

## External wall - awrhh04a-10

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

### Performance rating

<b>Fire protection performance</b>	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 MA39  
 Classified by HFA

<b>Thermal performance</b>	U	0.23 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

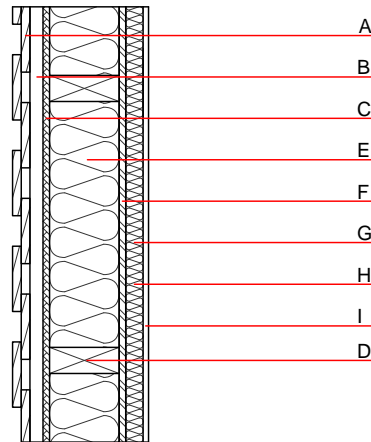
Calculated by HFA

<b>Acoustic performance</b>	$R_w$ (C;C <sub>tr</sub> )	50(-3;-10) dB
	$L_{n,w}$ (C <sub>i</sub> )	

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  $R_w(C;C_{tr})=43(-1;-5)$   
 Assessed by MA39

<b>Mass per unit area</b>	m	41.80 $\text{kg}/\text{m}^2$
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Calculation based on gypsum plaster board type DF



### 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	fibreboard (MDF)	0.140	11	600	1.700	D
D	160.0	construction timber (60/...; e=625)	0.120	50	450	1.600	D
E	160.0	sheep wool [0,041; R=26]	0.041	1	30	1.720	E
F	15.0	OSB	0.130	200	600	1.700	D
G	40.0	spruce wood cross battens (a=400) resp. battens offset	0.120	50	450	1.600	D
H	40.0	sheep wool [0,041; R=26]	0.041	1	30	1.720	E
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

### Sustainability rating (per $\text{m}^2$ )

#### Database ecoinvent

<b>O13<sub>Kon</sub></b>	16.5
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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		0.092	0.040	1,83E-6	0.022	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	118.470	806.758	925.228	348.109	29.882	377.990