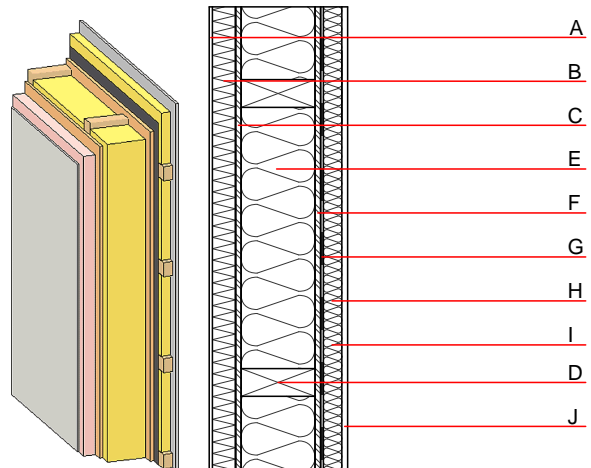


External wall - awropi06a-07

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 $E_{d,fi} = 32,0 \text{ kN/m}$ Classified by HFA		
Thermal performance	U	0.16 W/(m ² K)
	Diffusion	suitable
Calculated by HFA		
Acoustic performance	$R_w (C; C_{tr})$	46(-3;-6) dB
	$L_{n,w} (C_i)$	
vertical battens for the dry lining screwed onto the structural timber lead to an $R_w(C;C_{tr})=43(-1;-5) \text{ dB}$ Assessed by MA39/HFA		
Mass per unit area	m	54.60 kg/m ²
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	15.0	OSB	0.130	200	600	1.700	D
D	160.0	construction timber (60/...; e=625) (60/...; e=*)	0.120	50	450	1.600	D
E	160.0	mineral wool [035; 50; <1000°C]	0.035	1	50	1.030	A1
F	15.0	OSB	0.130	200	600	1.700	D
G		vapour barrier $s_d \geq 23 \text{ m}$			1000		
H	40.0	spruce wood cross battens (a=400) $\geq 40 \text{ mm}$ cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
I	40.0	mineral wool [035; 50; <1000°C] or air layer in type 02	0.035	1	50	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

O13_{Kon} 52.8

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		0.211	0.090	3,75E-6	0.036	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	104.360	430.453	534.813	695.982	57.383	753.365