

External wall - awrrho05a-02

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	0.22 W/(m ² K)
	Diffusion	suitable

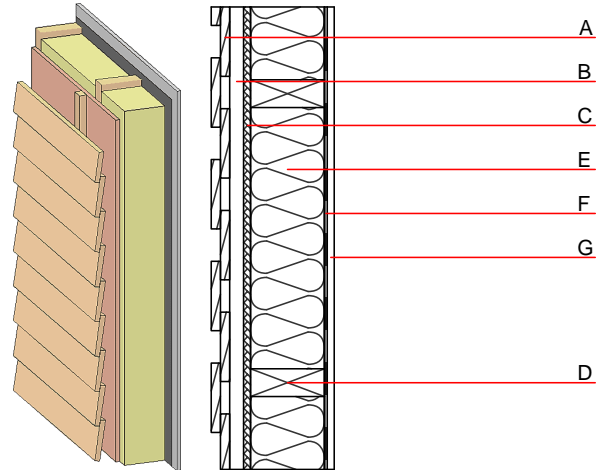
Calculated by HFA

Acoustic performance	R_w (C;C _{tr})	46(-2;-8) dB
	$L_{n,w}$ (C _i)	

Battens for the ventilation space screwed onto the structural timber result in an $R_w(C;C_{tr})=42(-1;-7)$ dB
Assessed by MA39

Mass per unit area	m	31.60 kg/m ²
--------------------	---	-------------------------

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	200.0	construction timber (60/...; e=625)	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 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

013 _{kon}	21.7
--------------------	------

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		0.107	0.048	1,82E-6	0.020	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	104.622	541.243	645.864	359.333	22.510	381.842