

External wall - awropo04a-02

external wall, timber frame construction, not ventilated, without dry lining, with rendering, other surface

Performance rating

Fire protection performance	REI from inside	30
	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 W/(m ² K)
	Diffusion	suitable

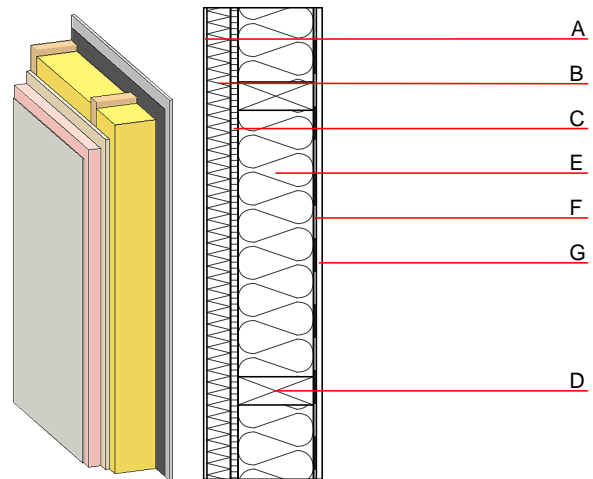
Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$	44(-2;-6) dB
	$L_{n,w} (C_i)$	

Assessed by MA39

Mass per unit area	m	41.40 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	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 P5	0.130	50 - 100	700	1.700	D
D	200.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
E	200.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
F		vapour barrier $s_d \geq 20\text{m}$			1000		
G	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
G	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	29.2
-------------	------

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		0.111	0.046	1,95E-6	0.025	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	44.778	320.596	365.374	415.216	60.650	475.866