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Designation: awmoho03a-00
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

External wall - awmoho03a-00

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	60

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 35,0 kN/m
Classified by MA39/HFA

Germany

REI 60 (from inside/from outside)

Load $E_{d,fi}$ according to the German certification document

Corresponding proof: manufacturer-specific

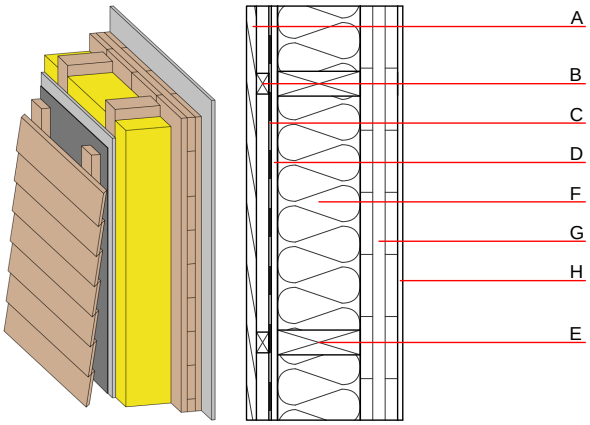
Thermal performance	**U**	0.20 W/(m²K)
	Diffusion	suitable

Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	43(-1;-4) dB
	$L_{n,w}$ (C_I)	

Assessed by TU-GRAZ
Assessed by Müller-BBM

Mass per unit area	**m**	96.10 kg/m²



Note: Cross laminated timber:
Variation 00-02 and 04-06: at least 3-layers, top layer at least 30mm;
variation 03: d ≥ 85,0; at least 5-layers, top layer at least 17 mm

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	24.0	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 ≤ 0,3m					
D	15.0	gypsum fibre board	0.320	21	1000	1.100	A2
E	200.0	construction timber (60/200; e= 625)	0.120	50	450	1.600	D
F	200.0	wood-fibre insulation board [0,039; r>5]	0.039	5 - 7	55	2.100	E
G	100.0	cross laminated timber	0.130	50	500	1.600	D
H		without gypsum board lining					

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	31.5

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	78.200
Biogenic carbon in kg CO_2-e.	**kg CO_2**	112.980
Energy use of Primary Energy	**MJ**	1186.710
Share of renewable PE	**%**	41.10

Calculated by TUM

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		0.180	0.079	3,34E-6	0.053	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	131.528	1226.366	1357.894	626.148	37.588	663.736

Database GaBi (ÖKOBAUDAT)

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		0.136	0.029	2,98E-6	0.029	
C1 - C4		0.003	0.000	1,94E-7	0.000	
A1 - C4		0.140	0.030	3,18E-6	0.030	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	485.380	1625.700	2109.180	662.480	66.890	728.940
C1 - C4	1.840	-1620.580	-1618.740	29.940	-32.080	-2.140
A1 - C4	487.700	5.380	491.170	699.010	34.880	733.460