

## External wall - awmopo01a-07

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

### Performance rating

**Fire protection performance**  
REI from inside 90  
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 0.28  $\text{W}/(\text{m}^2\text{K})$   
suitable

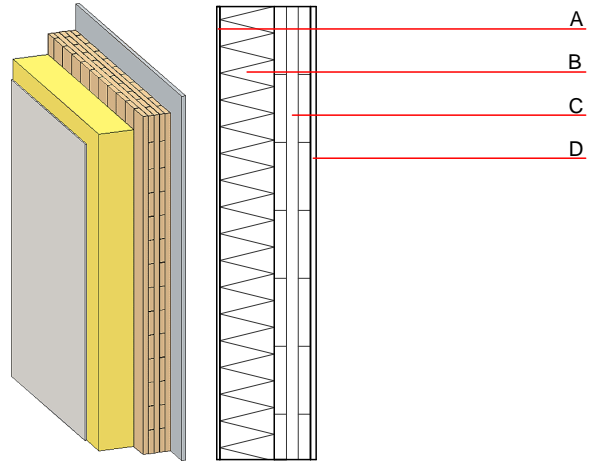
Calculated by HFA  
Calculated by TUM

**Acoustic performance**  
 $R_w (C; C_{tr})$  39(-1;-6) dB  
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

**Mass per unit area** m 93.80  $\text{kg/m}^2$

Calculation based on gypsum plaster board type DF



**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
			$\lambda$	$\mu \text{ min} - \text{max}$	$\rho$	c	
A	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	120.0	wood-fibre insulation board [045; 190]	0.045	5 - 7	190	2.100	E
C	100.0	solid glued wood (e.g. cross laminated timber)	0.130	50	500	1.600	D
D	12.5	gypsum plaster board type DF / gypsum fibre board	0.250	10	800	1.050	A2

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

#### Database ecoinvent

013<sub>Kon</sub> 42.7

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	73.600
Biogenic carbon in $\text{kg CO}_2\text{-e.}$	$\text{kg CO}_2$	105.750
Energy use of Primary Energy	MJ	865.020
Share of renewable PE	%	38.66

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		0.204	0.088	3,97E-6	0.048	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	70.815	1038.249	1109.064	728.164	51.177	779.341

### 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		0.099	0.021	2,47E-6	0.020	
C1 - C4		0.003	0.000	1,34E-7	0.000	
A1 - C4		0.105	0.022	2,61E-6	0.020	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	332.843	1087.688	1418.652	504.934	29.926	534.330
C1 - C4	1.231	-1082.514	-1081.119	20.408	-21.224	1.390
A1 - C4	334.454	5.433	338.375	530.571	8.754	544.380