

## External wall - awrhho07a-12

external wall, timber frame construction, ventilated, without dry lining, with cladding, other surface

### Performance rating

**Fire protection performance** REI from inside 60  
 REI from outside 30  
 maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 32,0 \text{ kN/m}$   
 Classified by HFA  
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#### Germany

F60 (from inside/from outside)  
 Load  $E_{d,fi}$  according to the German certification document  
 Corresponding proof: manufacturer-specific

**Thermal performance** U 0.16  $\text{W}/(\text{m}^2\text{K})$   
 Diffusion suitable

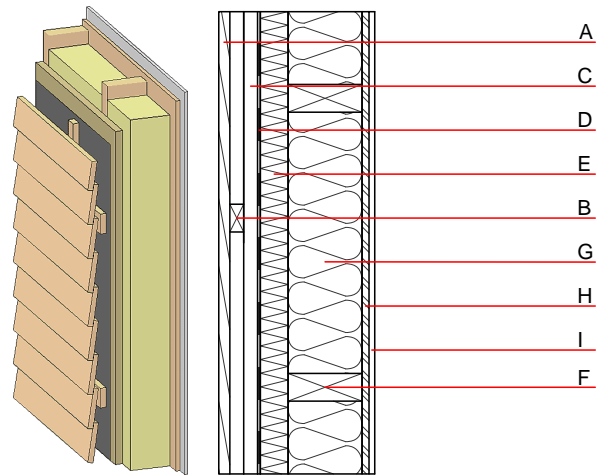
Calculated by TUM

**Acoustic performance**  $R_w (C; C_{tr})$  47(-2;-8) dB  
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

**Mass per unit area** m 62.10  $\text{kg}/\text{m}^2$

Calculation based on gypsum plaster board type DF



Note: According to OIB-RL 2 (Austria) is for ventilated and insulated facades (from building class 2) an insulation material with minimum Euroclass D required.

### 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	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	30.0	spruce wood battens - ventilation	0.120	50	450	1.600	D
C	30.0	spruce wood cross battens	0.120	50	450	1.600	D
D		wind barrier			1000		
E	60.0	wood-fibre insulation board [045; 140]	0.045	2 - 5	140	2.100	E
F	200.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
G	200.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
H	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
I	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

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

#### Database ecoinvent

OI3<sub>Kon</sub> 22.6

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 56.160  
 Biogenic carbon in  $\text{kg CO}_2\text{-e.}$  kg  $\text{CO}_2$  82.120  
 Energy use of Primary Energy MJ 1064.690  
 Share of renewable PE % 39.00

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		0.118	0.054	2,25E-6	0.025	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	136.205	836.456	972.661	431.794	43.333	475.127

### 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		0.120	0.025	7,38E-7	0.032	
C1 - C4		0.002	0.000	8,06E-8	0.000	
A1 - C4		0.123	0.026	8,26E-7	0.032	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	412.652	1173.722	1586.278	618.052	76.472	694.620
C1 - C4	2.159	-1168.611	-1166.453	26.217	-49.010	-22.790
A1 - C4	415.190	5.370	420.463	649.498	27.514	677.100