

## Flat roof - fdrhbi01a-06

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

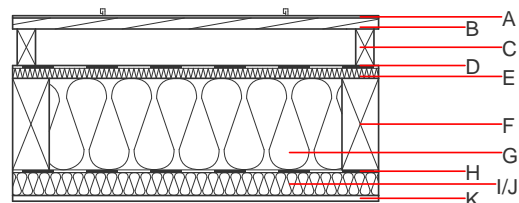
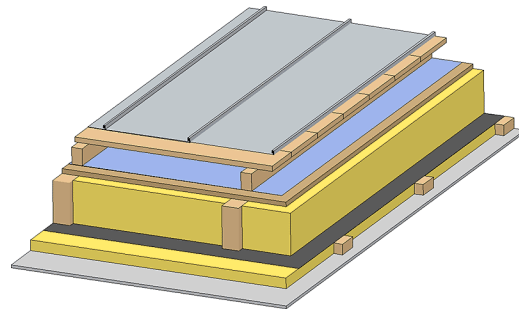
### Performance rating

<b>Fire protection performance</b>	<b>REI</b>	<b>30</b>
maximum span = 5 m; maximum load $E_{d,fi} = 3,66 \text{ kN/m}^2$ Classified by HFA		

<b>Thermal performance</b>	<b>U</b>	<b>0.17 W/(m<sup>2</sup>K)</b>
	<b>Diffusion</b>	<b>suitable</b>
Calculated by HFA		

<b>Acoustic performance</b>	<b>R<sub>w</sub> (C;C<sub>tr</sub>)</b>	<b>50(-3;-8) dB</b>
	<b>L<sub>n,w</sub> (C<sub>i</sub>)</b>	
Assessed by TGM		

<b>Mass per unit area</b>	<b>m</b>	<b>43.10 kg/m<sup>2</sup></b>
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
			$\lambda$	$\mu$ min – max	$\rho$	c	
A		sheet metal roofing or plastic roofing membrane			7800		A1
A		Plastic roofing membrane					E
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	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E
F	200.0	construction timber (80/*; e=800)	0.120	50	450	1.600	D
G	200.0	cellulose fibre [040; E]	0.040	1 - 2	55	2.000	E
H		vapour barrier $s_d \geq 2\text{m}$			1000		
I	50.0	spruce wood cross battens (50/80;a=400)	0.120	50	450	1.600	D
J	50.0	cellulose fibre [040; E] or without insulation in type 01	0.040	1 - 2	55	2.000	E
K	12.5	gypsum fibre board or	0.320	21	1000	1.100	A2
K	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

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

#### Database ecoinvent

013<sub>Kon</sub> 28.6

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		0.148	0.068	2,21E-6	0.028	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	106.396	704.892	811.288	437.957	19.383	457.340