

## External wall - awshhi01a-01

external wall, timber frame construction, ventilated, with dry lining, with cladding, other surface

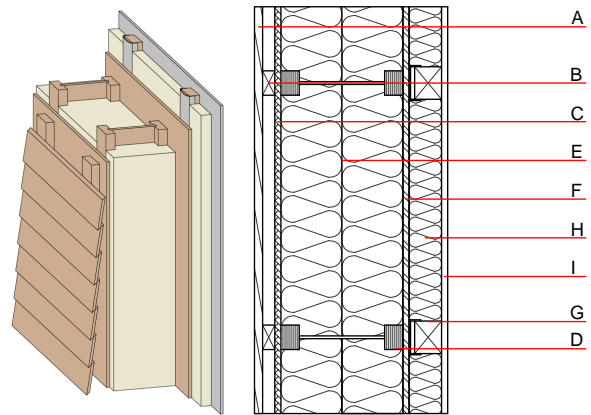
### Performance rating

**Fire protection performance** REI from inside 60  
 maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 22,5 \text{ kN/lm}$   
 Classified by HFA

**Thermal performance** U Diffusion 0.11  $\text{W}/(\text{m}^2\text{K})$  suitable  
 The stated thermal characteristics in the product data sheet are specified for the hard board intermediate web; the flanges are calculated with solid wood.  
 Calculated by HFA

**Acoustic performance**  $R_w (C;C_{tr})$  55 dB  
 $L_{n,w} (C_i)$   
 without resilient clips  $R_w \geq 52 \text{ dB}$   
 Assessed by HFA

**Mass per unit area** m 69.90  $\text{kg}/\text{m}^2$   
 Calculation based on gypsum plaster board type DF



### 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 | 20.0      | larch wood external wall cladding   | 0.155               | 150             | 600    | 1.600 | D                   |
| B | 30.0      | spruce wood battens offset (30/60) - ventilation  | 0.120               | 50              | 450    | 1.600 | D                   |
| C | 15.0      | fibreboard (MDF)  | 0.140               | 11              | 600    | 1.700 | D                   |
| D | 300.0     | Light composite wood-based beams (I-beams) with solid wood flanges (60/45) and hard board intermediate web ( $\geq 6,7$ ) $e=625$ | 0.400               | 20 - 30         | 800    | 1.700 | D                   |
| E | 300.0     | Wood fibre insulation [039; 45]   | 0.039               | 1 - 2           | 45     | 2.100 | E                   |
| F | 15.0      | OSB   | 0.130               | 200             | 600    | 1.700 | D                   |
| G | 80.0      | spruce wood battens on resilient clips (50/80; $e=625$ )  | 0.120               | 50              | 450    | 1.600 | D                   |
| H | 80.0      | Wood fibre insulation [039; 45]   | 0.039               | 1 - 2           | 45     | 2.100 | E                   |
| I | 15.0      | gypsum plaster board type DF or   | 0.250               | 10              | 800    | 1.050 | A2                  |
| I | 15.0      | gypsum fibre board  | 0.320               | 21              | 1000   | 1.100 | A2                  |

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

#### Database ecoinvent

$OI3_{Kon}$  26.9  
 Calculated with gypsum plaster fire protection board (GKF/DF)  
 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               |                                 | 0.134                          | 0.060                          | 2,52E-6            | 0.025                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 134.091      | 943.902      | 1077.993     | 512.215       | 57.986        | 570.201       |