

## External wall - awropi17b-09

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 0.17 W/(m<sup>2</sup>K)  
 Diffusion suitable

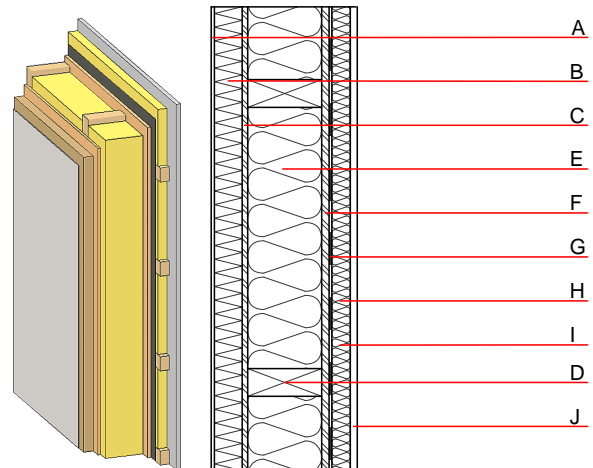
Calculated by HFA

**Acoustic performance**  
 $R_w (C; C_{tr})$  52(-2;-9) dB  
 $L_{n,w} (C_i)$

Vertical battens for the dry lining screwed onto the ledger beams lead to an  $R_w(C; C_{tr})=50(-1;-7) \text{ dB}$   
 Assessed by MA39

**Mass per unit area** m 81.10 kg/m<sup>2</sup>

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
			$\lambda$	$\mu \text{ min} - \text{max}$	$\rho$	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	12.0	OSB	0.130	200	600	1.700	D
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	15.0	OSB	0.130	200	600	1.700	D
G		vapour barrier sd $\geq$ 10m			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 [040; E]	0.040	1 - 2	55	2.000	E
J	15.0	gypsum plaster board type DF or	0.250	10	800	1.050	A2
J	15.0	gypsum fibre board	0.320	21	1000	1.100	A2

### Sustainability rating (per m<sup>2</sup>)

#### Database ecoinvent

O13<sub>Kon</sub> 34.1

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		0.159	0.068	3,00E-6	0.025	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	124.744	777.180	901.924	541.676	49.566	591.241