

## External wall - awrhh08b-08

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 | 60 |

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

|                     |           |                           |
|---------------------|-----------|---------------------------|
| Thermal performance | U         | 0.21 W/(m <sup>2</sup> K) |
|                     | Diffusion | suitable                  |

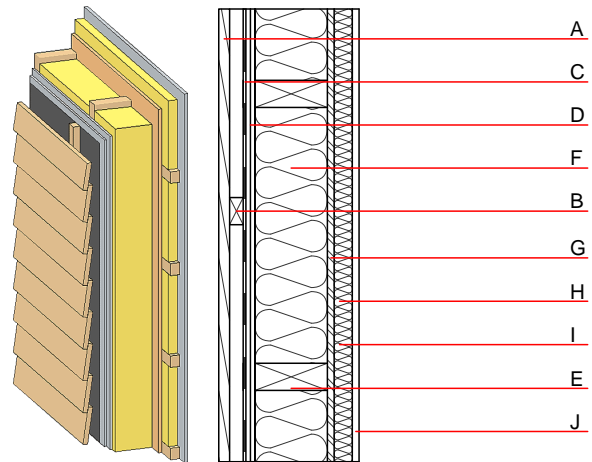
Calculated by HFA

|                      |                             |              |
|----------------------|-----------------------------|--------------|
| Acoustic performance | $R_w$ (C;C <sub>tr</sub> )  | 52(-2;-8) 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<sub>tr</sub>)=45(-1;-5) dB  
Assessed by MA39

|                    |   |                         |
|--------------------|---|-------------------------|
| Mass per unit area | m | 61.00 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 | 20.0      | gypsum fibre board (2x10 mm)                             | 0.320               | 21              | 1000   | 1.100 | A2                  |
| E | 160.0     | mineral wool [038; ≥33; ≥1000°C]                         | 0.038               | 1               | 33     | 1.030 | A1                  |
| F | 160.0     | construction timber (60.; e=*)                           | 0.120               | 50              | 450    | 1.600 | D                   |
| G | 15.0      | OSB (sealed with airtight tape)                          | 0.130               | 200             | 600    | 1.700 | D                   |
| H | 40.0      | spruce wood cross battens (a=400) or battens offset      | 0.120               | 50              | 450    | 1.600 | D                   |
| I | 40.0      | mineral wool [038; ≥33; ≥1000°C] or air layer in type 02 | 0.038               | 1               | 33     | 1.030 | A1                  |
| J | 15.0      | gypsum fibre board or                                    | 0.320               | 21              | 1000   | 1.100 | A2                  |
| J | 15.0      | gypsum plaster board type DF                             | 0.250               | 10              | 800    | 1.050 | A2                  |

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

#### Database ecoinvent

|                    |      |
|--------------------|------|
| O13 <sub>Kon</sub> | 34.9 |
|--------------------|------|

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               |                                 | 0.177                          | 0.056                          | 2,27E-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               | 98.210       | 567.917      | 666.127      | 449.888       | 19.334        | 469.222       |