

### External wall - awropo04a-07

external wall, timber frame construction, not ventilated, without dry lining, with rendering, other surface

#### Performance rating

**Fire protection performance** REI from inside 30  
 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

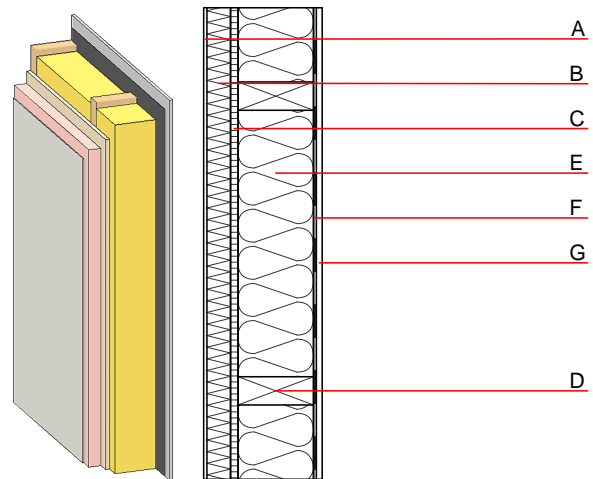
Calculated by HFA

**Acoustic performance**  $R_w (C; C_{tr})$  43(-2;-6) dB  
 $L_{n,w} (C_i)$

Assessed by MA39

**Mass per unit area** m 38.90  $\text{kg}/\text{m}^2$

Calculation based on gypsum plaster board type DF



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	4.0	plaster	1.000	10 - 35	2000	1.130	A1
B	50.0	Polystyrene EPS-F [0,040]	0.040	20 - 50	17	1.450	E
C	16.0	particleboard P5	0.130	50 - 100	700	1.700	D
D	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
E	160.0	sheep wool [0,041; R=26]	0.041	1	30	1.720	E
F		vapour barrier $s_d \geq 20\text{m}$			1000		
G	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
G	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

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

##### Database ecoinvent

$OI3_{kon}$  21.7

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		0.075	0.030	1,64E-6	0.022	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	34.866	377.941	412.807	342.840	61.518	404.358