

## External wall - awropi02a-09

external wall, timber frame construction, not ventilated, with dry lining, with rendering, other surface

### Performance rating

**Fire protection performance**  
REI from inside 45  
REI from outside 30  
maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 19,2 \text{ kN/m}$   
Classified by HFA

**Thermal performance**  
U 0.17 W/(m<sup>2</sup>K)  
Diffusion suitable

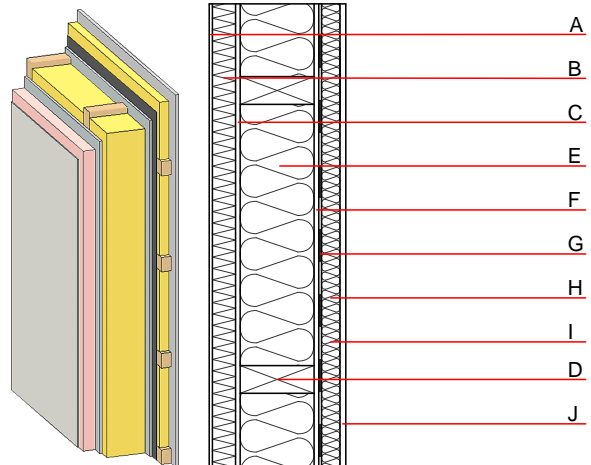
Calculated by HFA

**Acoustic performance**  
 $R_w (C; C_{tr})$  45(-3;-6) dB  
 $L_{n,w} (C_i)$

Vertical battens for the dry lining screwed onto the ledger beams lead to an  $R_w(C; C_{tr})=42(-1;-5) \text{ dB}$   
Assessed by MA39

**Mass per unit area** m 57.80 kg/m<sup>2</sup>

Calculation based on GF



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
			$\lambda$	$\mu \text{ min} - \text{max}$	$\rho$	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	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
D	160.0	construction timber (60/...; e=*)	0.120	50	450	1.600	D
E	160.0	cellulose fibre [0,040; R=55]	0.040	1 - 2	55	2.000	B
F	10.0	gypsum fibre board	0.320	21	1000	1.100	A2
G		vapour barrier sd $\geq$ 13m			1000		
H	40.0	spruce wood cross battens (a=400) or battens offset	0.120	50	450	1.600	D
I	40.0	cellulose fibre [0,040; R=55] or air layer in type 02	0.040	1 - 2	55	2.000	B
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 m<sup>2</sup>)

#### Database ecoinvent

O13<sub>Kon</sub> 21.2

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		0.084	0.033	1,74E-6	0.018	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	47.677	267.449	315.126	298.416	36.048	334.464