

## Flat roof - fdrhbi01b-01

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

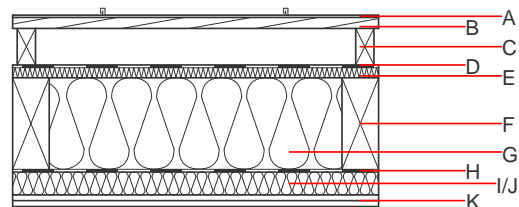
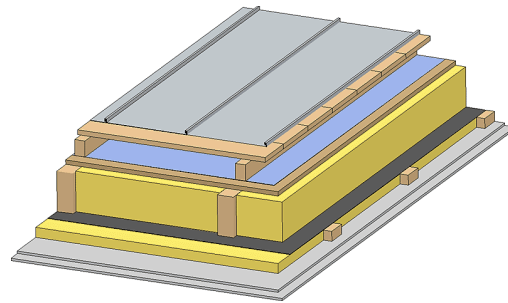
### Performance rating

**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 Diffusion 0.20 W/(m<sup>2</sup>K)  
suitable  
Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  49(-3;-8) dB  
 $L_{n,w} (C_i)$   
Assessed by TGM

**Mass per unit area** m 43.90 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.  
G=without insulation

### 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 |           | 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     | mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]        | 0.040               | 1                              | 16     | 1.030 | A1                  |
| 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 |           | without insulation   |                     |                                |        |       |                     |
| K | 25.0      | gypsum fibre board (2x12,5 mm) or                              | 0.320               | 21                             | 1000   | 1.100 | A2                  |
| K | 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> 36.5

Calculated by HFA

## Details of sustainability rating

### Database ecoinvent

| Lifecycle<br>(Phases) | GWP<br>[kg CO <sub>2</sub> -e.] | AP<br>[kg SO <sub>2</sub> -e.] | EP<br>[kg PO <sub>4</sub> -e.] | ODP<br>[kg R11-e.] | POCP<br>[kg Ethen-e.] |               |
|-----------------------|---------------------------------|--------------------------------|--------------------------------|--------------------|-----------------------|---------------|
| A1 - A3               |                                 | 0.162                          | 0.077                          | 2,81E-6            | 0.031                 |               |
| Lifecycle<br>(Phases) | PERE<br>[MJ]                    | PERM<br>[MJ]                   | PERT<br>[MJ]                   | PENRE<br>[MJ]      | PENRM<br>[MJ]         | PENRT<br>[MJ] |
| A1 - A3               | 102.551                         | 581.542                        | 684.093                        | 542.781            | 19.383                | 562.164       |