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Designation: awrhhi12a-00
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

External wall - awrhhi12a-00

external wall, timber frame construction, ventilated, with dry lining, with cladding, other surface

Performance rating

Fire protection performance	**REI from inside**	30
	REI from outside	30

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

Germany

F30 (from inside/from outside)

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

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.7, Zeile 1

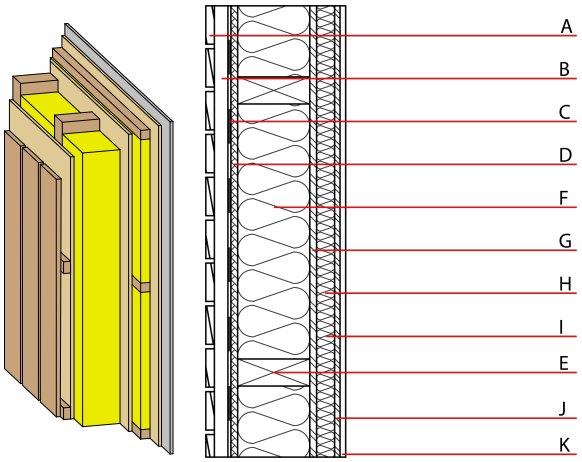
Thermal performance	**U**	0.20 W/(m^2K)
	Diffusion	suitable

Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	52(-1;-6) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	**m**	64.70 kg/m^2



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	larch wood battens offset (30/50; 30/80) - ventilation	0.155	150	600	1.600	D
C		wind barrier			1000		
D	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
E	160.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
F	160.0	mineral wool [040; 30; ≥1000°C]	0.040	1	30	1.030	A1
G	15.0	OSB	0.130	200	600	1.700	D
H	40.0	spruce wood cross battens (a=400) ≥ 40mm	0.120	50	450	1.600	D
I	40.0	mineral wool [040; 30; ≥1000°C]	0.040	1	30	1.030	A1
J	12.0	OSB	0.130	200	600	1.700	D
K	12.5	gypsum plaster board type A	0.250	4 - 10	680	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{Kon}$	32.5

Calculated by TUM

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	51.990
Biogenic carbon in kg CO_2-e.	**kg CO_2**	76.180
Energy use of Primary Energy	**MJ**	747.820
Share of renewable PE	**%**	29.37

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		0.166	0.065	2,51E-6	0.008	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	124.841	802.730	927.571	512.138	48.370	560.507

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		0.132	0.022	1,74E-6	0.033	
C1 - C4		0.002	0.002	1,01E-7	0.000	
A1 - C4		0.136	0.025	1,85E-6	0.033	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	218.099	884.371	1102.323	509.368	36.995	546.440
C1 - C4	1.115	-878.964	-877.851	12.493	-26.457	-13.960
A1 - C4	219.601	5.666	225.118	528.219	10.590	538.880