

External wall - awroho03a-04

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

Performance rating

Fire protection performance	REI from inside	60
	REI from outside	30

maximum ceiling height = 3 m; maximum load $E_{d,fi} = 32,0 \text{ kN/m}$
 Classified by HFA

Thermal performance	U	0.20 W/(m ² K)
	Diffusion	suitable

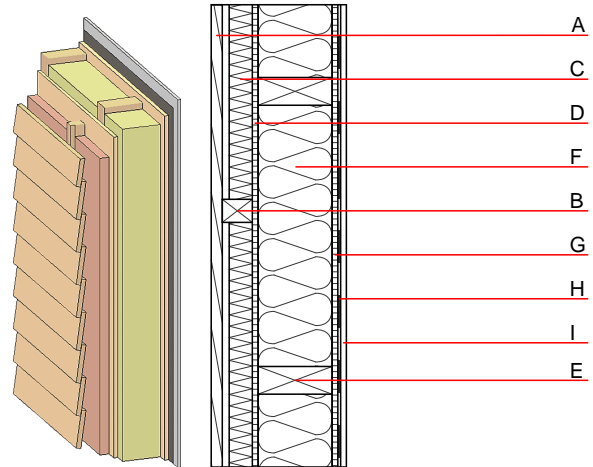
Calculated by HFA

Acoustic performance	$R_w (C;C_{tr})$	51 (-2;-7) dB
	$L_{n,w} (C_i)$	

Vertical external battens screwed onto the ledger beams lead to an $R_w(C;C_{tr})=47(-1;-5) \text{ dB}$
 Assessed by MA39

Mass per unit area	m	71.50 kg/m ²
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Calculation based on GF



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	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	65.0	spruce wood cross battens	0.120	50	450	1.600	D
C	50.0	wood wool composite boards	0.090	2 - 5	370	2.000	B
D	16.0	particleboard	0.130	50 - 100	700	1.700	D
E	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
F	160.0	mineral wool [035; 50; <1000°C]	0.035	1	50	1.030	A1
G	12.0	particleboard	0.130	50 - 100	700	1.700	D
H		vapour barrier sd \geq 10m			1000		
I	12.5	gypsum fibre board or	0.320	21	1000	1.100	A2
I	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$ 43.6

Calculated by HFA

Details of sustainability rating

Databaseecoinvent

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		0.188	0.083	3,39E-6	0.036	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	103.151	729.597	832.749	676.983	41.362	718.345