

## External wall - awrhh04a-10

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

### Performance rating

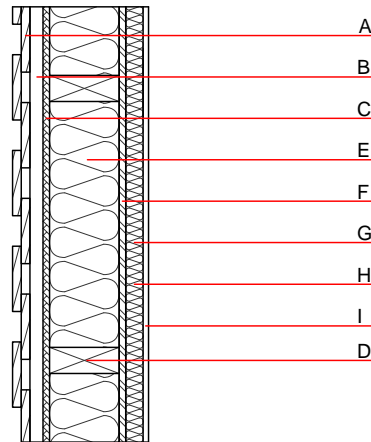
**Fire protection performance**      **REI from inside**      60  
    **REI from outside**      30  
 maximum ceiling height = 3 m; maximum load  $E_{d,fi}$  = 19,2 kN/m  
 Classified by MA39  
 Classified by HFA

**Thermal performance**      **U**      0.23 W/(m<sup>2</sup>K)  
    **Diffusion**      suitable  
 Calculated by HFA

**Acoustic performance**      **R<sub>w</sub> (C;C<sub>tr</sub>)**      50(-3;-10) dB  
    **L<sub>n,w</sub> (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

**Mass per unit area**      **m**      41.80 kg/m<sup>2</sup>

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 m<sup>2</sup>)

#### Database ecoinvent

**OI3<sub>Kon</sub>**      16.5

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		0.092	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