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Designation: awmopi01a-02
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

External wall - awmopi01a-02

external wall, solid wood construction, not ventilated, with dry lining, with rendering, Gipsplatte

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**	0.18 W/(m²K)
	Diffusion	suitable

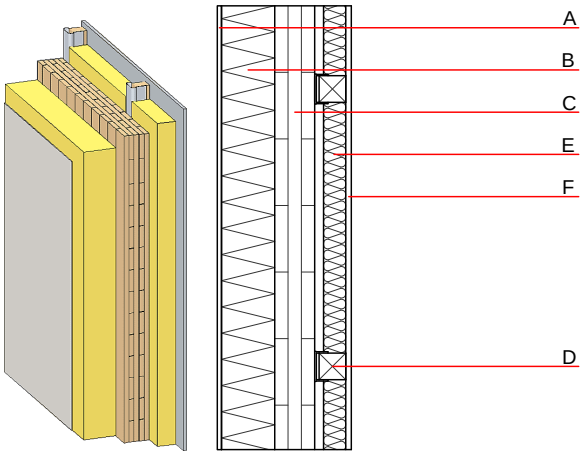
Calculated by HFA
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	50(-3;-9) dB
	$L_{n,w}$ (C_I)	

Rw=48dB if a lightweight ETICS insulation panel (ϱ approx. 90kg/m³) is applied.
Assessed by Müller-BBM

Mass per unit area	**m**	97.40 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	140.0	mineral wool MW-PT [041; 155] ETICS insulation panel	0.041	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; ≥16; <1000°C]	0.040	1	16	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$_{Kon}$	82.3

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	51.830
Biogenic carbon in kg CO_2-e.	**kg CO_2**	74.710
Energy use of Primary Energy	**MJ**	864.810
Share of renewable PE	**%**	28.41

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		0.394	0.127	4,24E-6	0.147	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	56.248	731.169	787.416	936.905	17.714	954.619

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		0.229	0.036	3,30E-6	0.022	
C1 - C4		0.005	0.007	1,53E-7	0.001	
A1 - C4		0.237	0.043	3,46E-6	0.022	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	244.511	888.138	1130.439	594.367	37.891	631.720
C1 - C4	0.803	-879.492	-878.525	18.411	0.000	20.620
A1 - C4	245.701	8.905	252.764	619.109	37.943	662.090