

External wall - awrhho07a-15

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 $E_{d,fi} = 32,0 \text{ kN/m}$
 Classified by HFA
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Germany

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

Thermal performance U 0.14 W/(m²K)
 Diffusion suitable

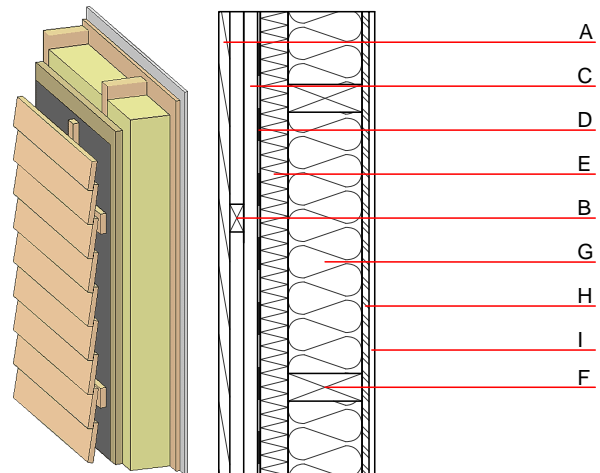
Calculated by TUM

Acoustic performance $R_w (C;C_{tr})$ 48(-2;-8) dB
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

Mass per unit area m 65.40 kg/m²

Calculation based on gypsum plaster board type DF



Note: According to OIB-RL 2 (Austria) is for ventilated and insulated facades (from building class 2) an insulation material with minimum Euroclass D required.

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 - ventilation	0.120	50	450	1.600	D
C	30.0	spruce wood cross battens	0.120	50	450	1.600	D
D		wind barrier			1000		
E	60.0	wood-fibre insulation board [045; 140]	0.045	2 - 5	140	2.100	E
F	240.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
G	240.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
H	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

OI3_{Kon} 24.2

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 60.040
 Biogenic carbon in kg CO₂-e. kg CO₂ 87.730
 Energy use of Primary Energy MJ 1183.580
 Share of renewable PE % 39.32

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		0.127	0.058	2,41E-6	0.027	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	145.173	897.554	1042.727	462.240	46.134	508.374

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		0.133	0.028	8,23E-7	0.035	
C1 - C4		0.002	0.000	8,56E-8	0.000	
A1 - C4		0.136	0.029	9,15E-7	0.035	
Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	462.636	1297.781	1760.475	683.614	82.888	766.610
C1 - C4	2.405	-1292.662	-1290.257	29.313	-55.426	-26.110
A1 - C4	465.421	5.378	470.856	718.156	27.514	745.780