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Designation: awrhhi12a-07
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

External wall - awrhhi12a-07

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

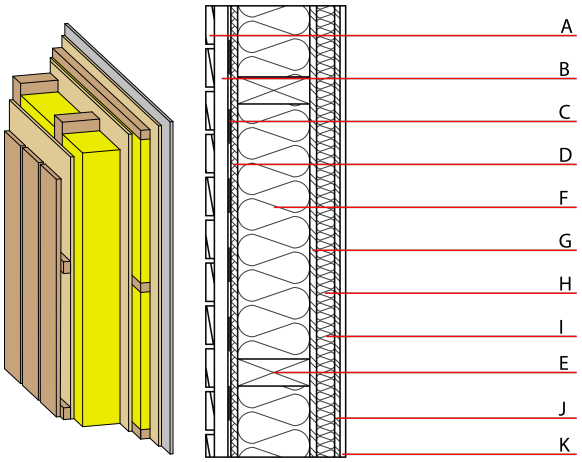
Thermal performance	**U**	0.15 W/(m²K)
	Diffusion	suitable

Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	54(-1;-6) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	**m**	75.30 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	240.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
F	240.0	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

$OI3_{Kon}$	27.4

Calculated by TUM

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	73.190
Biogenic carbon in kg CO_2-e.	**kg CO_2**	103.530
Energy use of Primary Energy	**MJ**	721.340
Share of renewable PE	**%**	33.64

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		0.169	0.064	2,32E-6	0.009	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	135.801	1006.549	1142.350	473.863	48.370	522.233

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		0.099	0.019	1,63E-6	0.032	
C1 - C4		0.007	0.010	1,40E-7	0.001	
A1 - C4		0.108	0.029	1,77E-6	0.033	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	241.079	1169.902	1411.201	455.539	27.439	483.090
C1 - C4	1.177	-944.305	-943.130	17.937	-26.497	-8.560
A1 - C4	242.635	225.856	468.709	478.705	0.994	479.810