External wall - awropo09a-17

external wall, timber frame construction, not ventilated, without dry lining, with rendering, other surface

Performance rating

Fire protection performance	REI from inside	60
	REI from outside	60

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 32,0 kN/m

Classified by HFA
Classified by HFA

Germany

F60 (from inside/from outside)

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

Corresponding proof: manufacturer-specific
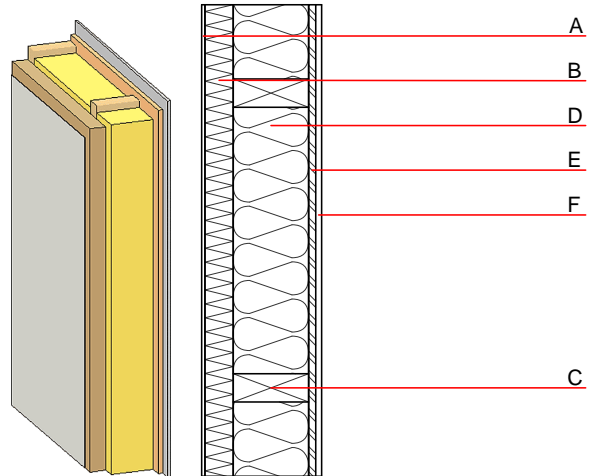
Thermal performance	U	0.15 W/(m^{2}K)
	Diffusion	suitable

Calculated by TUM

Acoustic performance	R_w ($C;C_{tr}$)	52(-3;-11) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	m	65.90 kg/m^2

Calculation based on gypsum plaster board type DF

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	60.0	wood-fibre insulation board WF-PT [045; 180]	0.045	5 - 7	180	2.100	E
C	240.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
D	240.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
E	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
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 m^2)

Database ecoinvent

OI3$_{Kon}$	33.6

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	46.090
Biogenic carbon in kg CO$_2$-e.	kg CO$_2$	67.340
Energy use of Primary Energy	MJ	1109.570
Share of renewable PE	%	37.57

Calculated by TUM

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dataholz.eu

Designation: awropo09a-17
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

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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		0.148	0.066	3,03E-6	0.024	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	115.734	759.106	874.840	556.986	51.418	608.404

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		0.124	0.026	6,28E-7	0.032	
C1 - C4		0.003	0.000	5,15E-8	0.000	
A1 - C4		0.129	0.027	6,87E-7	0.032	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	414.170	1056.725	1471.816	660.911	57.019	718.040
C1 - C4	2.270	-1051.503	-1049.069	26.607	-55.426	-26.620
A1 - C4	416.819	5.481	423.588	692.747	1.645	700.060

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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