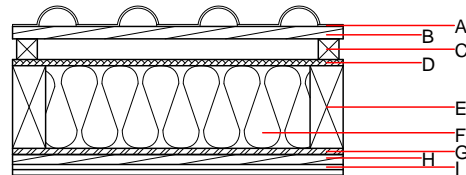
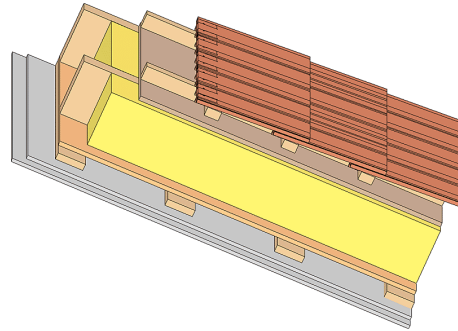


Pitched roof - sdrhzi09b-02

pitched 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 | 0.18 $\text{W}/(\text{m}^2\text{K})$ suitable |
| Calculated by HFA | | |
| Acoustic performance | $R_w (C;C_{tr})$ $L_{n,w} (C_i)$ | 54(-1;-7) dB |
| with a tiled roof $R_w = 52 (-1; -7)$ dB Assessed by TGM | | |
| Mass per unit area | m | 57.20 kg/m^2 |
| 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 | μ min – max | ρ | c | | |
| A | | concrete roof tile or tiled roof | | | | 2100 | A1 | |
| B | 30.0 | spruce wood battens (30/50) | 0.120 | 50 | 450 | 1.600 | D | |
| C | 50.0 | spruce wood counter battens (minimum height 50 mm) | 0.120 | 50 | 450 | 1.600 | D | |
| D | 15.0 | fibreboard (MDF) | 0.140 | 11 | 600 | 1.700 | D | |
| E | 240.0 | construction timber (80/..; e=800) | 0.120 | 50 | 450 | 1.600 | D | |
| F | 240.0 | mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$] | 0.040 | 1 | | 16 | 1.030 | A1 |
| G | 15.0 | OSB (sealed with airtight tape) | 0.130 | 200 | 600 | 1.700 | D | |
| H | 24.0 | spruce wood cladding with spacing of cladding boards(24/100); a=400 | 0.120 | 50 | 450 | 1.600 | D | |
| I | 25.0 | gypsum plaster board type DF (2x12,5 mm) or | 0.250 | 10 | 800 | 1.050 | A2 | |
| I | 25.0 | gypsum fibre board (2x12,5 mm) | 0.320 | 21 | 1000 | 1.100 | A2 | |

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 33.2

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 | | 0.142 | 0.064 | 3,17E-6 | 0.025 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 109.237 | 622.439 | 731.676 | 527.500 | 28.891 | 556.392 |