

External wall - awrhho04b-07

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		

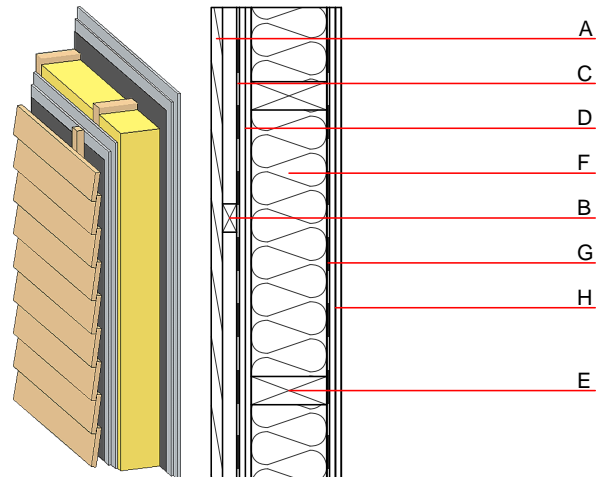
Thermal performance	U	0.30 W/(m ² K)
	Diffusion	suitable

Acoustic performance	R_w (C;C _{tr})	48(-2;-7) dB
	$L_{n,w}$ (C _i)	

Battens for the ventilation space screwed onto the structural timber result in an $R_w(C;C_{tr})=44(-1;-6)$ dB
 Assessed by MA39

Mass per unit area	m	50.40 kg/m ²
---------------------------	---	-------------------------

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 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 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	160.0	construction timber (60/...; e=625)	0.120	50	450	1.600	D
F	160.0	sheep wool [0,041; R=26]	0.041	1	30	1.720	E
G		vapour barrier $s_d \geq 2m$				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

013_{kon} 19.9

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		0.076	0.036	2,30E-6	0.017	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	97.245	451.451	548.696	365.129	11.730	376.859