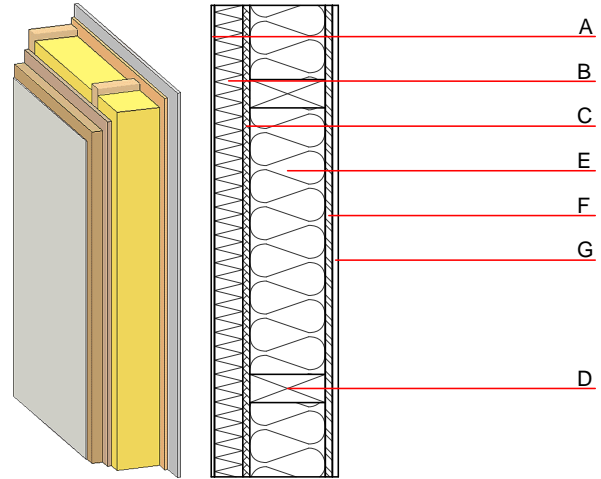


**External wall - awropo19a-07**

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

**Performance rating**

|  |                   |                                      |
|--|-------------------|--------------------------------------|
| <b>Fire protection performance</b>   | REI from inside   | 60                                   |
|  | REI from outside  | 60                                   |
| maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$<br>Classified by HFA |                   |                                      |
| <b>Thermal performance</b>   | U                 | 0.21 $\text{W}/(\text{m}^2\text{K})$ |
|  | Diffusion         | suitable                             |
| Calculated by HFA  |                   |                                      |
| <b>Acoustic performance</b>  | $R_w (C; C_{tr})$ | 51 (-3;-9) dB                        |
|  | $L_{n,w} (C_i)$   |                                      |
| Assessed by MA39   |                   |                                      |
| <b>Mass per unit area</b>  | m                 | 67.70 $\text{kg}/\text{m}^2$         |
| 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 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 | 15.0      | fibreboard (MDF)                             | 0.140               | 11              | 600    | 1.700 | D                   |
| D | 160.0     | construction timber (60/..; 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 | 15.0      | OSB (sealed with airtight tape)              | 0.130               | 200             | 600    | 1.700 | D                   |
| G | 12.5      | gypsum plaster board type DF or              | 0.250               | 10              | 800    | 1.050 | A2                  |
| G | 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               |                                 | 0.131                          | 0.057                          | 2,75E-6            | 0.020                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 95.112       | 697.558      | 792.670      | 505.753       | 47.928        | 553.681       |