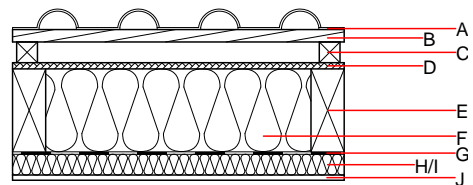
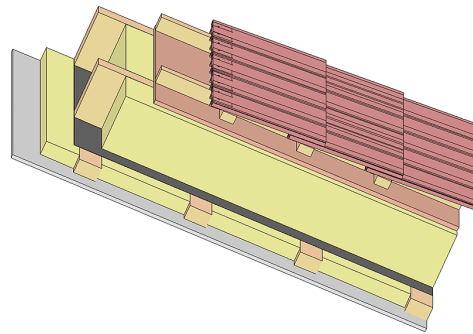


### Pitched roof - sdrhzi08a-00

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

#### Performance rating

|  |                                     |  |
|--|-------------------------------------|--|
| <b>Fire protection performance</b>   | REI                                 | 30   |
| maximum span = 5 m; maximum load $E_{d,fi} = 3,66 \text{ kN/m}^2$<br>Classified by HFA |                                     |  |
| <b>Thermal performance</b>   | U Diffusion                         | 0.18 $\text{W}/(\text{m}^2\text{K})$<br>suitable |
| Calculated by HFA  |                                     |  |
| <b>Acoustic performance</b>  | $R_w (C;C_{tr})$<br>$L_{n,w} (C_i)$ | 52(-3;-9) dB                                     |
| with a tiled roof $R_w = 50 (-3; -9) \text{ dB}$<br>Assessed by TGM                    |                                     |  |
| <b>Mass per unit area</b>  | m                                   | 37.60 $\text{kg}/\text{m}^2$                     |
| 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)

| Layer | Thickness | Building material                                       | Thermal performance |                 |        |       | Reaction to fire EN |
|-------|-----------|---|---------------------|-----------------|--------|-------|---------------------|
|       |           |   | $\lambda$           | $\mu$ min - max | $\rho$ | 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     | 200.0     | construction timber (80/..; e=800)                      | 0.120               | 50              | 450    | 1.600 | D                   |
| F     | 200.0     | mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ] | 0.040               | 1               | 16     | 1.030 | A1                  |
| G     |           | vapour barrier $s_d \geq 1 \text{ m}$                   |                     |                 | 1000   |       |                     |
| H     | 50.0      | spruce wood cross battens (50/80;a=400)                 | 0.120               | 50              | 450    | 1.600 | D                   |
| I     | 50.0      | mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ] | 0.040               | 1               | 16     | 1.030 | A1                  |
| J     | 12.5      | gypsum plaster board type DF or                         | 0.250               | 10              | 800    | 1.050 | A2                  |
| J     | 12.5      | gypsum fibre board                                      | 0.320               | 21              | 1000   | 1.100 | A2                  |

#### Sustainability rating (per $\text{m}^2$ )

##### Database ecoinvent

$OI3_{kon}$  30.8

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               |                                 | 0.125                          | 0.056                          | 2,63E-6            | 0.022                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 79.689       | 475.925      | 555.613      | 455.583       | 46.624        | 502.208       |