

## External wall - awrhh13a-01

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

### Performance rating

<b>Fire protection performance</b>	<b>REI from inside</b>	60
	<b>REI from outside</b>	30

maximum ceiling height = 3 m; maximum load  $E_{d,fi}$  = 32 kN/m  
 Classified by HFA

<b>Thermal performance</b>	<b>U</b>	0.17 W/(m <sup>2</sup> K)
	<b>Diffusion</b>	suitable

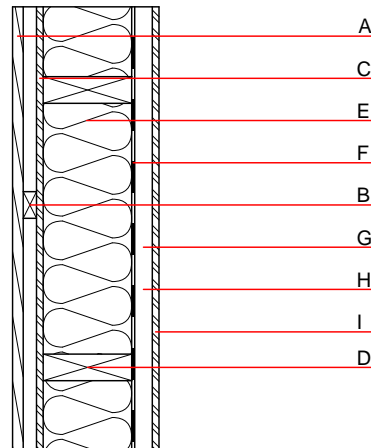
Calculated by HFA

<b>Acoustic performance</b>	<b>R<sub>w</sub> (C;C<sub>tr</sub>)</b>	49(-3;-10) dB
	<b>L<sub>n,w</sub> (C<sub>i</sub>)</b>	

If the battens of the ventilation level are screwed to the structural timber and the battens for the dry lining carried out vertically and screwed to the structural timber the result is  $R_w \geq 42$  dB

Assessed by HFA

<b>Mass per unit area</b>	<b>m</b>	56.80 kg/m <sup>2</sup>
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### 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	15.0	OSB	0.130	200	600	1.700	D
D	240.0	construction timber (60/...; e=625)	0.120	50	450	1.600	D
E	240.0	mineral wool [038; $\geq 33$ ; $\geq 1000^\circ\text{C}$ ]	0.038	1	33	1.030	A1
F		vapour barrier sd $\geq 4$ m			1000		
G	40.0	spruce wood cross battens 40/60mm (a=400)	0.120	50	450	1.600	D
H	40.0	air layer	0.000	1	1	1.008	
I	16.0	Kronospan OSB-Firestop	0.110	150 - 170	660	1.700	B

### Sustainability rating (per m<sup>2</sup>)

#### Database ecoinvent

<b>OI3<sub>kon</sub></b>	32.0
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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		0.181	0.059	1,81E-6	0.067	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	87.726	787.782	875.508	435.881	29.581	465.462