

External wall - awmoho05a-01

external wall, solid wood construction, ventilated, without dry lining, with cladding, wooden surface

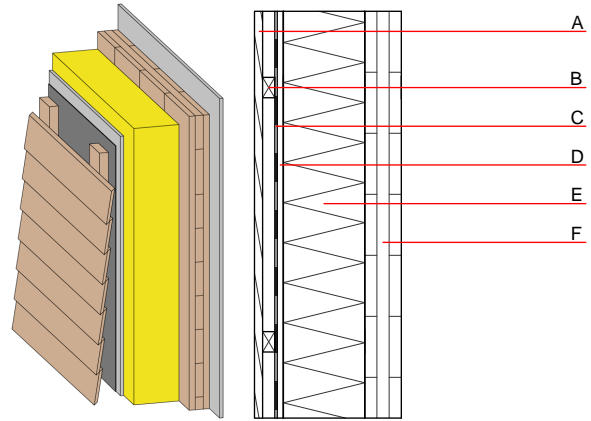
Performance rating

Fire protection performance	REI from inside	60
	REI from outside	90
maximum ceiling height = 3 m; maximum load $E_{d,fi} = 35,0 \text{ kN/m}$ Classified by HFA		

Thermal performance	U	0.15 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable
Calculated by HFA		

Acoustic performance	$R_w (C;C_{tr})$	41 dB
	$L_{n,w} (C_i)$	
with 12,5 mm gypsum plaster board type DF / gypsum fibre board: $R_w \geq 43$ Assessed by TU-GRAZ		

Mass per unit area	m	101.40 kg/m^2
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Note: Cross laminated timber:

Variation 00-01: $d \geq 94,0$; at least 3-layers, top layer at least 30mm; variation 02: $d \geq 85,0$; at least 5-layers, top layer at least 17 mm
 G=without plaster board

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	0.120	50	450	1.600	D
C		vapour-permeable membrane $sd \leq 0,3\text{m}$					
D	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
E	200.0	mineral wool [035; 130; $\geq 1000^\circ\text{C}$]	0.035	1	130	1.030	A1
F	100.0	cross laminated timber	0.130	50	500	1.600	D
G		without gypsum board lining					

Sustainability rating (per m^2)

Database ecoinvent

013_{kon} 86.7

calculated with gypsum plaster fire protection board (GKF/DF); this data includes 3-, 5-, and 7-ply cross laminated timber elements;
 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		0.440	0.124	3,96E-6	0.133	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	95.917	843.634	939.551	916.390	22.553	938.943