

### External wall - awrhho07a-13

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 0.14 W/(m<sup>2</sup>K)  
 Diffusion suitable

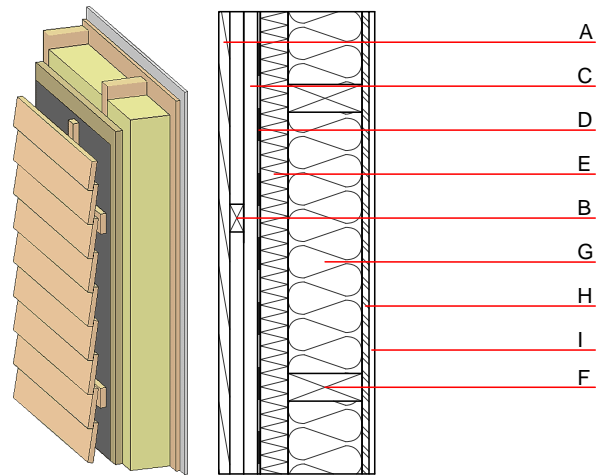
Calculated by TUM

**Acoustic performance**  $R_w (C;C_{tr})$  48(-2;-8) dB  
 $L_{n,w} (C_i)$

Assessed by Müller-BBM

**Mass per unit area** m 62.20 kg/m<sup>2</sup>

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	240.0	construction timber (60/..; e=625)	0.120	50	450	1.600	D
G	240.0	mineral wool [040; 30; $\geq 1000^\circ\text{C}$ ]	0.040	1	30	1.030	A1
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 m<sup>2</sup>)

##### Database ecoinvent

O13<sub>kon</sub> 32.0

Calculated by HFA

##### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 48.110  
 Biogenic carbon in kg CO<sub>2</sub>-e. kg CO<sub>2</sub> 70.640  
 Energy use of Primary Energy MJ 687.370  
 Share of renewable PE % 33.06

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		0.167	0.061	2,13E-6	0.055	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	130.222	719.643	849.864	457.746	29.328	487.074

### 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		0.126	0.021	9,69E-7	0.024	
C1 - C4		0.002	0.003	8,53E-8	0.000	
A1 - C4		0.131	0.024	1,06E-6	0.024	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	225.731	750.784	976.573	438.547	55.156	493.810
C1 - C4	1.134	-744.378	-743.245	15.090	-17.052	-1.960
A1 - C4	227.253	6.664	233.975	460.118	38.156	498.380