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Designation: awropo27a-01
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

# External wall - awropo27a-01

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** | 90 |

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

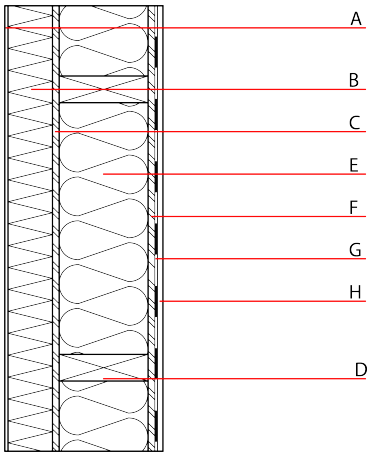
| | | |
|---|---|---|
| **Thermal performance** | **U** | 0.14 W/(m²K) |
| | **Diffusion** | suitable |

Calculated by HFA

| | | |
|---|---|---|
| **Acoustic performance** | **$R_w$ ($C;C_{tr}$)** | 47(-4;-9) dB |
| | **$L_{n,w}$ ($C_I$)** | |

frequency range 50-3500: $C_{50\text{-}3500}$ -8 dB; $C_{tr\ 50\text{-}3500}$ -19 dB
Assessed by HFA

| | | |
|---|---|---|
| **Mass per unit area** | **m** | 60.40 kg/m² |




## 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 |
|---|---|---|---|---|---|---|---|
| | | | λ | μ min – max | ρ | c | EN |
| A | 7.0 | plaster | 1.000 | 10 - 35 | 2000 | 1.130 | A1 |
| B | 100.0 | | 0.040 | 1 | 100 | 1.030 | A1 |
| C | 15.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| D | 200.0 | construction timber (60/200; e=625) | 0.120 | 50 | 450 | 1.600 | D |
| E | 200.0 | Wood fibre insulation [039; 45] | 0.039 | 1 - 2 | 45 | 2.100 | E |
| F | 15.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| G | | vapour barrier sd≥ 14m | | | | | |
| H | 12.5 | gypsum plaster board type DF or | 0.250 | 10 | 800 | 1.050 | A2 |
| H | 12.5 | gypsum fibre board | 0.320 | 21 | 1000 | 1.100 | A2 |

## Sustainability rating (per m²)

**Database ecoinvent**

| | |
|---|---|
| **$OI3_{Kon}$** | 51.0 |

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 | | 0.236 | 0.080 | 2,98E-6 | 0.073 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|---|---|---|---|---|---|---|
| A1 - A3 | 120.711 | 622.935 | 743.646 | 634.105 | 42.486 | 676.592 |