

External wall - awrhh06a-01

external wall, timber frame construction, ventilated, without dry lining, with cladding, other surface

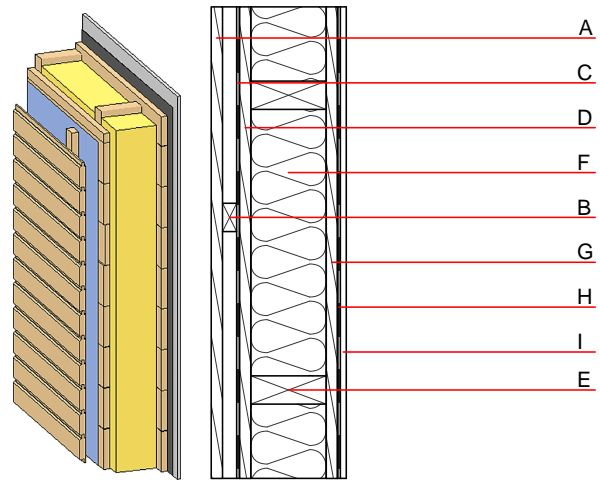
Performance rating

Fire protection performance REI from inside 60
 REI from outside 30
 maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$
 Classified by HFA

Thermal performance U 0.31 $\text{W}/(\text{m}^2\text{K})$
 Diffusion suitable
 Calculated by HFA

Acoustic performance $R_w (C;C_{tr})$ 47(-2;-8) dB
 $L_{n,w} (C_i)$
 Battens for the ventilation space screwed onto the structural timber result in an $R_w(C;C_{tr})=43(-1;-6)$ dB
 Assessed by MA39

Mass per unit area m 42.80 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 | μ min - max | ρ | 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 | 25.0 | planking spruce wood | 0.120 | 50 | 450 | 1.600 | D |
| E | 120.0 | construction timber (60/..; e=*) | 0.120 | 50 | 450 | 1.600 | D |
| F | 120.0 | mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$] | 0.040 | 1 | 16 | 1.030 | A1 |
| G | 25.0 | planking spruce wood | 0.120 | 50 | 450 | 1.600 | D |
| H | | vapour barrier $s_d \geq 5\text{m}$ | | | | 1000 | |
| I | 12.5 | gypsum plaster board type DF or | 0.250 | 10 | 800 | 1.050 | A2 |
| I | 12.5 | gypsum fibre board | 0.320 | 21 | 1000 | 1.100 | A2 |

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 12.4

Calculated by HFA

Details of sustainability rating

Databaseecoinvent

| 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 | | 0.089 | 0.041 | 1,56E-6 | 0.024 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 128.206 | 740.665 | 868.871 | 280.662 | 10.862 | 291.525 |