

External wall - awropi01a-08

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

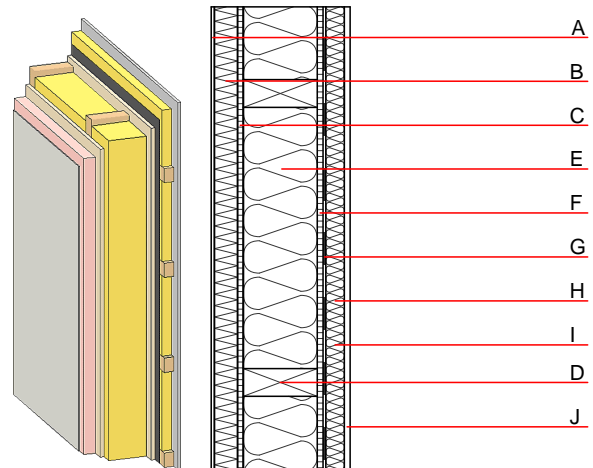
Performance rating

Fire protection performance
 REI from inside 60
 REI from outside 30
 maximum ceiling height = 3 m; maximum load $E_{d,fi} = 19,2 \text{ kN/m}$
 Classified by HFA

Thermal performance
 U 0.17 $\text{W}/(\text{m}^2\text{K})$
 Diffusion suitable
 Calculated by HFA

Acoustic performance
 $R_w (C;C_{tr})$ 44(-2;-6) dB
 $L_{n,w} (C_i)$
 Vertical battens for the dry lining screwed onto the ledger beams lead to an $R_w(C;C_{tr})=41(-1;-5)$ dB
 Assessed by MA39

Mass per unit area m 53.50 kg/m^2
 Calculation based on GF



Note: e=625

Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

Layer	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	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	16.0	particleboard	0.130	50 - 100	700	1.700	D
G		vapour barrier $s_d \geq 17\text{m}$				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 O2	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 m^2)

Database ecoinvent

$OI3_{kon}$ 42.3

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		0.173	0.053	2,00E-6	0.063	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	48.051	452.621	500.672	536.718	92.398	629.116