

## External wall - awropo20a-02

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 $E_{d,fi} = 32,0 \text{ kN/m}^2$<br>Classified by HFA |                  |    |

|                     |           |                           |
|---------------------|-----------|---------------------------|
| Thermal performance | U         | 0.17 W/(m <sup>2</sup> K) |
|                     | Diffusion | suitable                  |

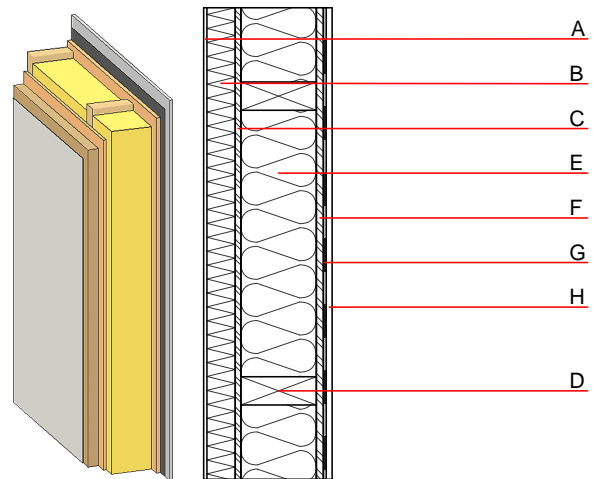
Calculated by HFA

|                      |                   |              |
|----------------------|-------------------|--------------|
| Acoustic performance | $R_w (C; C_{tr})$ | 52(-3;-9) dB |
|                      | $L_{n,w} (C_i)$   |              |

Assessed by MA39

|                    |   |                         |
|--------------------|---|-------------------------|
| Mass per unit area | m | 69.30 kg/m <sup>2</sup> |
|--------------------|---|-------------------------|

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 |
|---|-----------|---|---------------------|--------------------------------|--------|-------|------------------------|
|   |           |   | $\lambda$           | $\mu \text{ min} - \text{max}$ | $\rho$ | 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 | 12.0      | OSB   | 0.130               | 200                            | 600    | 1.700 | D                      |
| 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 | 15.0      | OSB   | 0.130               | 200                            | 600    | 1.700 | D                      |
| G |           | vapour barrier $s_d \geq 9\text{m}$                     |                     |                                | 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 m<sup>2</sup>)

#### Database ecoinvent

|                    |      |
|--------------------|------|
| OI3 <sub>Kon</sub> | 37.8 |
|--------------------|------|

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               |                                 | 0.163                          | 0.071                          | 3,17E-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               | 116.649      | 620.055      | 736.704      | 572.554       | 42.864        | 615.418       |