External wall - awrhho07a-10

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

Performance rating

Fire protection performance	REI from inside	60
	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

F60 (from inside/from outside)

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

Corresponding proof: manufacturer-specific

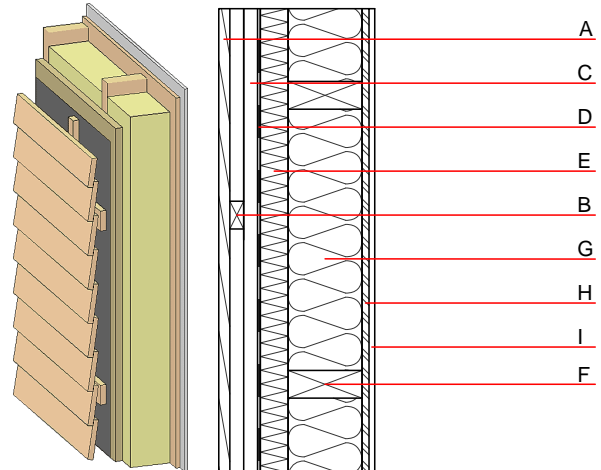| Thermal performance	U	0.17 W/(m^{2}K)
	Diffusion	suitable

Calculated by TUM

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

Assessed by Müller-BBM

Mass per unit area	m	59.40 kg/m^2

Calculation based on gypsum plaster board type DF

Note: According to OIB-RL 2 (Austria) is for ventilated and insulated facades (from building class 2) an insulation material with minimum Euroclass D required.

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 - ventilation	0.120	50	450	1.600	D
C	30.0	spruce wood cross battens	0.120	50	450	1.600	D
D		wind barrier			1000		
E	60.0	wood-fibre insulation board [045; 140]	0.045	2 - 5	140	2.100	E
F	200.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
G	200.0	mineral wool [040; 30; ≥1000°C]	0.040	1	30	1.030	A1
H	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

OI3$_{Kon}$	29.1

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	46.220
Biogenic carbon in kg CO$_2$-e.	kg CO$_2$	67.880
Energy use of Primary Energy	MJ	651.180
Share of renewable PE	%	33.28

Calculated by TUM

dataholz.eu

Designation: awrhho07a-10
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

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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		0.152	0.057	2,02E-6	0.048	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	123.746	688.197	811.942	428.049	29.328	457.376

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		0.115	0.019	8,60E-7	0.023	
C1 - C4		0.002	0.002	8,03E-8	0.000	
A1 - C4		0.119	0.022	9,49E-7	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	215.231	717.891	933.026	413.829	53.362	467.280
C1 - C4	1.099	-711.708	-710.610	14.364	-17.032	-2.670
A1 - C4	216.717	6.442	223.062	434.466	36.382	470.940