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External wall - awrhhi11a-04

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 $E_{d,fi}$ = 19,2 kN/m
Classified by HFA

Germany

F30 (from inside/from outside)

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

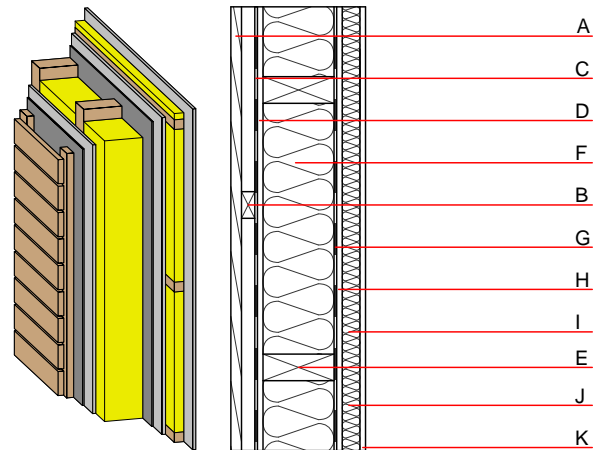Corresponding proof: manufacturer-specific

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

Calculated by TUM

Acoustic performance	R_w (C;C$_{tr}$)	59(-1;-6) dB
	$L_{n,w}$ (C$_I$)	

Assessed by Müller-BBM

Mass per unit area	m	67.80 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	spruce wood battens offset (30/50; 30/80) - ventilation	0.120	50	450	1.600	D
C		wind barrier			1000		
D	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
E	200.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
F	200.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
G		vapour barrier sd≥ 5m			1000		
H	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2
I	40.0	spruce wood cross battens (a=400) ≥ 40mm	0.120	50	450	1.600	D
J	40.0	Cellulose fibre [040; 50] ≥40mm	0.040	1	50	2.000	E
K	12.5	gypsum plaster board type A	0.250	4 - 10	680	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

OI3$_{Kon}$	19.6

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	41.680
Biogenic carbon in kg CO$_2$-e.	kg CO$_2$	57.770
Energy use of Primary Energy	MJ	380.750
Share of renewable PE	%	36.72

Calculated by TUM

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Designation: awrhhi11a-04
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

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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		0.108	0.046	2,08E-6	0.006	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	82.086	565.218	647.303	345.551	10.862	356.413

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		0.057	0.011	6,08E-7	0.009	
C1 - C4		0.008	0.009	1,55E-7	0.001	
A1 - C4		0.069	0.021	7,85E-7	0.010	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	138.232	666.679	804.668	206.849	37.146	244.090
C1 - C4	0.448	-459.777	-459.330	18.392	-0.100	18.290
A1 - C4	139.817	207.679	347.253	240.929	37.202	278.220

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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