

External wall - awrhh01a-01

external wall, timber frame construction, ventilated, with dry lining, with cladding, other surface

Performance rating

Fire protection performance	REI from inside	45
	REI from outside	30
maximum ceiling height = 3 m; maximum load $E_{d,fi} = 19,2 \text{ kN/m}$ Classified by HFA		

Thermal performance	U	0.27 W/(m ² K)
	Diffusion	suitable

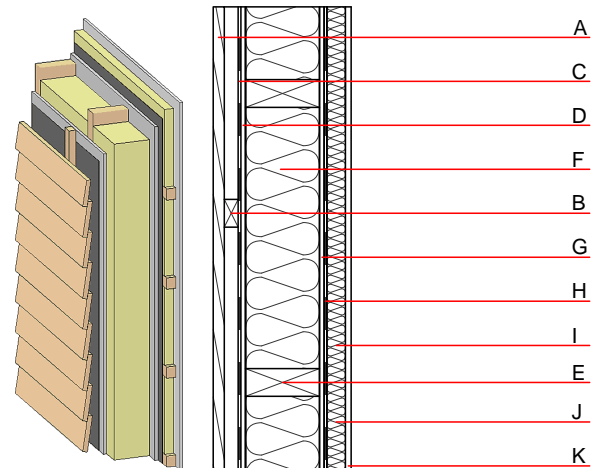
Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$	49(-2;-9) dB
	$L_{n,w} (C_i)$	

Battens for the ventilation space screwed onto the structural timber together with vertical battens for the dry lining screwed directly onto the ledger beams will result in $R_w(C;C_{tr})=43(-1;-5)$ dB
Assessed by MA39

Mass per unit area	m	40.90 kg/m ²
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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 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	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
E	120.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
F	120.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
G	10.0	gypsum fibre board	0.320	21	1000	1.100	A2
H		vapour barrier $s_d \geq 2\text{m}$			1000		
I	40.0	spruce wood cross battens (a=400) or battens offset	0.120	50	450	1.600	D
J	40.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
K	12.5	gypsum fibre board or	0.320	21	1000	1.100	A2
K	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m²)

Database ecoinvent

OL3 _{Kon}	19.8
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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	0.041	1,92E-6	0.018	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	78.901	380.349	459.250	325.044	10.862	335.907