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Designation: Last updated: Source: Editor:

awmohi02a-04 8/2/23 Holzforschung Austria HFA, PLB

External wall - awmohi02a-04

external wall, solid wood construction, ventilated, with dry lining, with cladding, other surface

Performance rating

Fire protection	REI from inside	90
performance	REI from outside	60
maximum cailing haight -	2 m; maximum load E	- 2E kNI /m

maximum ceiling height = 3 m; maximum load E_{d,fi} = 35 kN/m Classified by HFA

Germany

REI 60 (from inside/from outside); Attention: REI 90 (from inside) possible with 2x12,5mm gypsum plaster board type DF/gypsum fibre board Load $E_{d,\mathrm{fi}}$ according to the German certification document

Corresponding proof: manufacturer-specific

Thermal performance	U	0.15 W/(m ² K)
	Diffusion	suitable
Calculated by TUM		
Acoustic performance	R _w (C;C _{tr}) L _{n,w} (C _l)	53(-2;-8) dB
Assessed by Müller-BBM		
Mass per unit area	m	102.60 kg/m ²

Calculation based on gypsum plaster board type DF



Note: Attention: REI 90 (from inside) in Germany possible with 2x12,5mm GKF/GF

Cross laminated timber: Var. 04-06: at least 3-layers, top layer at least 30mm; var. 03: d \ge 85mm; at least 5-layers, top layer at least 17mm

Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

	Thickness	Building material	Thermal per	Reaction to fire			
			λ	µ min – max	ρ	с	EN
А	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
В	30.0	spruce wood battens (30/50)	0.120	50	450	1.600	D
С		vapour-permeable membrane $sd \le 0.3 m$					
D	15.0	gypsum fibre board	0.320	21	1000	1.100	A2
Е	200.0	construction timber (60/200; e=625)	0.120	50	450	1.600	D
F	200.0	mineral wool [040; 11; <1000 °C]	0.040	1	11	1.030	A1
G	100.0	cross laminated timber	0.130	50	500	1.600	D
Н	70.0	battens (60/60) on resilient clips, e=660	0.120	50	450	1.600	
T	50.0	mineral wool [040; 11; <1000 °C]	0.040	1	11	1.030	A1
J	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
J	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent		Database GaBi (ÖKOBAUDAT)				
OI3 _{Kon}	36.2	Built-in renewable materials	kg	72.520		
Calculated by HFA		Biogenic carbon in kg CO ₂ -e.	kg CO ₂	104.930		
		Energy use of Primary Energy	LM	874.340		
		Share of renewable PE	%	35.97		
		Calculated by TLIM				

Calculated by TUM

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Details of sustainability rating

Database ecoinvent

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO ₂ -e.]	[kg SO ₂ -e.]	[kg PO ₄ -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.195	0.086	3,70E-6	0.055	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[M]	[LM]	[LM]	[MJ]	[M]
A1 - A3	129.258	1125.275	1254.533	667.532	23.584	691.116

Database GaBi (ÖKOBAUDAT)

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO ₂ -e.]	[kg SO ₂ -e.]	[kg PO ₄ -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.151	0.026	3,29E-6	0.022	
C1 - C4		0.004	0.003	2,25E-7	0.001	
A1 - C4		0.158	0.030	3,53E-6	0.023	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[M]	[M]	[LM]	[MJ]	[MJ]	[LM]
A1 - A3	312.729	1248.389	1558.982	524.886	47.167	571.600
C1 - C4	0.871	-1236.777	-1235.906	21.858	-0.100	21.760
A1 - C4	314.466	12.131	324.460	559.870	47.184	606.600