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Designation: awropo22b-15
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

External wall - awropo22b-15

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 kN/m
Classified by HFA
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Germany

F60 (from inside/from outside)

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

Corresponding proof: manufacturer-specific

Thermal performance	**U**	0.14 W/(m²K)
	Diffusion	suitable

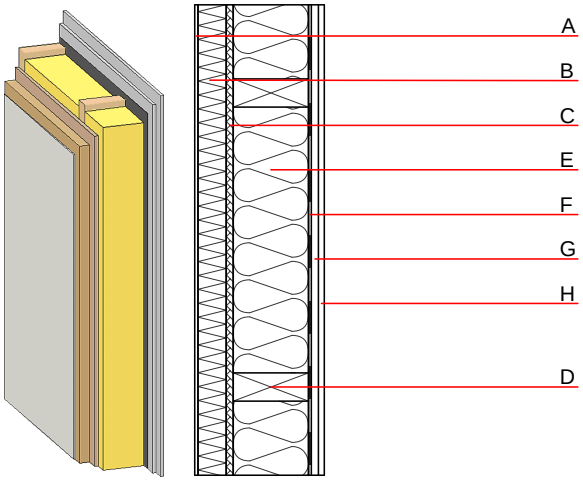
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	53(-2;-8) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	**m**	76.90 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	240.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
E	240.0	mineral wool [040; 30; ≥1000°C]	0.040	1	30	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

$OI3_{Kon}$	46.0

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	36.220
Biogenic carbon in kg CO_2-e.	**kg CO_2**	51.370
Energy use of Primary Energy	**MJ**	676.180
Share of renewable PE	**%**	28.72

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		0.203	0.073	3,02E-6	0.050	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	132.649	512.935	645.584	598.792	39.775	638.567

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	0.022	1,59E-6	0.017	
C1 - C4		0.004	0.003	9,48E-8	0.001	
A1 - C4		0.133	0.026	1,70E-6	0.018	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	192.612	530.332	724.165	452.928	46.856	499.890
C1 - C4	0.726	-519.482	-518.591	15.976	-25.732	-7.550
A1 - C4	194.204	11.368	207.162	481.977	21.240	508.910