

### External wall - awropo03a-08

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

#### Performance rating

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

maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 32,0 \text{ kN/m}$   
 Classified by HFA

<b>Thermal performance</b>	U	0.21 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

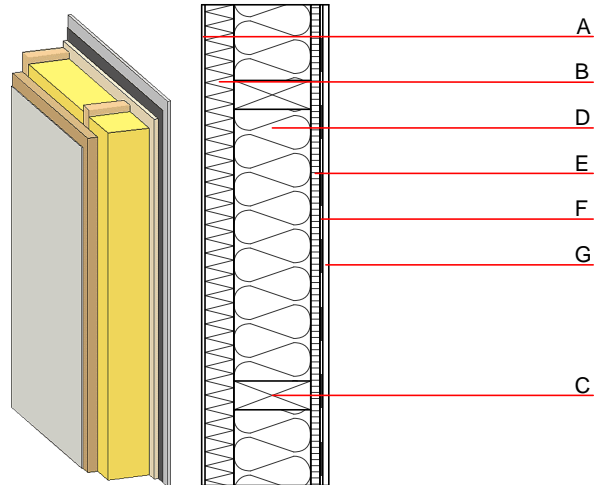
Calculated by HFA

<b>Acoustic performance</b>	$R_w (C; C_{tr})$	49(-3;-9) dB
	$L_{n,w} (C_i)$	

Assessed by MA39

<b>Mass per unit area</b>	m	66.70 $\text{kg}/\text{m}^2$
---------------------------	---	------------------------------

Calculation based on gypsum plaster board type DF



Note: e=400

#### 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	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	60.0	wood-fibre insulation board WF-PT [045; 180]	0.045	5 - 7	180	2.100	E
C	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
D	160.0	mineral wool [040; $\geq 16$ ; $< 1000^\circ\text{C}$ ]	0.040	1	16	1.030	A1
E	19.0	particleboard	0.130	50 - 100	700	1.700	D
F		vapour barrier $s_d \geq 2\text{m}$				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

$O13_{kon}$  37.3

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		0.154	0.069	2,96E-6	0.027	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	79.539	636.541	716.080	587.951	57.446	645.397