

External wall - awropi27a-04

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

Performance rating

Fire protection performance	REI from inside	30
	REI from outside	30

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

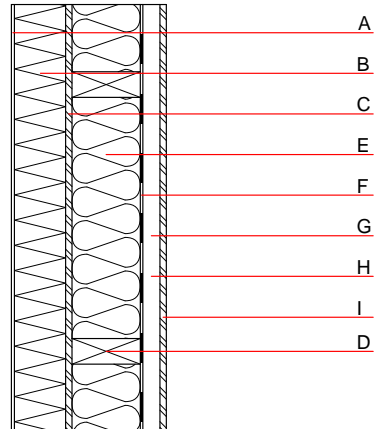
Thermal performance	U	0.16 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

Calculated by HFA

Acoustic performance	$R_w (C;C_{tr})$	44(-3;-6) 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 $R_w \geq 41 \text{ dB}$
 Assessed by HFA

Mass per unit area	m	43.90 kg/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
			λ	μ min - max	ρ	c	
A	4.0	plaster	1.000	10 - 35	2000	1.130	A1
B	120.0	Polystyrene EPS-F [0,040]	0.040	20 - 50	17	1.450	E
C	15.0	OSB	0.130	200	600	1.700	D
D	120.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
E	120.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
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 m^2)

Database ecoinvent

$OI3_{kon}$	30.0
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Calculated by HFA

Details of sustainability rating

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO ₂ -e.]	AP [kg SO ₂ -e.]	EP [kg PO ₄ -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.125	0.042	1,82E-6	0.033	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	73.108	486.347	559.455	399.685	102.986	502.671