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Designation: awmopo01a-06
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

External wall - awmopo01a-06

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

Performance rating

Fire protection performance	**REI from inside**	90
	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**	0.25 W/(m²K)
	Diffusion	suitable

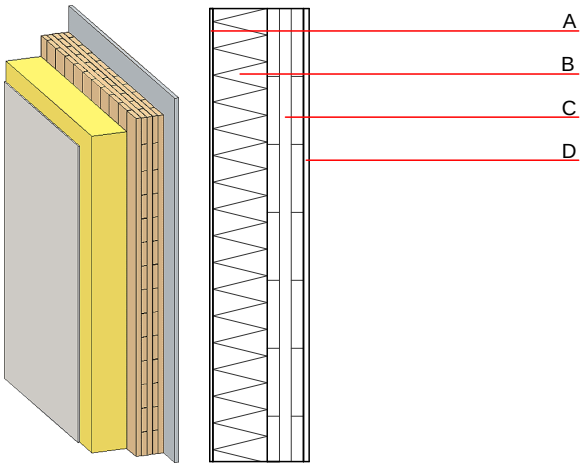
Calculated by HFA
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	39(-1;-6) dB
	$L_{n,w}$ (C_I)	

Rw=37dB if a lightweight ETICS insulation panel (ϱ approx. 90kg/m³) is applied.
Assessed by Müller-BBM

Mass per unit area	**m**	89.60 kg/m²

Calculation based on gypsum plaster board type DF



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	mineral wool MW-PT [040; 155]	0.040	1	155	1.030	A1
C	100.0	solid glued wood (e.g. cross laminated timber)	0.130	50	500	1.600	D
D	12.5	gypsum plaster board type DF / gypsum fibre board	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	71.3

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	46.000
Biogenic carbon in kg CO_2-e.	**kg CO_2**	66.220
Energy use of Primary Energy	**MJ**	754.000
Share of renewable PE	**%**	28.54

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		0.343	0.111	3,77E-6	0.129	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	45.000	684.000	729.000	826.784	17.714	844.498

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		0.188	0.030	2,98E-6	0.018	
C1 - C4		0.004	0.005	1,38E-7	0.001	
A1 - C4		0.196	0.036	3,13E-6	0.019	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	214.155	787.178	999.454	516.855	31.383	547.710
C1 - C4	0.688	-779.260	-778.408	15.993	0.000	18.200
A1 - C4	215.227	8.177	221.892	538.770	31.435	575.260