

External wall - awrho06a-06

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

Thermal performance	U	0.25 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

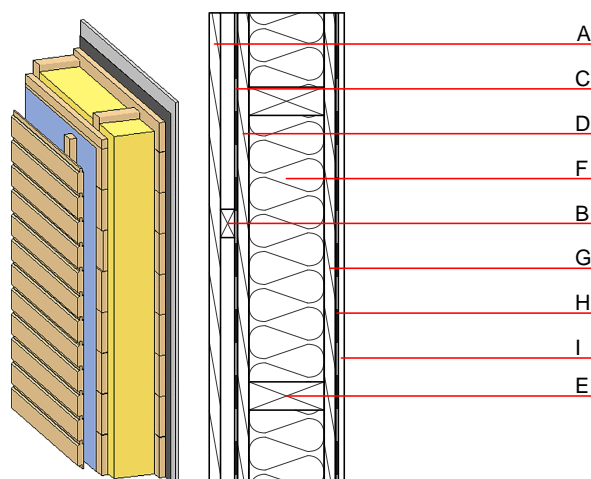
Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$	48(-2;-8) 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	53.80 kg/m^2
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Calculation based on gypsum plaster board type DF



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 EN
			λ	$\mu \text{ min} - \text{max}$	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	planking spruce wood	0.120	50	450	1.600	D
E	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
F	160.0	cellulose fibre [0,040; R=55]	0.040	1 - 2	55	2.000	B
G	25.0	planking spruce wood	0.120	50	450	1.600	D
H		vapour barrier sd \geq 5m			1000		
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 m^2)

Database ecoinvent

013 _{kon}	9.5
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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		0.088	0.039	1,43E-6	0.024	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	138.067	853.208	991.275	251.602	10.862	262.464