

## External wall - awropi28a-01

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

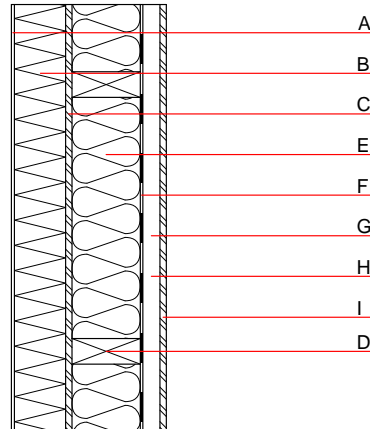
<b>Thermal performance</b>	U	0.27 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

Calculated by HFA

<b>Acoustic performance</b>	$R_w (C; C_{tr})$	48(-3;-10) dB
	$L_{n,w} (C_i)$	

If battens for the dry lining are carried out vertically and screwed to the structural timber the result is  $R_w=45\text{dB}$   
 Assessed by HFA

<b>Mass per unit area</b>	m	51.50 $\text{kg}/\text{m}^2$
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### 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	5.0	plaster	1.000	10 - 35	2000	1.130	A1
B	120.0	MW-PT [038; 95]	0.038		95		A1
C	15.0	OSB	0.130	200	600	1.700	D
D	140.0	construction timber (60/.; e=625)	0.120	50	450	1.600	D
E	140.0	mineral wool [038; $\geq 33$ ; $\geq 1000^\circ\text{C}$ ]	0.038	1	33	1.030	A1
F		vapour barrier $s_d \geq 23\text{m}$			1000		
G	40.0	spruce wood cross battens 40/60mm (a=400)	0.120	50	450	1.600	D
H	40.0	air layer	0.000	1	1	1.008	
I	16.0	Kronospan OSB-Firestop	0.110	150 - 170	660	1.700	B

### Sustainability rating (per $\text{m}^2$ )

Database ecoinvent

$013_{kon}$	56.4
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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		0.269	0.078	2,28E-6	0.100	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	79.128	433.742	512.870	583.012	26.841	609.853