

External wall - awroho03a-01

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

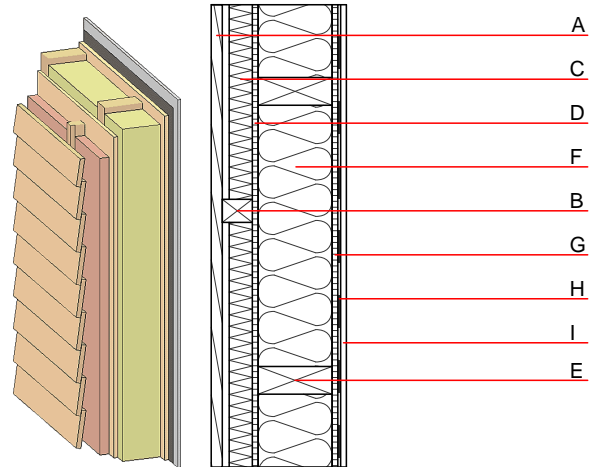
Thermal performance U 0.26 $\text{W}/(\text{m}^2\text{K})$
 Diffusion suitable
 Calculated by HFA

Acoustic performance $R_w (C;C_{tr})$ 49(-2;-7) dB
 $L_{n,w} (C_i)$

Vertical external battens screwed onto the ledger beams lead to an $R_w(C;C_{tr})=45(-1;-5)$ dB
 Assessed by MA39

Mass per unit area m 64.10 kg/m^2

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	120.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
F	120.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
G	12.0	particleboard	0.130	50 - 100	700	1.700	D
H		vapour barrier $s_d \geq 10\text{m}$			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 m^2)

Database ecoinvent

$O13_{kon}$ 22.8

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		0.106	0.045	1,98E-6	0.026

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	86.407	698.152	784.559	429.003	41.362	470.365