

### External wall - awmopo01a-04

external wall, solid wood construction, not ventilated, without dry lining, with rendering, wooden surface

#### Performance rating

**Fire protection performance** REI from inside 60  
 REI from outside 90  
 maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 35,0 \text{ kN/m}$   
 Classified by HFA

#### Germany

REI60 (from inside/from outside)  
 Load  $E_{d,fi}$  according to the German certification document  
 Corresponding proof: manufacturer-specific

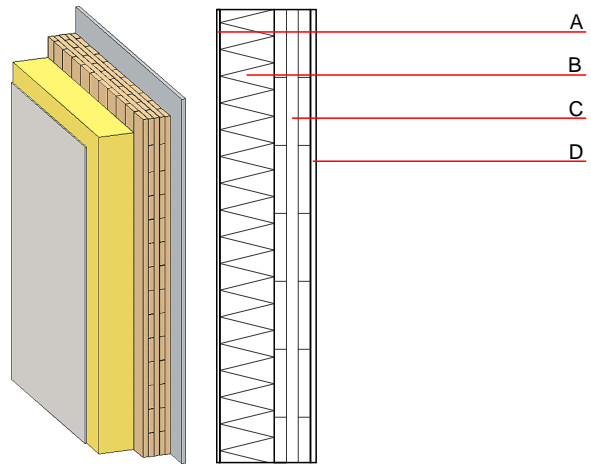
**Thermal performance** U Diffusion 0.26  $\text{W}/(\text{m}^2\text{K})$   
 suitable

Calculated by HFA  
 Calculated by HFA  
 Calculated by TUM

**Acoustic performance**  $R_w (C;C_{tr})$  38(-1;-4) dB  
 $L_{n,w} (C_i)$

If a lightweight ETICS insulation panel ( $\rho$  approx.  $90\text{kg}/\text{m}^3$ ) is applied -  $R_w=36\text{dB}$ .  
 Beurteilung durch TU-GRAZ  
 Assessed by Müller-BBM

**Mass per unit area** m 79.60  $\text{kg}/\text{m}^2$



Note: Cross laminated timber:

Variation 00-03:  $d \geq 78,0$ ; at least 3-layers, top layer at least 25 mm; variation 04-07: at least 3-layers, top layer at least 30 mm

#### 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	120.0	mineral wool MW-PT [040; 155]	0.040	1	155	1.030	A1
C	100.0	solid glued wood (e.g. cross laminated timber)	0.130	50	500	1.600	D
D		without gypsum board lining					

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

##### Database ecoinvent

$OI3_{kon}$  69.0

Calculated by HFA

##### Database GaBi (ÖKOBAUDAT)

**Built-in renewable materials** kg 46.000  
**Biogenic carbon in  $\text{kg CO}_2\text{-e}$ .** kg  $\text{CO}_2$  66.220  
**Energy use of Primary Energy** MJ 711.340  
**Share of renewable PE** % 29.55

Calculated by TUM

**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		0.338	0.108	3,50E-6	0.128	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	42.970	684.000	726.970	788.464	17.714	806.178

**Database GaBi (ÖKOBAUDAT)**

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		0.185	0.029	2,97E-6	0.018	
C1 - C4		0.004	0.005	1,17E-7	0.001	
A1 - C4		0.190	0.034	3,09E-6	0.018	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	209.562	782.004	989.686	486.918	30.441	516.830
C1 - C4	0.657	-779.260	-778.438	13.502	0.000	15.710
A1 - C4	210.224	2.744	211.457	501.113	30.441	536.610