

External wall - awmopo04a-01

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

Performance rating

Fire protection performance REI from inside 30
 REI from outside 60
 maximum ceiling height = 3 m; maximum load $E_{d,fi} = 35 \text{ kN/m}$
 Classified by HFA

Germany

REI 30 (from inside/from outside)
 Load $E_{d,fi}$ according to the German certification document
 Corresponding proof: manufacturer-specific

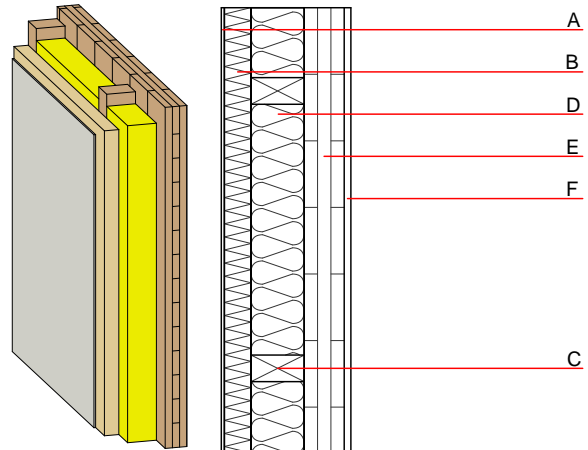
Thermal performance U 0.21 $\text{W}/(\text{m}^2\text{K})$
 Diffusion suitable

Calculated by TUM

Acoustic performance $R_w (C; C_{tr})$ 43(-1;-6) dB
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

Mass per unit area m 81.60 kg/m^2



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 EN
			λ	μ min - max	ρ	c	
A	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	60.0	wood-fibre insulation board [046; 200]	0.046	3 - 7	200	2.100	E
C	120.0	construction timber (60/...; e=625)	0.120	50	450	1.600	D
D	120.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
E	90.0	cross laminated timber	0.130	50	500	1.600	D
F		without gypsum board lining					

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{kon}$ 33.6
 Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 70.580
Biogenic carbon in $\text{kg CO}_2\text{-e}$. kg CO_2 100.300
Energy use of Primary Energy MJ 697.130
Share of renewable PE % 40.54

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		0.178	0.076	3,14E-6	0.043	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	69.429	947.884	1017.313	573.692	32.727	606.419

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		0.087	0.018	2,50E-6	0.017	
C1 - C4		0.004	0.004	1,35E-7	0.000	
A1 - C4		0.092	0.022	2,64E-6	0.017	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	281.681	1085.367	1365.732	397.745	18.129	415.430
C1 - C4	0.904	-995.738	-994.670	16.796	-10.672	8.330
A1 - C4	282.585	89.629	371.267	414.541	7.457	427.130