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Designation: Last updated: Source: Editor: awrhho07a-15 8/2/23 Holzforschung Austria HFA, SP

External wall - awrhho07a-15

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

Performance rating

Fire protection performance	REI from inside REI from outside	60 30					
maximum ceiling height = 3 m; maximum load E _{d,fi} = 32,0 kN/m Classified by HFA Classified by HFA							
Germany							
F60 (from inside/from outs	side)						
Load E _{d,fi} according to the O	German certification docur	nent					
Corresponding proof: manu	facturer-specific						
Thermal performance	U	$0.14 W (m^2 k)$					
	Diffusion	suitable					
Calculated by TUM	Diffusion	suitable					
Calculated by TUM	Diffusion R _w (C;C _{tr}) L _{n,w} (C ₁)	48(-2;-8) dB					
Calculated by TUM Acoustic performance Assessed by Müller-BBM	Diffusion R _w (C;C _{tr}) L _{n,w} (C _l)	48(-2;-8) dB					
Calculated by TUM Acoustic performance Assessed by Müller-BBM Mass per unit area	Diffusion R _w (C;C _{tr}) L _{n,w} (C _l) m	48(-2;-8) dB					



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
			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 - ventilation	0.120	50	450	1.600	D
С	30.0	spruce wood cross battens	0.120	50	450	1.600	D
D		wind barrier			1000		
Е	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	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
Н	15.0	OSB (sealed with airtight tape)	0.130	200	600	1.700	D
Ι	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 m²)

Database ecoinvent		Database GaBi (ÖKOBAUDAT)			
OI3 _{Kon}	24.2	– Built-in renewable materials Biogenic carbon in kg CO ₂ -e.	kg	60.040	
Calculated by HFA			kg CO ₂	87.730	
		Energy use of Primary Energy	MJ	1183.580	
		Share of renewable PE	%	39.32	
		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		0.127	0.058	2,41E-6	0.027	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[M]	[M]	[LM]	[LM]	[MJ]	[M]
A1 - A3	145.173	897.554	1042.727	462.240	46.134	508.374

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		0.133	0.028	8,23E-7	0.035	
C1 - C4		0.002	0.000	8,56E-8	0.000	
A1 - C4		0.136	0.029	9,15E-7	0.035	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[M]	[LM]	[LM]	[MJ]	[M]
A1 - A3	462.636	1297.781	1760.475	683.614	82.888	766.610
C1 - C4	2.405	-1292.662	-1290.257	29.313	-55.426	-26.110
A1 - C4	465.421	5.378	470.856	718.156	27.514	745.780