

External wall - awropi03a-06

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 $E_{d,fi} = 19,2 \text{ kN/m}$
 Classified by HFA

Thermal performance	U	0.12 W/(m ² K)
	Diffusion	suitable

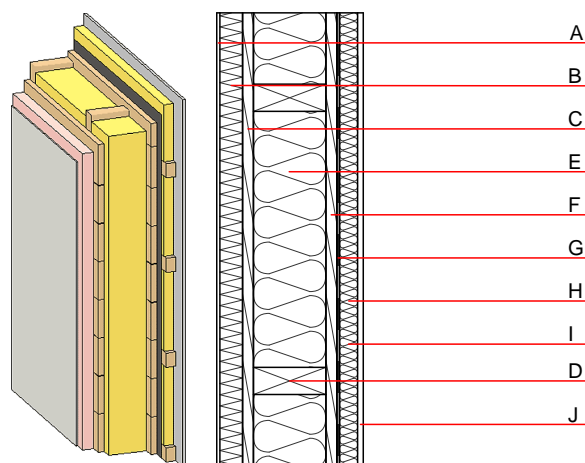
Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$	48(-3;-6) dB
	$L_{n,w} (C_i)$	

vertical battens for the dry lining screwed onto the structural timber lead to an $R_w(C;C_{tr})=45(-1;-5) \text{ dB}$
 Assessed by MA39

Mass per unit area	m	58.90 kg/m ²
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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
			λ	$\mu \text{ min} - \text{max}$	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	25.0	planking spruce wood	0.120	50	450	1.600	D
D	240.0	construction timber (60/...; e=*)	0.120	50	450	1.600	D
E	240.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
F	25.0	planking spruce wood	0.120	50	450	1.600	D
G		vapour barrier sd $\geq 16\text{m}$			1000		
H	80.0	spruce wood cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
I	80.0	mineral wool [040; ≥ 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 m²)

Database ecoinvent

013 _{kon}	30.6
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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		0.149	0.063	2,61E-6	0.035	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	123.592	680.015	803.606	477.789	36.048	513.837