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Designation: awmopi01a-09
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

External wall - awmopi01a-09

external wall, solid wood construction, not ventilated, with dry lining, with rendering, other 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); Attention: REI 90 (from inside) in Germany possible with 2x12,5mm gypsum plaster board type DF/gypsum fibre board

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

Corresponding proof: manufacturer-specific

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

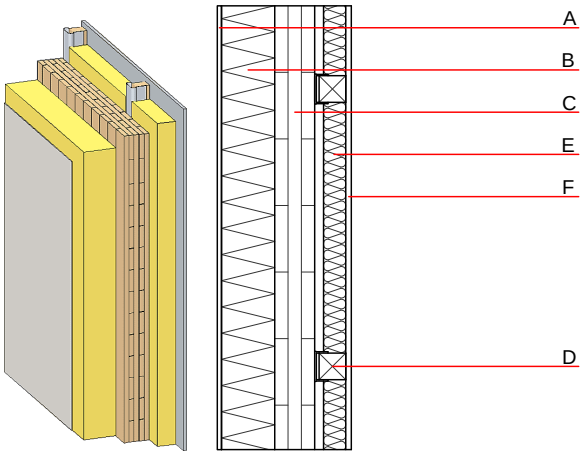
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	51(-3;-9) dB
	$L_{n,w}$ (C_I)	

Rw=49dB if a lightweight ETICS insulation panel (ϱ approx. 90kg/m³) is applied.
Assessed by Müller-BBM

Mass per unit area	**m**	103.40 kg/m²

Calculation based on gypsum plaster board type DF



Note: Attention: REI90 (from inside) in Germany possible with 2x12,5mm gypsum plaster board type DF/gypsum fibre 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	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	180.0	mineral wool MW-PT [040; 155] ETICS insulation panel	0.040	1	155	1.030	A1
C	100.0	cross laminated timber	0.130	50	500	1.600	D
D	70.0	spruce wood battens (60/60) mounted on resilient clips; e=660	0.120	50	450	1.600	D
E	50.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
F	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
F	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	97.2

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	51.830
Biogenic carbon in kg CO_2-e.	**kg CO_2**	74.410
Energy use of Primary Energy	**MJ**	944.330
Share of renewable PE	**%**	26.86

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		0.463	0.145	4,63E-6	0.177	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	60.670	731.169	791.839	1058.762	17.714	1076.476

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		0.271	0.041	3,50E-6	0.024	
C1 - C4		0.006	0.008	1,55E-7	0.001	
A1 - C4		0.280	0.050	3,66E-6	0.025	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	252.382	889.053	1139.225	664.153	45.452	709.060
C1 - C4	0.875	-879.492	-878.453	19.965	0.000	22.170
A1 - C4	253.645	9.820	261.623	690.680	45.504	741.220