

### External wall - awrhh01a-00

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

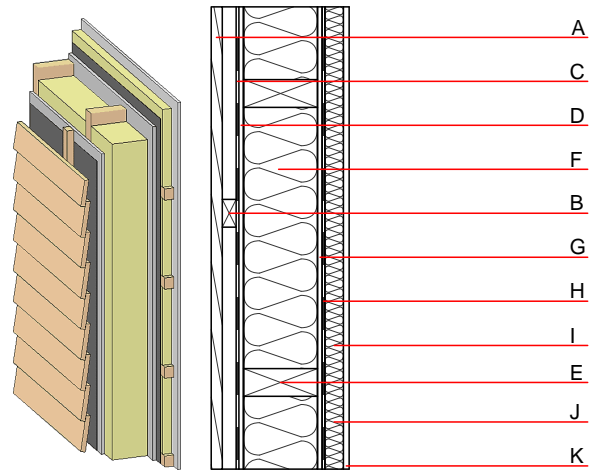
Calculated by HFA

**Acoustic performance**  $R_w (C;C_{tr})$  50(-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  $R_w(C;Ctr)=43(-1;-5)$  dB  
 Assessed by MA39

**Mass per unit area** m 43.60  $\text{kg}/\text{m}^2$

Calculation based on CF



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
			$\lambda$	$\mu$ min – max	$\rho$	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	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	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; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	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 $\text{m}^2$ )

##### Database ecoinvent

$OI3_{Kon}$  22.5

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		0.100	0.047	2,13E-6	0.020	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	85.897	411.795	497.692	361.355	10.862	372.217