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Designation: awrhho07a-12
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

External wall - awrhho07a-12

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
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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**	0.16 W/(m²K)
	Diffusion	suitable

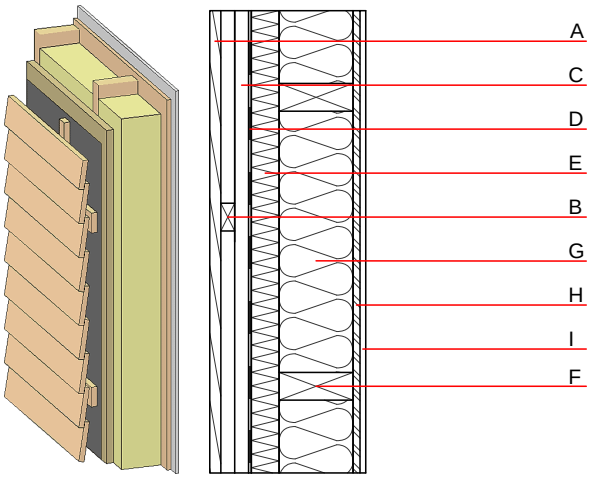
Calculated by TUM

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**	62.10 kg/m²

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	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
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 m²)

Database ecoinvent

$OI3_{Kon}$	22.6

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	56.160
Biogenic carbon in kg CO_2-e.	**kg CO_2**	82.120
Energy use of Primary Energy	**MJ**	1064.690
Share of renewable PE	**%**	39.00

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		0.118	0.054	2,25E-6	0.025	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	136.205	836.456	972.661	431.794	43.333	475.127

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		0.120	0.025	7,38E-7	0.032	
C1 - C4		0.002	0.000	8,06E-8	0.000	
A1 - C4		0.123	0.026	8,26E-7	0.032	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	412.652	1173.722	1586.278	618.052	76.472	694.620
C1 - C4	2.159	-1168.611	-1166.453	26.217	-49.010	-22.790
A1 - C4	415.190	5.370	420.463	649.498	27.514	677.100