

### External wall - awropo21b-04

external wall, timber frame construction, not ventilated, without dry lining, with rendering, other surface

#### Performance rating

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

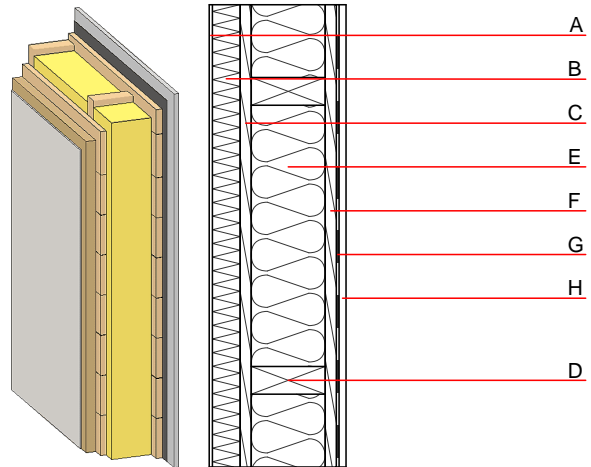
**Thermal performance** U 0.18  $\text{W}/(\text{m}^2\text{K})$   
 Diffusion suitable  
 Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  53(-3;-9) dB  
 $L_{n,w} (C_i)$

Assessed by MA39

**Mass per unit area** m 82.60  $\text{kg}/\text{m}^2$

Calculation based on gypsum plaster board type DF



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<br>EN |
|---|-----------|--|---------------------|-----------------|--------|-------|------------------------|
|   |           |  | $\lambda$           | $\mu$ min - max | $\rho$ | c     |                        |
| A | 7.0       | plaster                                      | 1.000               | 10 - 35         | 2000   | 1.130 | A1                     |
| B | 60.0      | wood-fibre insulation board WF-PT [045; 180] | 0.045               | 5 - 7           | 180    | 2.100 | E                      |
| C | 24.0      | planking spruce wood                         | 0.120               | 50              | 450    | 1.600 | D                      |
| D | 160.0     | construction timber (60/..; e=*)             | 0.120               | 50              | 450    | 1.600 | D                      |
| E | 160.0     | mineral wool [035; 50; <1000°C]              | 0.035               | 1               | 50     | 1.030 | A1                     |
| F | 24.0      | planking spruce wood                         | 0.120               | 50              | 450    | 1.600 | D                      |
| G |           | vapour barrier $s_{d} \geq 6\text{m}$        |                     |                 | 1000   |       |                        |
| H | 15.0      | gypsum plaster board type DF or              | 0.250               | 10              | 800    | 1.050 | A2                     |
| H | 15.0      | gypsum fibre board                           | 0.320               | 21              | 1000   | 1.100 | A2                     |

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

##### Database ecoinvent

$OI3_{Kon}$  46.3

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               |                                 | 0.206                          | 0.093                          | 3,94E-6            | 0.033                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 123.372      | 695.979      | 819.351      | 684.871       | 21.724        | 706.595       |