

External wall - awropi15a-08

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

Performance rating

| | | |
|-----------------------------|------------------|----|
| Fire protection performance | REI from inside | 60 |
| | REI from outside | 90 |

maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$
Classified by HFA

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

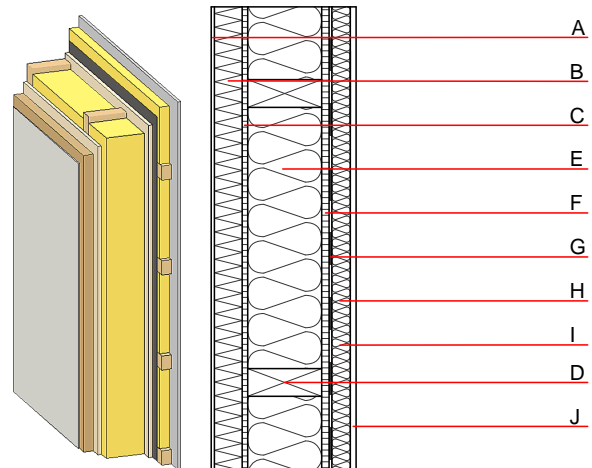
Calculated by HFA

| | | |
|----------------------|-------------------|---------------|
| Acoustic performance | $R_w (C; C_{tr})$ | 52(-3;-10) 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
Assessed by MA39

| | | |
|--------------------|---|-------------------------|
| Mass per unit area | m | 74.80 kg/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 |
|---|-----------|---|---------------------|--------------------------------|--------|-------|---------------------|
| | | | λ | $\mu \text{ min} - \text{max}$ | ρ | 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 | particleboard P5 | 0.130 | 50 - 100 | 700 | 1.700 | D |
| D | 160.0 | construction timber (60/...; e=*) | 0.120 | 50 | 450 | 1.600 | D |
| E | 160.0 | mineral wool [038; ≥33; ≥1000°C] | 0.038 | 1 | 33 | 1.030 | A1 |
| F | 16.0 | particleboard P4 | 0.130 | 50 - 100 | 700 | 1.700 | D |
| G | | vapour barrier sd≥ 7m | | | 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 [038; ≥33; ≥1000°C] | 0.038 | 1 | 33 | 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 m²)

Database ecoinvent

| | |
|--------------------|------|
| O13 _{Kon} | 49.1 |
|--------------------|------|

Calculated by HFA

Details of sustainability rating

Database ecoinvent

| Lifecycle (Phases) | GWP [kg CO ₂ -e.] | AP [kg SO ₂ -e.] | EP [kg PO ₄ -e.] | ODP [kg R11-e.] | POCP [kg Ethen-e.] | |
|-----------------------|---------------------------------|--------------------------------|--------------------------------|--------------------|-----------------------|---------------|
| A1 - A3 | | 0.211 | 0.078 | 2,94E-6 | 0.061 | |
| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
| A1 - A3 | 76.640 | 698.627 | 775.267 | 681.947 | 73.105 | 755.052 |