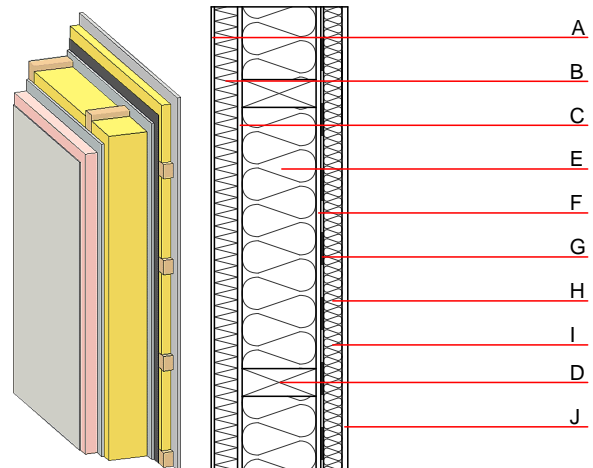


## External wall - awropi02a-03

external wall, timber frame construction, not ventilated, with dry lining, with rendering, other surface

### Performance rating

|  |                   |                           |
|--|-------------------|---------------------------|
| <b>Fire protection performance</b>   | REI from inside   | 45                        |
|  | REI from outside  | 30                        |
| maximum ceiling height = 3 m; maximum load $E_{d,fi} = 19,2 \text{ kN/m}$<br>Classified by HFA   |                   |                           |
| <b>Thermal performance</b>   | U                 | 0.15 W/(m <sup>2</sup> K) |
|  | Diffusion         | suitable                  |
| Calculated by HFA  |                   |                           |
| <b>Acoustic performance</b>  | $R_w (C; C_{tr})$ | 46(-3;-6) dB              |
|  | $L_{n,w} (C_i)$   |                           |
| Vertical battens for the dry lining screwed onto the ledger beams lead to an $R_w(C; C_{tr})=43(-1;-5) \text{ dB}$<br>Assessed by MA39 |                   |                           |
| <b>Mass per unit area</b>  | m                 | 53.30 kg/m <sup>2</sup>   |
| 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<br>EN |
|---|-----------|---|---------------------|--------------------------------|--------|-------|------------------------|
|   |           |   | $\lambda$           | $\mu \text{ min} - \text{max}$ | $\rho$ | 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 | 12.5      | gypsum fibre board  | 0.320               | 21                             | 1000   | 1.100 | A2                     |
| D | 200.0     | construction timber (60/...; e=*)   | 0.120               | 50                             | 450    | 1.600 | D                      |
| E | 200.0     | mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]                         | 0.040               | 1                              | 16     | 1.030 | A1                     |
| F | 10.0      | gypsum fibre board  | 0.320               | 21                             | 1000   | 1.100 | A2                     |
| G |           | vapour barrier $s_d \geq 13\text{m}$  |                     |                                | 1000   |       |                        |
| H | 40.0      | spruce wood cross battens (a=400) or battens offset)                            | 0.120               | 50                             | 450    | 1.600 | D                      |
| I | 40.0      | mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ] or air layer in type 02 | 0.040               | 1                              | 16     | 1.030 | A1                     |
| J | 12.5      | gypsum plaster board type DF or   | 0.250               | 10                             | 800    | 1.050 | A2                     |
| J | 12.5      | gypsum fibre board  | 0.320               | 21                             | 1000   | 1.100 | A2                     |

### Sustainability rating (per m<sup>2</sup>)

#### Database ecoinvent

013<sub>Kon</sub> 30.7

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               |                                 | 0.112                          | 0.048                          | 2,37E-6            | 0.022                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 51.114       | 198.174      | 249.288      | 415.916       | 36.048        | 451.964       |