

## External wall - awrhho08a-00

external wall, timber frame construction, ventilated, without dry lining, with cladding, other surface

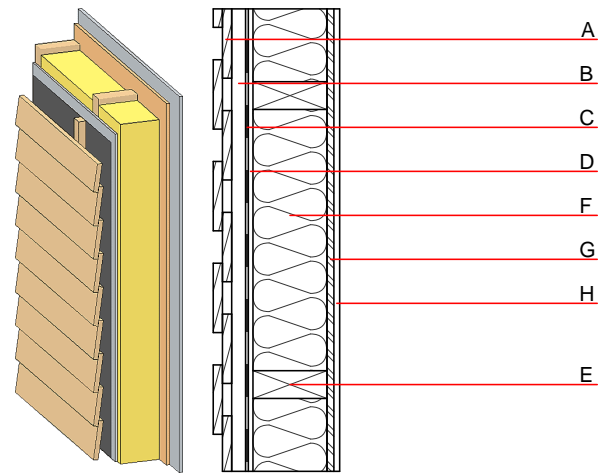
### Performance rating

**Fire protection performance**  
 REI from inside 60  
 REI from outside 30  
 maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 32,0 \text{ kN/m}$   
 Classified by HFA

**Thermal performance**  
 U 0.26  $\text{W}/(\text{m}^2\text{K})$   
 Diffusion suitable  
 Calculated by HFA

**Acoustic performance**  
 $R_w (C;C_{tr})$  47(-2;-8) dB  
 $L_{n,w} (C_i)$   
 Battens for the ventilation space screwed onto the structural timber result in an  $R_w(C;C_{tr})=43(-1;-7)$  dB  
 Assessed by MA39

**Mass per unit area** m 44.90  $\text{kg}/\text{m}^2$   
 Calculation based on GF



Note: e=625

### 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 | 24.0      | larch wood external wall cladding                       | 0.155               | 150             | 600    | 1.600 | D                   |
| B | 30.0      | spruce wood battens offset (30/50; 30/80) - ventilation | 0.120               | 50              | 450    | 1.600 | D                   |
| C |           | wind barrier  |                     |                 | 1000   |       |                     |
| D | 12.5      | gypsum fibre board                                      | 0.320               | 21              | 1000   | 1.100 | A2                  |
| E | 160.0     | construction timber (60/..; e=*)                        | 0.120               | 50              | 450    | 1.600 | D                   |
| F | 160.0     | mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ] | 0.040               | 1               | 16     | 1.030 | A1                  |
| G | 15.0      | OSB (sealed with airtight tape)                         | 0.130               | 200             | 600    | 1.700 | D                   |
| H | 12.5      | gypsum fibre board or                                   | 0.320               | 21              | 1000   | 1.100 | A2                  |
| H | 12.5      | gypsum plaster board type DF                            | 0.250               | 10              | 800    | 1.050 | A2                  |

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

#### Database ecoinvent

$O13_{kon}$  21.0

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               |                                 | 0.101                          | 0.046                          | 1,99E-6            | 0.021                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 103.794      | 509.174      | 612.968      | 353.307       | 17.244        | 370.551       |