

### External wall - awropi31a-05

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	90
maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$		
Classified by HFA		

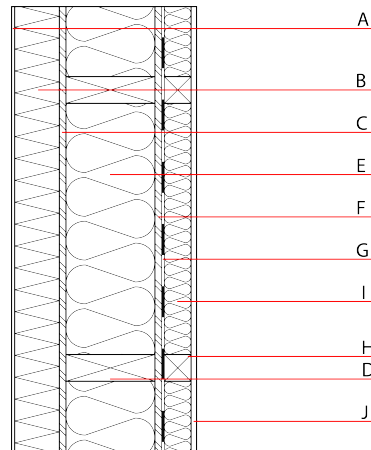
<b>Thermal performance</b>	U	0.13 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

Calculated by HFA

<b>Acoustic performance</b>	$R_w (C;C_{tr})$	51 (-4;-10) dB
	$L_{n,w} (C_i)$	

frequency range 50-3500:  $C_{50-3500} -11 \text{ dB}$ ;  $C_{tr} 50-3500 -23 \text{ dB}$   
 Assessed by HFA

<b>Mass per unit area</b>	m	72.50 $\text{kg}/\text{m}^2$
---------------------------	---	------------------------------



#### 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	100.0		0.040	1	100	1.030	A1
C	15.0	OSB	0.130	200	600	1.700	D
D	200.0	construction timber (60/...; e=625)	0.120	50	450	1.600	D
E	200.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
F	15.0	OSB	0.130	200	600	1.700	D
G		vapour barrier $s_{d} \geq 14\text{m}$					
H	27.0	resilient channel a=625 vertical					
I	27.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
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

$OI3_{kon}$  53.0

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		0.251	0.086	2,98E-6	0.074	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	117.995	598.187	716.182	626.808	30.573	657.381