

External wall - awropi01a-11

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 30
maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 19,2 kN/m
Classified by HFA

Thermal performance U 0.18 W/(m²K)
Diffusion suitable

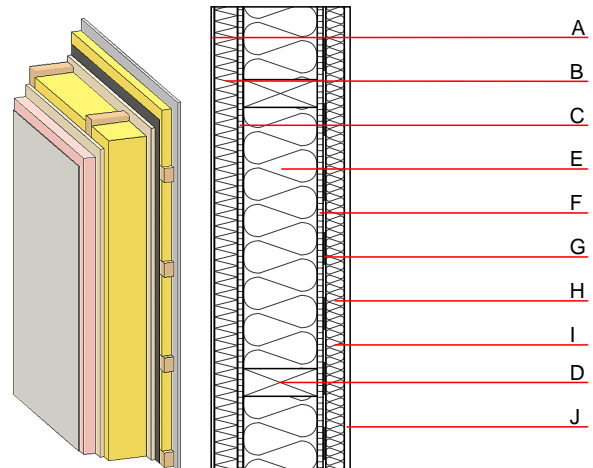
Calculated by HFA

Acoustic performance R_w (C;C_{tr}) 44(-2;-6) dB
 $L_{n,w}$ (C_i)

Vertical battens for the dry lining screwed onto the ledger beams lead to an $R_w(C;C_{tr})=41(-1;-5)$ dB
Assessed by MA39

Mass per unit area m 54.60 kg/m²

Calculation based on GF



Note: e=400

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 | μ min – max | ρ | c | |
| A | 4.0 | plaster | 1.000 | 10 - 35 | 2000 | 1.130 | A1 |
| B | 50.0 | Polystyrene EPS-F [0,040] | 0.040 | 20 - 50 | 17 | 1.450 | E |
| C | 16.0 | particleboard | 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 [040; ≥ 16 ; <1000°C] | 0.040 | 1 | 16 | 1.030 | A1 |
| F | 16.0 | particleboard | 0.130 | 50 - 100 | 700 | 1.700 | D |
| G | | vapour barrier sd ≥ 17 m | | | 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 [040; ≥ 16 ; <1000°C] or air layer in type 02 | 0.040 | 1 | 16 | 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

013_{Kon} 31.1

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 | | 0.123 | 0.051 | 2,12E-6 | 0.030 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 60.006 | 482.532 | 542.538 | 472.836 | 72.951 | 545.788 |