

External wall - awropi20a-09

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

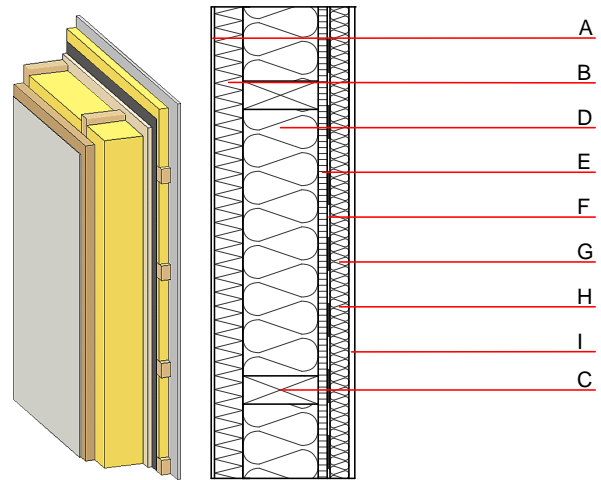
Performance rating

Fire protection performance
 REI from inside 60
 REI from outside 60
 maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$
 Classified by HFA

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

Acoustic performance
 $R_w (C;C_{tr})$ 52(-3;-11) dB
 $L_{n,w} (C_i)$
 vertical battens for the dry lining screwed onto the structural timber lead to an $R_w(C;C_{tr})=50(-2;-8)$ dB
 Assessed by MA39

Mass per unit area m 72.60 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	μ min - 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	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
D	160.0	cellulose fibre [040; E]	0.040	1 - 2	55	2.000	E
E	19.0	particleboard	0.130	50 - 100	700	1.700	D
F		vapour barrier $sd \geq 2\text{m}$			1000		
G	40.0	spruce wood cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
H	40.0	cellulose fibre [040; E] or air layer in type O2	0.040	1 - 2	55	2.000	E
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 33.2

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		0.147	0.064	2,70E-6	0.024	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	78.261	707.454	785.715	533.935	57.446	591.381