

External wall - awrhho05a-01

external wall, timber frame construction, ventilated, without dry lining, with cladding, other surface

Performance rating

Fire protection performance	REI from inside	30
	REI from outside	30
maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 32,0 kN/m		
Classified by MA39		
Classified by HFA		

Thermal performance	U	0.34 W/(m ² K)
	Diffusion	suitable

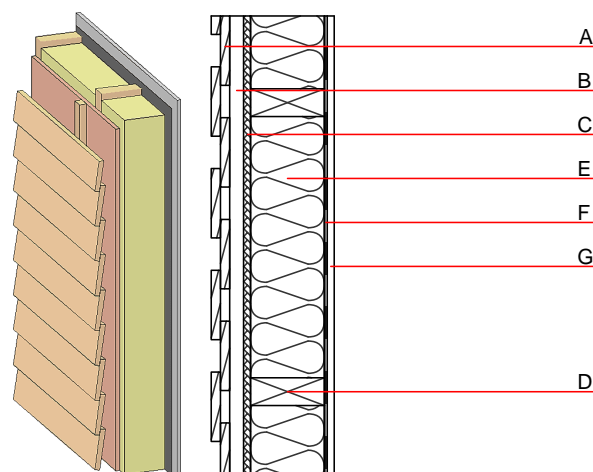
Calculated by HFA

Acoustic performance	R_w (C;C_{tr})	44(-2;-8) dB
	L_{n,w} (C_i)	

Battens for the ventilation space screwed onto the structural timber result in an $R_w(C;C_{tr})=40(-1;-7)$ dB
 Assessed by MA39

Mass per unit area	m	26.60 kg/m ²
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Calculation based on GF



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	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	30.0	spruce wood battens offset (30/50; 30/80) - ventilation	0.120	50	450	1.600	D
C	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
D	120.0	construction timber (60/...; e=625)	0.120	50	450	1.600	D
E	120.0	mineral wool [040; ≥ 16 ; <1000°C]	0.040	1	16	1.030	A1
F		vapour barrier sd ≥ 1 m			1000		
G	15.0	gypsum fibre board or	0.320	21	1000	1.100	A2
G	15.0	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

OI3_{kon}	16.4
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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		0.083	0.037	1,41E-6	0.016	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	90.630	478.351	568.982	286.712	22.510	309.222