

External wall - awropi01 a-03

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

Performance rating

Fire protection performance	REI from inside	60
	REI from outside	30

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 19,2 kN/m
 Classified by HFA

Thermal performance	U	0.15 W/(m ² K)
	Diffusion	suitable

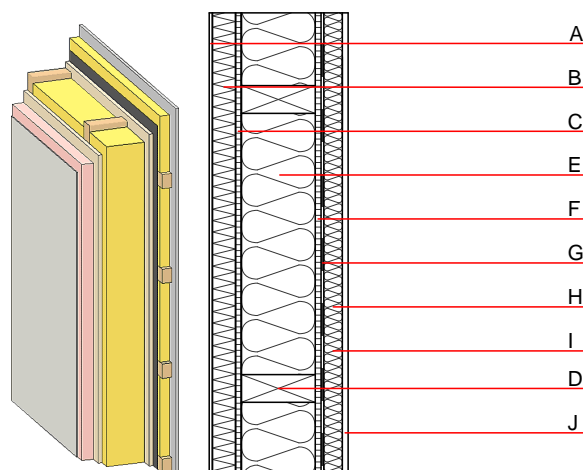
Calculated by HFA

Acoustic performance	R_w (C;C _{tr})	45(-2;-6) dB
	$L_{n,w}$ (C _i)	

Vertical battens for the dry lining screwed onto the ledger beams lead to an $R_w(C;C_{tr})=42(-1;-5)$ dB
 Assessed by MA39

Mass per unit area	m	52.90 kg/m ²
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Calculation based on GF



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
			λ	μ min – max	ρ	c	
A	4.0	plaster	1.000	10 - 35	2000	1.130	A1
B	50.0	Polystyrene EPS-F [0,040]	0.040	20 - 50	17	1.450	E
C	16.0	particleboard	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; ≥16; <1000°C]	0.040	1	16	1.030	A1
F	16.0	particleboard	0.130	50 - 100	700	1.700	D
G		vapour barrier sd≥ 17m			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; ≥16; <1000°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 m²)

Database ecoinvent

013 _{Kon}	35.4
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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		0.137	0.058	2,36E-6	0.031	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	55.876	484.067	539.943	527.300	79.102	606.402