

External wall - awropo01b-08

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 $E_{d,fi} = 50,0 \text{ kN/m}$
 Classified by HFA

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

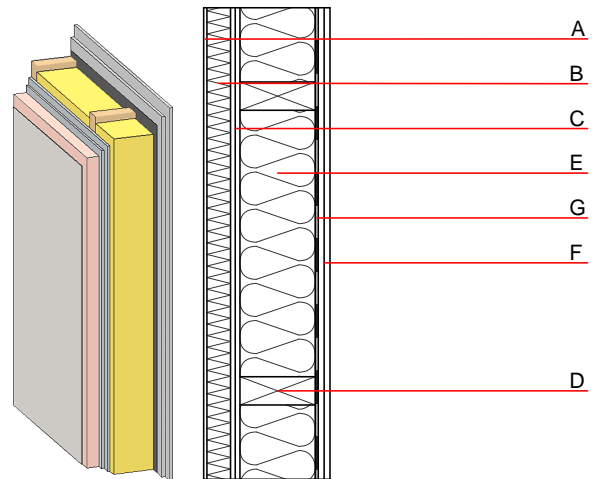
Calculated by HFA

| | | |
|-----------------------------|-------------------|--------------|
| Acoustic performance | $R_w (C; C_{tr})$ | 48(-2;-6) dB |
| | $L_{n,w} (C_i)$ | |

Assessed by MA39

| | | |
|---------------------------|---|-------------------------|
| Mass per unit area | m | 61.90 kg/m ² |
|---------------------------|---|-------------------------|

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 | 20.0 | gypsum fibre board (2x10 mm) | 0.320 | 21 | 1000 | 1.100 | A2 |
| D | 160.0 | construction timber (60/..; e=*) | 0.120 | 50 | 450 | 1.600 | D |
| E | 160.0 | mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$] | 0.040 | 1 | 16 | 1.030 | A1 |
| F | | vapour barrier $s_{d\geq 13\text{m}}$ | | | 1000 | | |
| G | 25.0 | gypsum fibre board (2x12,5 mm) or | 0.320 | 21 | 1000 | 1.100 | A2 |
| G | 25.0 | gypsum plaster board type DF (2x12,5 mm) | 0.250 | 10 | 800 | 1.050 | A2 |

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$ 29.3

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 | | 0.101 | 0.043 | 2,42E-6 | 0.021 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 71.397 | 196.536 | 267.933 | 417.849 | 36.048 | 453.897 |