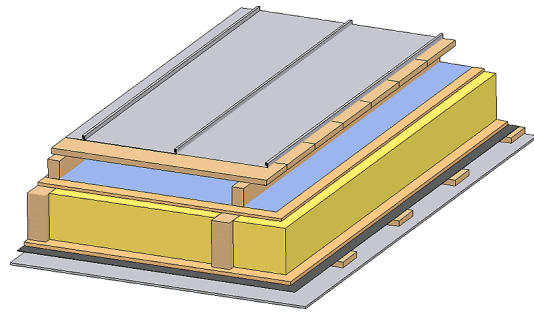
Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  47(-2;-6) dB  
 $L_{n,w} (C_i)$

Assessed by TGM

**Mass per unit area** m 46.50 kg/m<sup>2</sup>

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)

	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
E	15.0	OSB	0.130	200	600	1.700	D
F	240.0	construction timber (80/...; e=800)	0.120	50	450	1.600	D
G	240.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
H	15.0	OSB	0.130	200	600	1.700	D
I		vapour barrier $s_d \geq 11\text{m}$			1000		
J	24.0	spruce wood cladding with spacing of cladding boards(24/100); a=400	0.120	50	450	1.600	D
K	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
K	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

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

#### Database ecoinvent

013<sub>Kon</sub> 38.2

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		0.181	0.083	2,91E-6	0.036	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	143.100	755.065	898.164	580.486	30.376	610.862