External wall - awropo22b-05

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

Performance rating

Fire protection	**REI from inside**	60
performance	**REI from outside**	90

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 32,0 kN/m
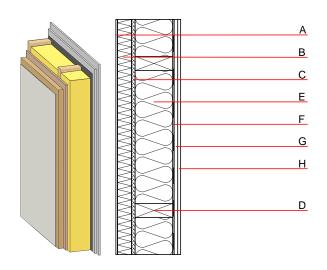
Classified by MA39
Classified by HFA

Germany

F60 (from inside/from outside)

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

Corresponding proof: manufacturer-specific

Thermal performance	**U**	0.19 W/(m²K)
	Diffusion	suitable

Calculated by TUM

Acoustic performance	**R_w (C;C$_{tr}$)**	51(-2;-8) dB
	$L_{n,w}$ (C_I)	

Assessed by MA39
Assessed by Müller-BBM

Mass per unit area	**m**	71.70 kg/m²

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 [055; 200]	0.055	5 - 7	200	2.100	E
C	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
D	160.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
E	160.0	mineral wool [040; 33; ≥1000°C]	0.040	1	33	1.030	A1
F		vapour barrier sd≥ 3m			1000		
G	15.0	gypsum fibre board	0.320	21	1000	1.100	A2
H	12.5	gypsum fibre board or	0.320	21	1000	1.100	A2
H	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

OI3$_{Kon}$	44.0

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	32.430
Biogenic carbon in kg CO$_2$-e.	**kg CO$_2$**	45.850
Energy use of Primary Energy	**MJ**	603.810
Share of renewable PE	**%**	28.67

Calculated by TUM

dataholz.eu

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		0.190	0.068	2,90E-6	0.045	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	120.832	450.044	570.876	570.268	39.775	610.042

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		0.100	0.019	1,37E-6	0.015	
C1 - C4		0.004	0.002	8,48E-8	0.000	
A1 - C4		0.108	0.022	1,47E-6	0.016	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	171.611	464.546	637.072	403.493	43.268	446.840
C1 - C4	0.657	-454.141	-453.320	14.525	-25.692	-8.960
A1 - C4	173.131	10.924	185.338	430.675	17.693	454.020

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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