

## External wall - awmopi01a-00

external wall, solid wood construction, not ventilated, with dry lining, with rendering, other 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 kN/m  
Classified by HFA

#### Germany

REI60 (from inside/from outside); Attention: REI 90 (from inside) in Germany possible with 2x12,5mm gypsum plaster board type DF/gypsum fibre board  
Load  $E_{d,fi}$  according to the German certification document  
Corresponding proof: manufacturer-specific

**Thermal performance** U 0.20 W/(m<sup>2</sup>K)  
Diffusion suitable

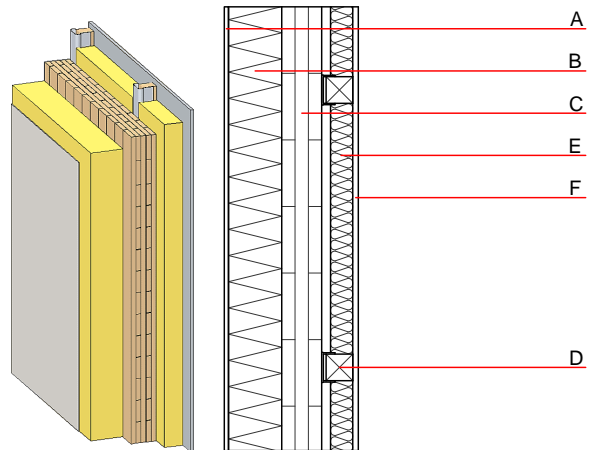
Calculated by HFA  
Calculated by TUM

**Acoustic performance**  $R_w$  (C<sub>1</sub>;C<sub>tr</sub>) 50(-3;-9) dB  
 $L_{n,w}$  (C<sub>1</sub>)

$R_w$ =48dB if a lightweight ETICS insulation Panel ( $\rho$  approx. 90kg/m<sup>3</sup>) is applied.  
Assessed by Müller-BBM

**Mass per unit area** m 94.30 kg/m<sup>2</sup>

Calculation based on gypsum plaster board type DF



Note: Attention: REI90 (from inside) in Germany possible with 2x12,5mm gypsum plaster board type DF/gypsum fibre board

### 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 [041; 155] ETICS insulation panel	0.041	1	155	1.030	A1
C	100.0	cross laminated timber	0.130	50	500	1.600	D
D	70.0	spruce wood battens (60/60) mounted on resilient clips; e=660	0.120	50	450	1.600	D
E	50.0	mineral wool [040; $\geq 16$ ; <1000°C]	0.040	1	16	1.030	A1
F	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
F	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> 74.6

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 51.830  
Biogenic carbon in kg CO<sub>2</sub>-e. kg CO<sub>2</sub> 74.710  
Energy use of Primary Energy MJ 825.050  
Share of renewable PE % 29.30

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		0.358	0.118	4.03E-6	0.132	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	53.894	731.169	785.062	872.876	17.714	890.590

### 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		0.208	0.033	3.20E-6	0.020	
C1 - C4		0.005	0.006	1.52E-7	0.001	
A1 - C4		0.216	0.039	3.36E-6	0.021	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	240.575	887.681	1126.046	559.473	34.111	593.040
C1 - C4	0.768	-879.492	-878.560	17.634	0.000	19.840
A1 - C4	241.729	8.447	248.334	583.324	34.163	622.520