

External wall - awmohi01a-01

external wall, solid wood construction, not ventilated, with dry lining, with cladding, other surface

Performance rating

Fire protection performance	REI from inside	90
	REI from outside	60

maximum ceiling height = 3 m; maximum load $E_{d,fi} = 35,0 \text{ kN/m}$
Classified by HFA

Thermal performance	U	0.17 W/(m ² K)
	Diffusion	suitable

Calculated by HFA

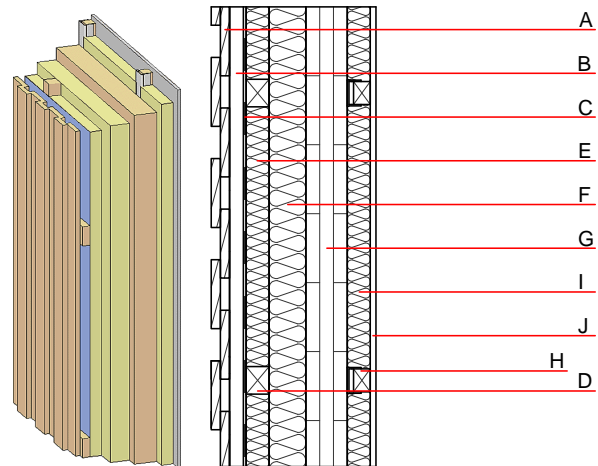
Acoustic performance	$R_w (C; C_{tr})$	51 dB
	$L_{n,w} (C_i)$	

$R_w + C_{tr} \geq 42$

Assessed by TUGRAZ

Mass per unit area	m	75.10 kg/m ²
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Calculation based on gypsum plaster board type DF



Note: When using cross laminated timber:

Variation 00-03: $d \geq 94,0$; at least 3-layers, top layer at least 30mm; variation 04: $d \geq 78,0$; at least 3-layers, top layer at least 25mm

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	$\mu \text{ min} - \text{max}$	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 $s_d \leq 0,3m$					
D	80.0	spruce wood battens (40/50 or 80/60; e=625)	0.120	50	450	1.600	D
E	80.0	mineral wool [040; ≥ 70 ; $\geq 1000^\circ\text{C}$]	0.040	1	70	1.030	A1
F	80.0	mineral wool [040; ≥ 70 ; $\geq 1000^\circ\text{C}$]	0.040	1	70	1.030	A1
G	100.0	cross laminated timber (e.g. cross laminated timber)	0.130	50	500	1.600	D
H	50.0	spruce wood battens (40/50; e=625) mounted on resilient clips	0.120	50	450	1.600	D
I	50.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
J	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
J	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

OI3 _{Kon}	55.1
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$R_w + C_{tr} \geq 42$

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		0.285	0.099	3,37E-6	0.106	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	87.508	932.730	1020.237	726.285	22.553	748.838