

External wall - awrhho01a-10

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
 Classified by HFA

Germany

F60 (from inside)/F30 (from outside)
 Load $E_{d,fi}$ according to the German certification document
 Corresponding proof: manufacturer-specific

Thermal performance U 0.25 W/(m²K)
 Diffusion suitable

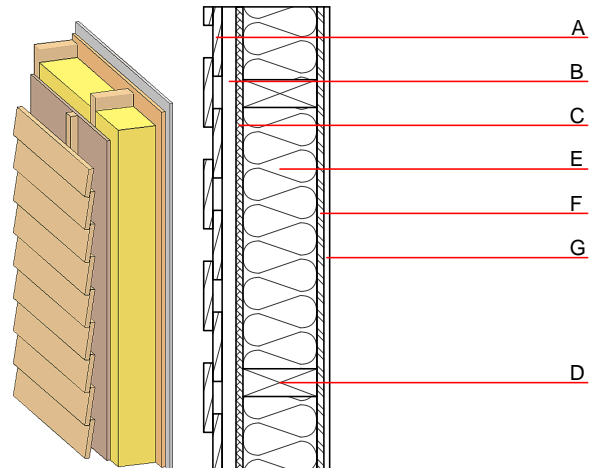
Calculated by TUM

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 60.40 kg/m²

Calculation based on gypsum plaster board type DF



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	15.0	fibreboard (MDF)	0.140	11	600	1.700	D	
D	160.0	construction timber (60/-; e=625)	0.120	50	450	1.600	D	
E	160.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E	
F	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D	
G	15.0	gypsum plaster board type DF or	0.250	10	800	1.050	A2	
G	15.0	gypsum fibre board	0.320	21	1000	1.100	A2	

Sustainability rating (per m²)

Database ecoinvent

OI3_{Kon} 15.7

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 49.830
 Biogenic carbon in kg CO₂-e. kg CO₂ 70.460
 Energy use of Primary Energy MJ 525.210
 Share of renewable PE % 32.99

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		0.098	0.041	1,54E-6	0.020	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	116.898	737.408	854.305	307.591	28.891	336.482

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		0.068	0.014	1,38E-6	0.021	
C1 - C4		0.005	0.005	1,11E-7	0.001	
A1 - C4		0.075	0.020	1,50E-6	0.022	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	172.026	802.898	975.078	332.227	22.590	354.890
C1 - C4	0.748	-679.146	-678.399	13.136	-21.400	-8.260
A1 - C4	173.252	124.010	297.416	351.955	1.250	353.280