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Designation: awrhhi12a-01
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

External wall - awrhhi12a-01

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: manufacturer-specific

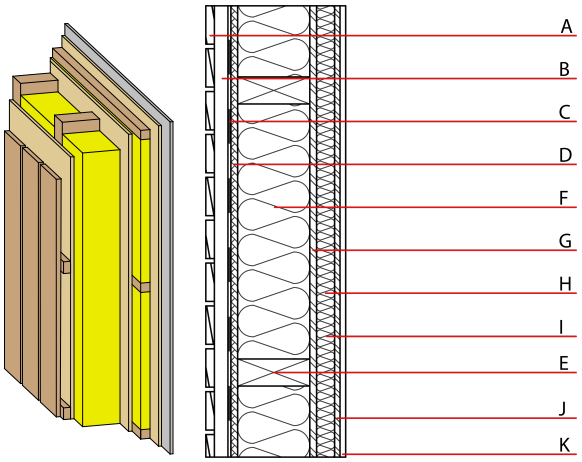
Thermal performance	**U**	0.20 W/(m²K)
	Diffusion	suitable

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**	68.30 kg/m²



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	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
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	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
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 m²)

Database ecoinvent

$OI3_{Kon}$	25.0

Calculated by TUM

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	64.700
Biogenic carbon in kg CO_2-e.	**kg CO_2**	92.110
Energy use of Primary Energy	**MJ**	675.640
Share of renewable PE	**%**	32.71

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		0.151	0.056	2,09E-6	0.008	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	128.639	902.890	1031.529	432.720	48.370	481.090

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		0.091	0.017	1,50E-6	0.030	
C1 - C4		0.006	0.007	1,23E-7	0.001	
A1 - C4		0.098	0.025	1,63E-6	0.031	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	219.544	1044.809	1264.250	433.974	27.399	461.450
C1 - C4	1.109	-878.964	-877.857	15.408	-26.457	-11.050
A1 - C4	221.033	166.104	387.032	454.612	0.994	455.680