

## External wall - awropi15b-05

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

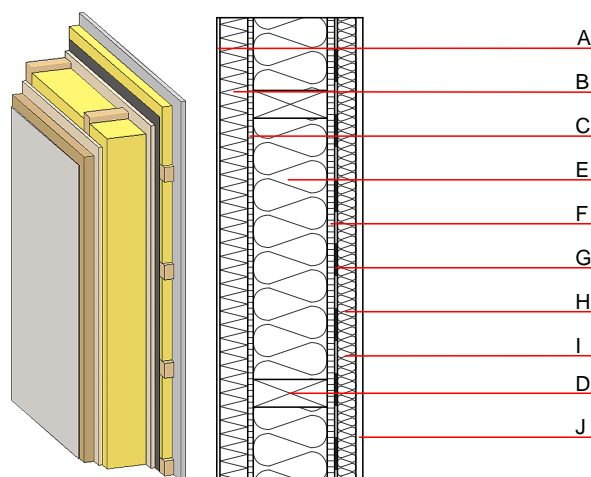
Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$	53(-2;-9) dB
	$L_{n,w} (C_i)$	

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

Mass per unit area	m	81.70 kg/m <sup>2</sup>
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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	particleboard P5	0.130	50 - 100	700	1.700	D
D	200.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
E	200.0	mineral wool [040; $\geq 16$ ; <1000°C]	0.040	1	16	1.030	A1
F	16.0	particleboard P4	0.130	50 - 100	700	1.700	D
G		vapour barrier $s_d \geq 7\text{m}$			1000		
H	80.0	spruce wood cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
I	80.0	mineral wool [040; $\geq 16$ ; <1000°C]	0.040	1	16	1.030	A1
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

OI3 <sub>Kon</sub>	48.7
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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		0.199	0.089	3,73E-6	0.035	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	92.705	771.018	863.722	755.220	73.105	828.325