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Designation: awmoho05a-01
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

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 kN/m
Classified by HFA

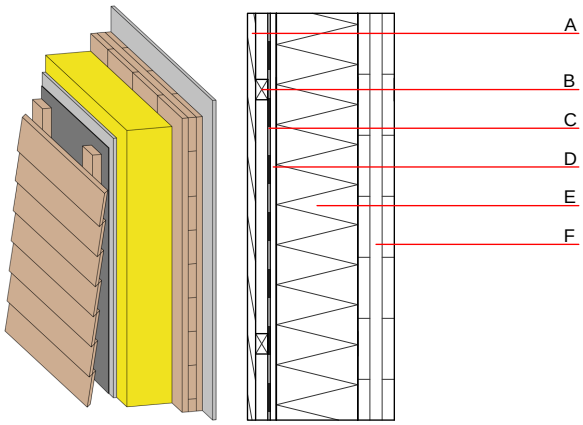
Thermal performance	**U**	0.15 W/(m²K)
	Diffusion	suitable

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/m²



Note: Cross laminated timber:
Variation 00-01: d ≥ 94,0; at least 3-layers, top layer at least 30mm; variation 02: d ≥ 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
			λ	μ min – max	ρ	c	EN
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 ≤ 0,3m					
D	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
E	200.0	mineral wool [035; 130; ≥1000°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 m²)

Database ecoinvent

$OI3_{Kon}$	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