

Flat roof - fdrhbi02b-02

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

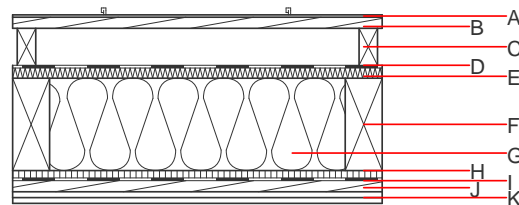
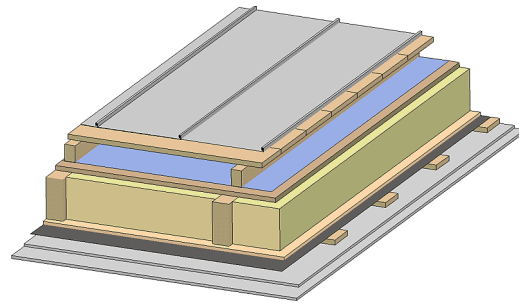
Performance rating

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 0.17 W/(m²K)
Diffusion suitable
Calculated by HFA

Acoustic performance $R_w (C; C_{tr})$ 48(-2;-6) dB
 $L_{n,w} (C_i)$
Assessed by TGM

Mass per unit area m 55.50 kg/m²
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 |
|---|-----------|---|---------------------|--------------------------------|--------|-------|---------------------|
| | | | λ | $\mu \text{ min} - \text{max}$ | ρ | 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 | 22.0 | softboard [045; 250] - rigid underlay | 0.045 | 5 | 250 | 2.100 | E |
| F | 240.0 | construction timber (80/*; e=800) | 0.120 | 50 | 450 | 1.600 | D |
| G | 240.0 | mineral wool [040; ≥ 16 ; <1000°C] | 0.040 | 1 | 16 | 1.030 | A1 |
| H | 16.0 | particleboard | 0.130 | 50 - 100 | 700 | 1.700 | D |
| I | | vapour barrier $s_d \geq 1\text{m}$ | | | 1000 | | |
| J | 24.0 | spruce wood cladding with spacing of cladding boards(24/100); a=400 | 0.120 | 50 | 450 | 1.600 | D |
| K | 25.0 | gypsum plaster board type DF (2x12,5 mm) or | 0.250 | 10 | 800 | 1.050 | A2 |
| K | 25.0 | gypsum fibre board (2x12,5 mm) | 0.320 | 21 | 1000 | 1.100 | A2 |

Sustainability rating (per m²)

Database ecoinvent

013_{Kon} 44.1

Calculated by HFA

Details of sustainability rating

Database ecoinvent

| Lifecycle (Phases) | GWP [kg CO ₂ -e.] | AP [kg SO ₂ -e.] | EP [kg PO ₄ -e.] | ODP [kg R11-e.] | POCP [kg Ethen-e.] | |
|-----------------------|---------------------------------|--------------------------------|--------------------------------|--------------------|-----------------------|--|
| A1 - A3 | | 0.191 | 0.089 | 3,25E-6 | 0.038 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 108.725 | 744.910 | 853.634 | 675.478 | 43.985 | 719.463 |