

External wall - awrhh11a-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

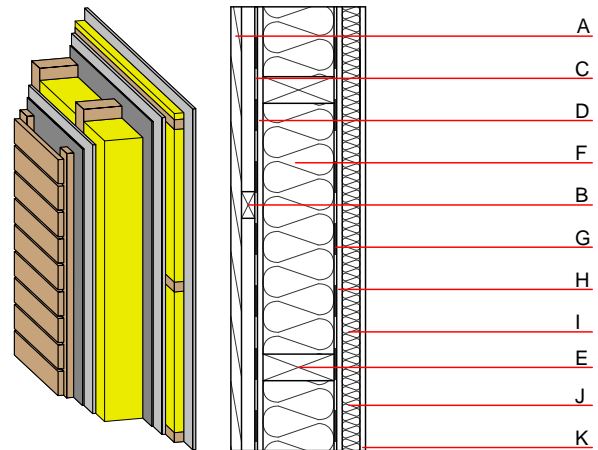
Thermal performance U 0.18 W/(m²K)
Diffusion suitable

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/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 EN
			λ	μ min – max	ρ	c	
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 \geq 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) \geq 40mm	0.120	50	450	1.600	D
J	40.0	Cellulose fibre [040; 50] \geq 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 m²)

Database ecoinvent

OI3_{Kon} 19.6

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 41.680
Biogenic carbon in kg CO₂-e. kg CO₂ 57.770
Energy use of Primary Energy MJ 380.750
Share of renewable PE % 36.72

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		0.108	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