

External wall - awsopi02a-02

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 |

From outside inwards REI 90; maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 16,8 kN/lfm
 Classified by HFA

| | | |
|----------------------------|-----------|---------------------------|
| Thermal performance | U | 0.08 W/(m ² K) |
| | Diffusion | suitable |

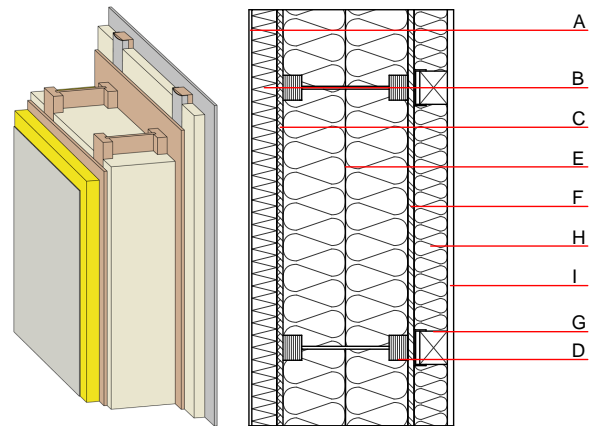
The stated thermal characteristics in the product data sheet are specified for the hard board intermediate web; the flanges are calculated with solid wood.
 Calculated by HFA

| | | |
|-----------------------------|-----------------------------|-------|
| Acoustic performance | R_w (C;C _{tr}) | 54 dB |
| | $L_{n,w}$ (C _i) | |

without resilient clips $R_w \geq 51$ dB
 Assessed by HFA

| | | |
|---------------------------|---|-------------------------|
| Mass per unit area | m | 64.00 kg/m ² |
|---------------------------|---|-------------------------|

Calculation based on gypsum plaster board type DF



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 | 60.0 | mineral wool MW-PT [040; 155] | 0.040 | 1 | 155 | 1.030 | A1 |
| C | 15.0 | fibreboard (MDF) | 0.140 | 11 | 600 | 1.700 | D |
| D | 300.0 | Light composite wood-based beams (I-beams) with solid wood flanges (60/45) and hard board intermediate web ($\geq 6,7$) e=625 | 0.400 | 20 - 30 | 800 | 1.700 | D |
| E | 300.0 | mineral wool [034; 18; <1000°C] | 0.034 | 1 | 18 | 1.030 | A1 |
| F | 15.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| G | 80.0 | spruce wood battens on resilient clips (50/80; e=625) | 0.120 | 50 | 450 | 1.600 | D |
| H | 80.0 | mineral wool [034; 18; <1000°C] | 0.034 | 1 | 18 | 1.030 | A1 |
| I | 15.0 | gypsum plaster board type DF or | 0.250 | 10 | 800 | 1.050 | A2 |
| I | 15.0 | gypsum fibre board | 0.320 | 21 | 1000 | 1.100 | A2 |

Sustainability rating (per m²)

Database ecoinvent

$OI3_{kon}$ 62.2

Calculated with gypsum plaster fire protection board (GKF/DF) and silicate plaster
 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 | | 0.267 | 0.102 | 3,67E-6 | 0.065 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 87.041 | 441.952 | 528.992 | 750.051 | 30.203 | 780.254 |