

External wall - awmoho01a-02

external wall, solid wood construction, not ventilated, without dry lining, with cladding, other surface

Performance rating

Fire protection performance	REI from inside	60
	REI from outside	60
maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 35,0 kN/m		
Classified by HFA		

Thermal performance	U	0.25 W/(m ² K)
	Diffusion	suitable

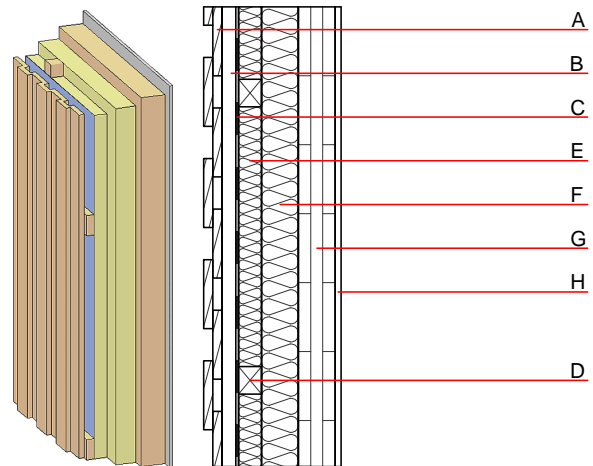
Calculated by HFA

Acoustic performance	R_w (C;C _{tr})	47 dB
	$L_{n,w}$ (C _i)	

$R_w + C_{tr} \geq 38$

Assessed by TU-GRAZ

Mass per unit area	m	59.00 kg/m ²
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Note: When using cross laminated timber:

Variation 02-03: $d \geq 94,0$; at least 3-layers, top layer at least 30mm; variation 00-01: $d \geq 78,0$; at least 3-layers, top layer at least 25mm without gypsum board lining

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	20.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	30.0	spruce wood battens (30/60)	0.120	50	450	1.600	D
C		vapour-permeable membrane $sd \leq 0,3m$					
D	50.0	spruce wood battens (40/50 or 80/60; $e=625$)	0.120	50	450	1.600	D
E	50.0	mineral wool [040; ≥ 70 ; $\geq 1000^\circ C$]	0.040	1	70	1.030	A1
F	80.0	mineral wool [040; ≥ 70 ; $\geq 1000^\circ C$]	0.040	1	70	1.030	A1
G	100.0	solid glued wood (e.g. cross laminated timber)	0.130	50	500	1.600	D
H		without gypsum board lining					

Sustainability rating (per m²)

Database ecoinvent

$O13_{kon}$ 43.8

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		0.238	0.083	2,68E-6	0.091

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	74.426	882.941	957.367	593.867	22.553	616.420