External wall - awrhho05a-13

external wall, timber frame construction, ventilated, without dry lining, with cladding, other surface

Performance rating

Fire protection	REI from inside	30
performance	REI from outside	30

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

Germany

F30 (from inside/from outside)

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

Corresponding proof: manufacturer-specific

Thermal performance	U	0.18 W/(m^{2}K)
	Diffusion	suitable

Calculated by TUM

Acoustic performance	R_w (C;C$_{tr}$)	47(-2;-8) dB
	$L_{n,w}$ (C$_l$)	

Assessed by Müller-BBM

Mass per unit area	m	56.60 kg/m^2

Calculation based on gypsum plaster board type DF
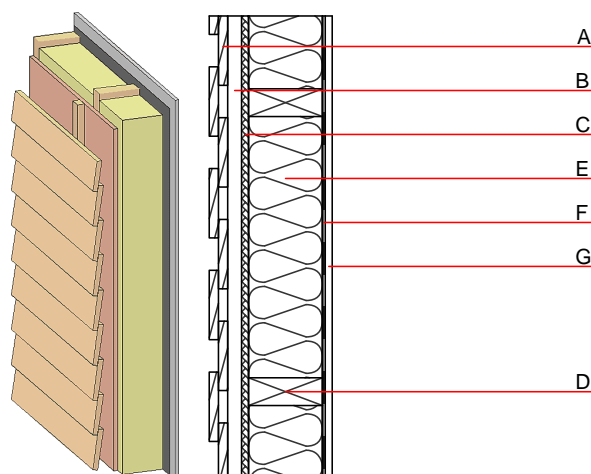
Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

	Thickness	Building material	Thermal performance				Reaction to fire
			λ	μ min – max	ρ	c	EN
A	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	30.0	spruce wood battens offset (30/50; 30/80) - ventilation	0.120	50	450	1.600	D
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	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
F		vapour barrier sd≥ 1m			1000		
G	15.0	gypsum fibre board or	0.320	21	1000	1.100	A2
G	15.0	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

OI3$_{Kon}$	18.0

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	47.140
Biogenic carbon in kg CO$_2$-e.	kg CO$_2$	67.390
Energy use of Primary Energy	MJ	1001.520
Share of renewable PE	%	39.73

Calculated by TUM

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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dataholz.eu

Details of sustainability rating

Database ecoinvent

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO$_2$-e.]	[kg SO$_2$-e.]	[kg PO$_4$-e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.098	0.044	1,73E-6	0.021	

Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]
A1 - A3	123.450	750.600	874.051	360.459	39.316	399.775

Database GaBi (ÖKOBAUDAT)

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO$_2$-e.]	[kg SO$_2$-e.]	[kg PO$_4$-e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.114	0.025	1,56E-6	0.026	
C1 - C4		0.002	0.000	1,05E-7	0.000	
A1 - C4		0.118	0.026	1,68E-6	0.027	

Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]
A1 - A3	395.708	1141.496	1537.633	571.378	62.380	633.870
C1 - C4	1.713	-1137.202	-1135.488	25.652	-53.493	-27.840
A1 - C4	397.899	4.554	402.882	603.622	8.951	612.680