

## External wall - awropi19a-04

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 60  
 maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 32,0 \text{ kN/m}$   
 Classified by HFA

**Thermal performance** U 0.13  $\text{W}/(\text{m}^2\text{K})$   
 Diffusion suitable

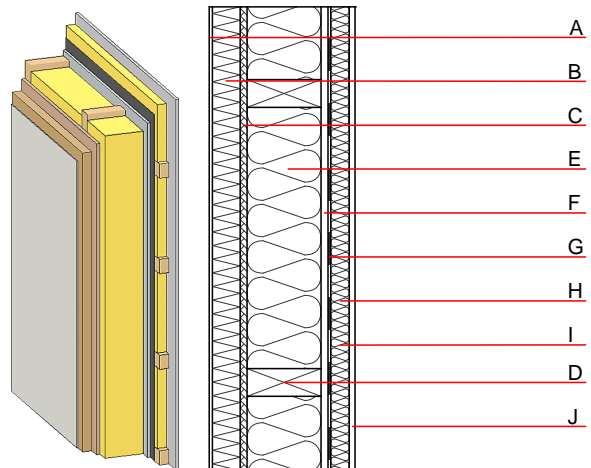
Calculated by HFA

**Acoustic performance**  $R_w (C;C_{tr})$  54(-3;-10) dB  
 $L_{n,w} (C_i)$

Vertical battens for the dry lining screwed onto the ledger beams lead to an  $R_w(C;C_{tr})=51(-1;-7)$  dB  
 Assessed by MA39

**Mass per unit area** m 81.10  $\text{kg}/\text{m}^2$

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
			$\lambda$	$\mu$ min - max	$\rho$	c	
A	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	60.0	wood-fibre insulation board WF-PT [045; 180]	0.045	5 - 7	180	2.100	E
C	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
D	240.0	construction timber (60/...; e=*)	0.120	50	450	1.600	D
E	240.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
F	15.0	gypsum fibre board	0.320	21	1000	1.100	A2
G		vapour barrier $s_d \geq 3\text{m}$				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; $\geq 16$ ; $< 1000^\circ\text{C}$ ] 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 $\text{m}^2$ )

#### Database ecoinvent

$O13_{kon}$  46.1

Calculated by HFA

**Details of sustainability rating**

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO <sub>2</sub> -e.]	AP [kg SO <sub>2</sub> -e.]	EP [kg PO <sub>4</sub> -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.190	0.086	3,70E-6	0.026	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	98.670	622.762	721.432	678.833	46.281	725.114