

## External wall - awrhi02a-06

external wall, timber frame construction, ventilated, with dry lining, with cladding, other surface

### Performance rating

|                             |                  |    |
|-----------------------------|------------------|----|
| Fire protection performance | REI from inside  | 60 |
|                             | REI from outside | 30 |

maximum ceiling height = 3 m; maximum load  $E_{d,fi}$  = 19,2 kN/m  
Classified by HFA

|                     |           |                           |
|---------------------|-----------|---------------------------|
| Thermal performance | U         | 0.14 W/(m <sup>2</sup> K) |
|                     | Diffusion | suitable                  |

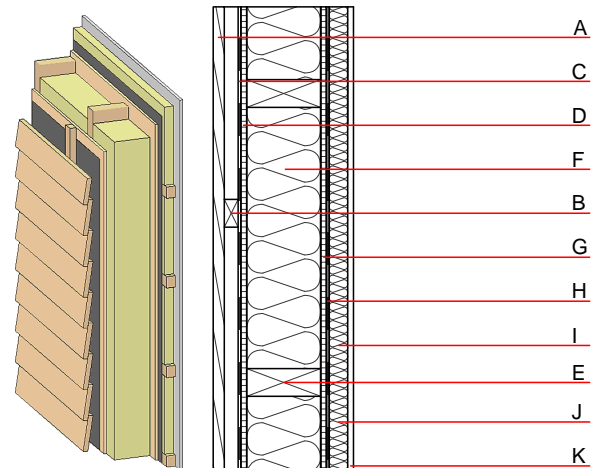
Calculated by HFA

|                      |                             |               |
|----------------------|-----------------------------|---------------|
| Acoustic performance | $R_w$ (C;C <sub>tr</sub> )  | 52(-3;-10) dB |
|                      | $L_{n,w}$ (C <sub>i</sub> ) |               |

Battens for the ventilation space screwed onto the structural timber together with vertical battens for the dry lining screwed directly onto the ledger beams will result in  $R_w(C;C_{tr})=45(-1;-5)$  dB  
Assessed by MA39

|                    |   |                         |
|--------------------|---|-------------------------|
| Mass per unit area | m | 49.30 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 EN |
|---|-----------|---|---------------------|-----------------|--------|-------|---------------------|
|   |           |   | $\lambda$           | $\mu$ min – max | $\rho$ | c     |                     |
| A | 24.0      | larch wood external wall cladding                       | 0.155               | 150             | 600    | 1.600 | D                   |
| B | 30.0      | spruce wood battens offset (30/50; 30/80) - ventilation | 0.120               | 50              | 450    | 1.600 | D                   |
| C |           | wind barrier  |                     |                 | 1000   |       |                     |
| D | 16.0      | particleboard   | 0.130               | 50 - 100        | 700    | 1.700 | D                   |
| E | 240.0     | construction timber (60/...; e=*)                       | 0.120               | 50              | 450    | 1.600 | D                   |
| F | 240.0     | mineral wool [040; $\geq 16$ ; <1000°C]                 | 0.040               | 1               | 16     | 1.030 | A1                  |
| G | 16.0      | particleboard   | 0.130               | 50 - 100        | 700    | 1.700 | D                   |
| H |           | vapour barrier sd $\geq 5$ m                            |                     |                 | 1000   |       |                     |
| I | 80.0      | spruce wood cross battens (a=400) or battens offset     | 0.120               | 50              | 450    | 1.600 | D                   |
| J | 80.0      | mineral wool [040; $\geq 16$ ; <1000°C]                 | 0.040               | 1               | 16     | 1.030 | A1                  |
| K | 12.5      | gypsum plaster board type DF or                         | 0.250               | 10              | 800    | 1.050 | A2                  |
| K | 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> | 34.7 |
|--------------------|------|

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               |                                 | 0.161                          | 0.073                          | 2,72E-6            | 0.035                 |               |
| Lifecycle<br>(Phases) | PERE<br>[MJ]                    | PERM<br>[MJ]                   | PERT<br>[MJ]                   | PENRE<br>[MJ]      | PENRM<br>[MJ]         | PENRT<br>[MJ] |
| A1 - A3               | 113.337                         | 809.713                        | 923.050                        | 580.518            | 53.916                | 634.434       |