

## External wall - awrohi03a-02

external wall, timber frame construction, not 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  $E_{d,fi} = 32,0 \text{ kN/m}$   
Classified by HFA

Thermal performance	U	0.21 W/(m <sup>2</sup> K)
	Diffusion	suitable

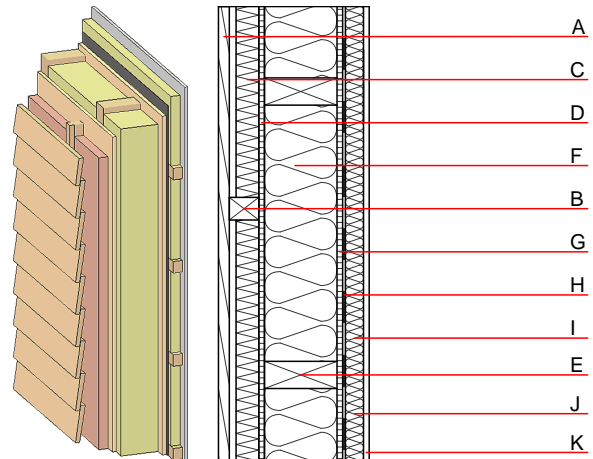
Calculated by HFA

Acoustic performance	$R_w (C; C_{tr})$	49(-3;-9) dB
	$L_{n,w} (C_i)$	

Vertical external battens and vertical battens for the dry lining screwed onto the ledger beams lead to an  $R_w(C;C_{tr})=42(-1;-5)$  dB  
Assessed by MA39

Mass per unit area	m	69.20 kg/m <sup>2</sup>
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Calculation based on GF



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
			$\lambda$	$\mu$ min – max	$\rho$	c	
A	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	65.0	spruce wood cross battens of battens offset	0.120	50	450	1.600	D
C	50.0	wood wool composite boards	0.090	2 - 5	370	2.000	B
D	16.0	particleboard	0.130	50 - 100	700	1.700	D
E	160.0	construction timber (60/...; e=*)	0.120	50	450	1.600	D
F	160.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
G	12.0	particleboard	0.130	50 - 100	700	1.700	D
H		vapour barrier $s_d \geq 10\text{m}$			1000		
I	40.0	spruce wood cross battens (a=400) or battens offset	0.120	50	450	1.600	D
J	40.0	air layer	0.000	1	1	1.008	
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 m<sup>2</sup>)

#### Database ecoinvent

OI3 <sub>Kon</sub>	22.7
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Calculated by HFA

## Details of sustainability rating

### Database ecoinvent

Lifecycle (Phases)	GWP [kg CO <sub>2</sub> -e.]	AP [kg SO <sub>2</sub> -e.]	EP [kg PO <sub>4</sub> -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.109	0.046	2,02E-6	0.027	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	93.804	747.286	841.090	436.173	41.362	477.535