

External wall - awropi19a-08

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	90

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

Thermal performance	U	0.17 W/(m ² K)
	Diffusion	suitable

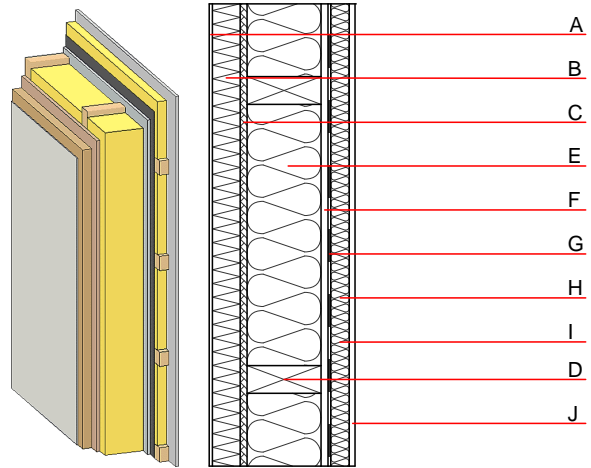
Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$	52(-3;-10) dB
	$L_{n,w} (C_i)$	

Vertical battens for the dry lining screwed onto the ledger beams lead to an $R_w(C; C_{tr})=49(-1;-7) \text{ dB}$
Assessed by MA39

Mass per unit area	m	79.20 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	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	60.0	wood-fibre insulation board WF-PT [045; 180]	0.045	5 - 7	180	2.100	E
C	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
D	160.0	construction timber (60/...; e=*)	0.120	50	450	1.600	D
E	160.0	mineral wool [038; ≥33; ≥1000°C]	0.038	1	33	1.030	A1
F	15.0	gypsum fibre board	0.320	21	1000	1.100	A2
G		vapour barrier $s_d \geq 3 \text{ m}$			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 [038; ≥33; ≥1000°C] or air layer in type 02	0.038	1	33	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

OI3 _{Kon}	46.6
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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		0.202	0.075	2,96E-6	0.053	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	83.507	559.870	643.377	611.699	46.281	657.980