

External wall - awrhh07a-02

external wall, timber frame construction, ventilated, with 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 $E_{d,fi} = 19,2 \text{ kN/m}$
 Classified by HFA

Thermal performance	U	0.22 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

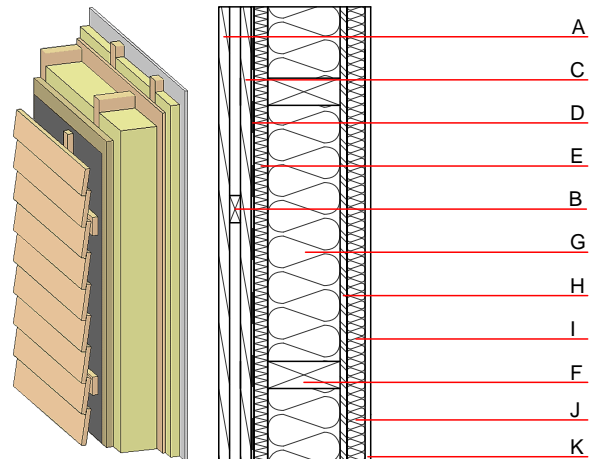
Calculated by HFA

Acoustic performance	$R_w (C;C_{tr})$	49(-3;-10) 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 $R_w(C;Ctr)=42(-1;-5)$ dB
 Assessed by MA39

Mass per unit area	m	39.90 kg/m^2
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Calculation based on CF



Note: e=625; J =without insulation

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	24.0	spruce wood battens - ventilation	0.120	50	450	1.600	D
C	24.0	spruce wood cross battens	0.120	50	450	1.600	D
D		wind barrier				1000	
E	60.0	wood-fibre insulation board [045; 140]	0.045	2 - 5	140	2.100	E
F	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
G	160.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
H	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
I	40.0	spruce wood cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
J	40.0	air layer	0.000	1		1.008	
K	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
K	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{Kon}$ 22.4

Calculated by HFA

Details of sustainability rating

Databaseecoinvent

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		0.118	0.052	2,11E-6	0.007	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	86.576	642.349	728.925	382.967	25.028	407.995