

## External wall - awropi15b-03

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

### Performance rating

<b>Fire protection performance</b>	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		

<b>Thermal performance</b>	U	0.15 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

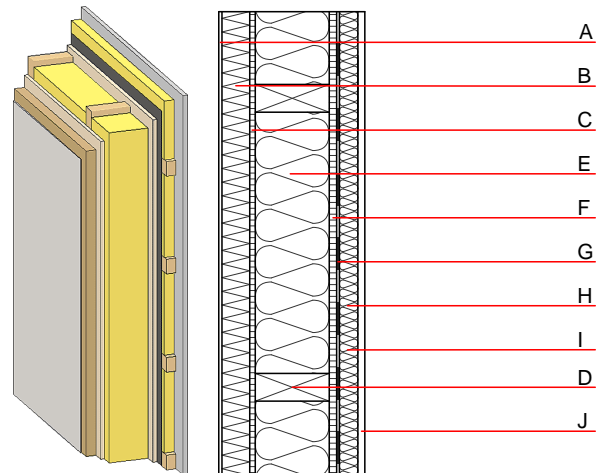
Calculated by HFA

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

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

<b>Mass per unit area</b>	m	78.70 $\text{kg}/\text{m}^2$
---------------------------	---	------------------------------

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	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; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	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	40.0	spruce wood cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
I	40.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	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 $\text{m}^2$ )

#### Database ecoinvent

$OI3_{Kon}$  46.4

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		0.188	0.084	3,53E-6	0.032	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	85.213	730.073	815.286	720.434	73.105	793.539