External wall - awrhho04b-03

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	60

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 50,0 kN/m
Classified by MA39
Classified by HFA

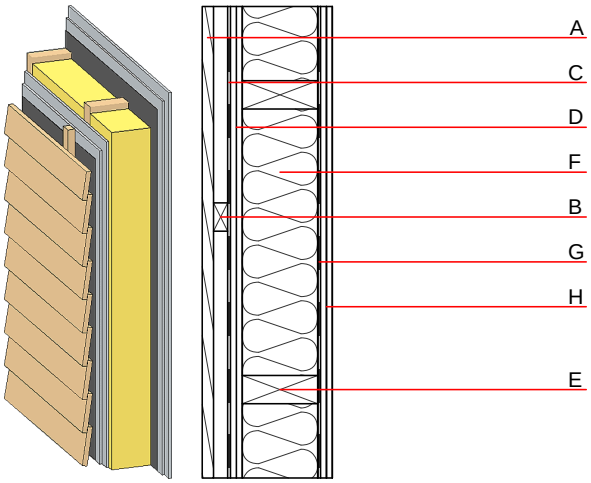
Thermal performance	**U**	0.19 W/(m²K)
	Diffusion	suitable

Acoustic performance	**R_w ($C;C_{tr}$)**	50(-2;-7) dB
	$L_{n,w}$ (C_I)	

Battens for the ventilation space screwed onto the structural timber result in an Rw(C;Ctr)=46(-1;-6) dB
Assessed by MA39

Mass per unit area	**m**	55.40 kg/m²

Calculation based on GF



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		wind barrier			1000		
D	25.0	gypsum fibre board (2x... mm)	0.320	21	1000	1.100	A2
E	240.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
F	240.0	mineral wool [040; ≥16; <1000°C]	0.040	1	16	1.030	A1
G		vapour barrier sd≥ 2m			1000		
H	25.0	gypsum fibre board (2x... mm) or	0.320	21	1000	1.100	A2
H	25.0	gypsum plaster board type DF (2x... mm)	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

$OI3_{Kon}$	30.1

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		0.124	0.058	2,82E-6	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	114.152	425.552	539.704	473.815	10.862	484.677