

## External wall - awrhh04a-05

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  $E_{d,fi} = 19,2 \text{ kN/m}$   
 Classified by MA39  
 Classified by HFA

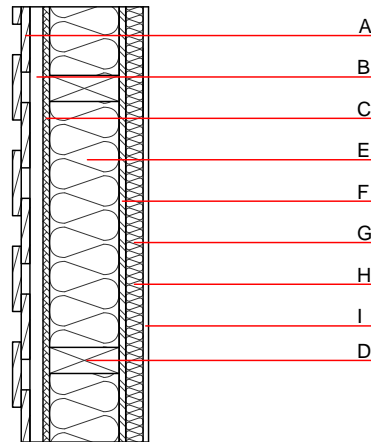
**Thermal performance**      **U**      0.15 W/(m<sup>2</sup>K)  
    **Diffusion**      suitable  
 Calculated by HFA

**Acoustic performance**      **R<sub>w</sub> (C;C<sub>tr</sub>)**      51(-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  $R_w(C;C_{tr})=44(-1;-5)$   
 Assessed by MA39

**Mass per unit area**      **m**      47.40 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	200.0	construction timber (60/-; e=625)	0.120	50	450	1.600	D
E	200.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
F	15.0	OSB	0.130	200	600	1.700	D
G	80.0	spruce wood cross battens (a=400) resp. battens offset	0.120	50	450	1.600	D
H	80.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
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>**      28.0

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		0.146	0.064	2,42E-6	0.028	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	137.994	786.025	924.019	471.925	28.891	500.816