

External wall - awropi16b-02

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

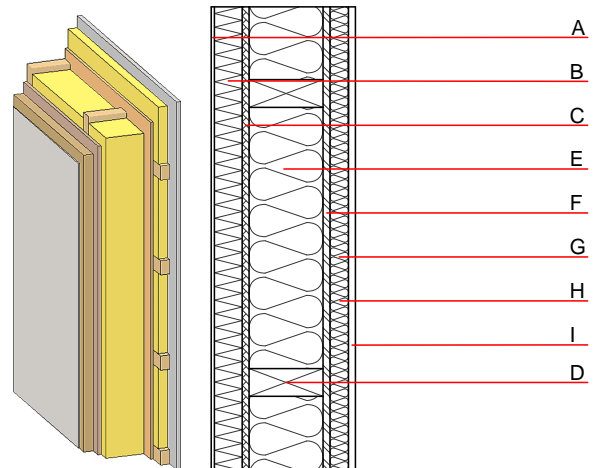
Performance rating

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 0.19 $\text{W}/(\text{m}^2\text{K})$
 Diffusion suitable
 Calculated by HFA

Acoustic performance $R_w (C;C_{tr})$ 51 (-2;-9) dB
 $L_{n,w} (C_i)$
 Vertical battens for the dry lining screwed onto the ledger beams lead to an $R_w(C;C_{tr})=49(-1;-7)$ dB
 Assessed by MA39

Mass per unit area m 74.70 kg/m^2
 Calculation based on gypsum plaster board type DF



Note: e=625 ; H=without insulation

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	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 [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
F	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
G	40.0	spruce wood cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
H		air layer	0.000	1	1	1.008	
I	15.0	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	15.0	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 39.7

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		0.171	0.075	3,18E-6	0.025	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	110.273	706.384	816.657	608.609	58.943	667.552