

**External wall - awropo11a-07**

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 30  
 maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 32,0 \text{ kN/m}$   
 Classified by HFA

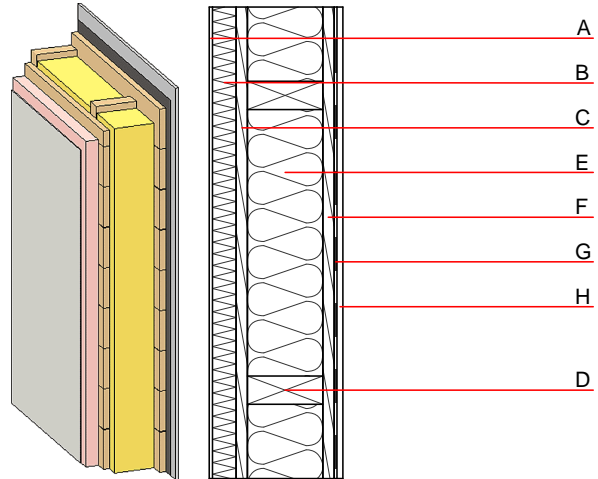
**Thermal performance** U 0.20  $\text{W}/(\text{m}^2\text{K})$   
 Diffusion suitable  
 Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  44(-2;-6) dB  
 $L_{n,w} (C_i)$

Assessed by MA39

**Mass per unit area** m 52.80  $\text{kg}/\text{m}^2$

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 | 4.0       | plaster                              | 1.000               | 10 - 35         | 2000   | 1.130 | A1                     |
| B | 50.0      | Polystyrene EPS-F [0,040]            | 0.040               | 20 - 50         | 17     | 1.450 | E                      |
| C | 25.0      | planking spruce wood                 | 0.120               | 50              | 450    | 1.600 | D                      |
| D | 160.0     | construction timber (60/160; e=*)    | 0.120               | 50              | 450    | 1.600 | D                      |
| E | 160.0     | sheep wool [0,041; R=26]             | 0.041               | 1               | 30     | 1.720 | E                      |
| F | 25.0      | planking spruce wood                 | 0.120               | 50              | 450    | 1.600 | D                      |
| G |           | vapour barrier $s_d \geq 16\text{m}$ |                     |                 | 1000   |       |                        |
| H | 12.5      | gypsum plaster board type DF or      | 0.250               | 10              | 800    | 1.050 | A2                     |
| H | 12.5      | gypsum fibre board                   | 0.320               | 21              | 1000   | 1.100 | A2                     |

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

**Database ecoinvent**

$OI3_{kon}$  15.7

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               |                                 | 0.078                          | 0.031                          | 1,70E-6            | 0.026                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 91.702       | 624.024      | 715.726      | 299.530       | 36.916        | 336.446       |