

## External wall - awropi07a-13

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

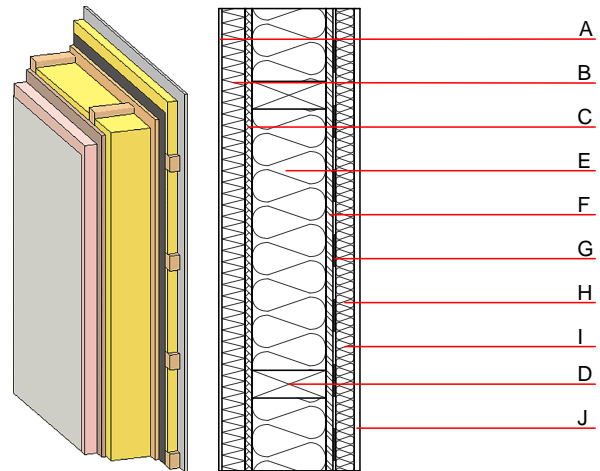
### Performance rating

<b>Fire protection performance</b>	REI from inside	60
	REI from outside	30
maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$ Classified by HFA		

<b>Thermal performance</b>	U	0.17 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable
Calculated by HFA		

<b>Acoustic performance</b>	$R_w (C;C_{tr})$	47(-3;-6) dB
	$L_{n,w} (C_i)$	
vertical battens for the dry lining screwed onto the structural timber lead to an $R_w(C;C_{tr})=44(-1;-5)$ dB Assessed by MA39		

<b>Mass per unit area</b>	m	49.70 $\text{kg}/\text{m}^2$
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	4.0	plaster	1.000	10 - 35	2000	1.130	A1
B	50.0	Elasticized polystyrene FS	0.040	20 - 50	17	1.450	E
C	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
D	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
E	160.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
F	15.0	OSB	0.130	200	600	1.700	D
G		vapour barrier $sd \geq 9\text{m}$				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

$O13_{kon}$	31.8
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		0.131	0.054	2,18E-6	0.026	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	82.725	460.378	543.103	450.865	69.476	520.342