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External wall - awmopo01a-05

external wall, solid wood construction, not ventilated, without dry lining, with rendering, 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

Germany

REI60 (from inside/from outside)

Load $E_{d,fi}$ according to the German certification document
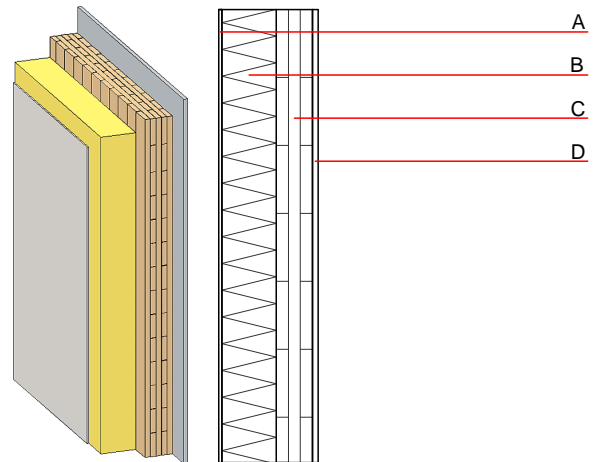
Corresponding proof: manufacturer-specific

Thermal performance	U	0.28 W/(m^{2}K)
	Diffusion	suitable

Calculated by HFA
Calculated by TUM

Acoustic performance	R_w (C;C$_{tr}$)	38(-1;-6) dB
	$L_{n,w}$ (C$_I$)	

Assessed by Müller-BBM

Mass per unit area	m	83.80 kg/m^2

Note: Cross laminated timber:

Variation 00-03: d ≥ 78,0; at least 3-layers, top layer at least 25 mm; variation 04-07: at least 3-layers, top layer at least 30 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	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	120.0	wood-fibre insulation board [045; 190]	0.045	5 - 7	190	2.100	E
C	100.0	solid glued wood (e.g. cross laminated timber)	0.130	50	500	1.600	D
D		without gypsum board lining					

Sustainability rating (per m^2)

Database ecoinvent

OI3$_{Kon}$	40.4

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	73.600
Biogenic carbon in kg CO$_2$-e.	kg CO$_2$	105.750
Energy use of Primary Energy	MJ	822.370
Share of renewable PE	%	40.06

Calculated by TUM

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Designation: awmopo01a-05
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

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Details of sustainability rating

Database ecoinvent

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO_2-e.]	[kg SO_2-e.]	[kg PO_4-e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.199	0.086	3,69E-6	0.048	

Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]
A1 - A3	68.785	1038.249	1107.034	689.844	51.177	741.020

Database GaBi (ÖKOBAUDAT)

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO_2-e.]	[kg SO_2-e.]	[kg PO_4-e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.095	0.020	2,46E-6	0.020	
C1 - C4		0.002	0.000	1,14E-7	0.000	
A1 - C4		0.098	0.021	2,57E-6	0.019	

Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]
A1 - A3	328.250	1082.514	1408.884	474.997	28.984	503.450
C1 - C4	1.201	-1082.514	-1081.149	17.917	-21.224	-1.100
A1 - C4	329.451	0.000	327.939	492.914	7.760	505.720

dataholz.eu – Catalogue of timber building materials, components and component connections reviewed to consider thermal, acoustic, fire performance requirements and ecological drivers for timber construction released by accredited testing institutes.
These datasheets will generally be accepted as proofs of compliance by building authorities.

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