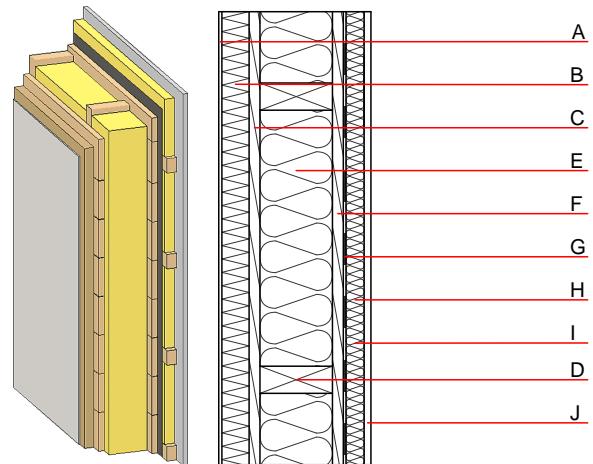


## External wall - awropi18b-10

external wall, timber frame construction, not ventilated, with 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                 | 0.18 $\text{W}/(\text{m}^2\text{K})$ |
|   | Diffusion         | suitable                             |
| Calculated by HFA   |                   |                                      |
| <b>Acoustic performance</b>   | $R_w (C; C_{tr})$ | 52(-2;9) dB                          |
|   | $L_{n,w} (C_i)$   |                                      |
| Vertical battens for the dry lining screwed onto the ledger beams lead to an $R_w(C;C_{tr})=49(-1;-7)$ dB<br>Assessed by MA39 |                   |                                      |
| <b>Mass per unit area</b>   | m                 | 80.60 $\text{kg}/\text{m}^2$         |
| 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 EN |
|---|-----------|---|---------------------|--------------------------------|--------|-------|---------------------|
|   |           |   | $\lambda$           | $\mu \text{ min} - \text{max}$ | $\rho$ | 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     | sheep wool [0,041; R=26]                            | 0.041               | 1                              | 30     | 1.720 | E                   |
| F | 24.0      | planking spruce wood                                | 0.120               | 50                             | 450    | 1.600 | D                   |
| G |           | vapour barrier $s_d \geq 7 \text{ m}$               |                     |                                | 1000   |       |                     |
| H | 40.0      | spruce wood cross battens (a=400) or battens offset | 0.120               | 50                             | 450    | 1.600 | D                   |
| I | 40.0      | sheep wool [0,041; R=26]                            | 0.041               | 1                              | 30     | 1.720 | E                   |
| J | 15.0      | gypsum plaster board type DF or                     | 0.250               | 10                             | 800    | 1.050 | A2                  |
| J | 15.0      | gypsum fibre board                                  | 0.320               | 21                             | 1000   | 1.100 | A2                  |

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

#### Database ecoinvent

013<sub>Kon</sub> 28.0

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               |                                 | 0.133                          | 0.059                          | 3,02E-6            | 0.028                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 122.245      | 895.394      | 1017.639     | 513.314       | 31.130        | 544.444       |