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Designation: awrhho05b-06
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

External wall - awrhho05b-06

external wall, timber frame construction, ventilated, without dry lining, with cladding, gypsum plasterboard

Performance rating

Fire protection performance	**REI from inside**	60
	REI from outside	30

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 25,0 kN/m
Classified by HFA

Thermal performance	**U**	0.27 W/(m²K)
	Diffusion	suitable

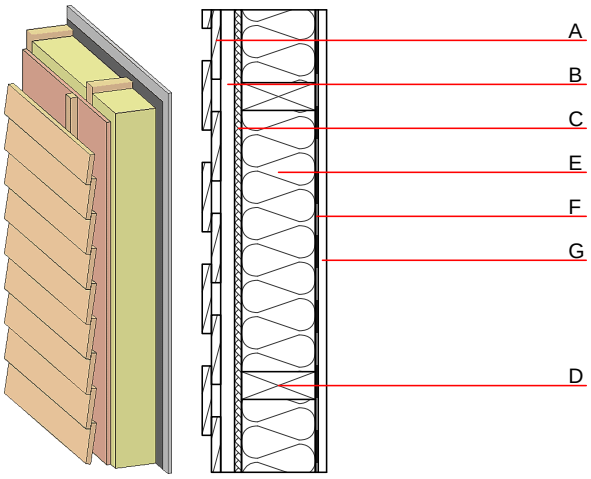
Calculated by HFA

Acoustic performance	**R_w ($C;C_{tr}$)**	45(-2;-8) dB
	$L_{n,w}$ (C_I)	

Battens for the ventilation space screwed onto the structural timber result in an Rw(C;Ctr)=41(-1;-7) dB
Assessed by MA39

Mass per unit area	**m**	34.70 kg/m²

Calculation based on GF



Note: e=625

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	0.120	50	450	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=*)	0.120	50	450	1.600	D
E	160.0	cellulose fibre [040; E]	0.040	1 - 2	55	2.000	E
F		vapour barrier sd≥ 1m			1000		
G	18.0	gypsum fibre board or	0.320	21	1000	1.100	A2
G	18.0	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	14.2

Calculated by HFA

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		0.084	0.036	1,35E-6	0.016	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	103.379	590.894	694.273	269.180	22.510	291.690