External wall - awropi20b-08

external wall, timber frame construction, not ventilated, with dry lining, with rendering, other surface

Performance rating
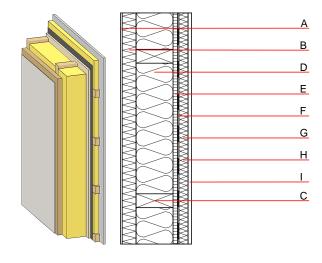
Fire protection	REI from inside	60
performance	REI from outside	90

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 32,0 kN/m
Classified by HFA

Thermal performance	U	0.17 W/(m²K)
	Diffusion	suitable

Calculated by HFA

Acoustic performance	R_w (C;C_{tr})	52(-2;-9) dB
	$L_{n,w}$ (C_I)	

Vertical battens for the dry lining screwed onto the ledger beams lead to an
Rw(C;Ctr)=50(-1;-7) dB
Assessed by MA39

Mass per unit area	m	73.10 kg/m²

Calculation based on gypsum plaster board type DF

Note: e=625

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	c	EN
A	7.0	plaster	1.000	10 - 35	2000	1.130	A1
B	60.0	wood-fibre insulation board WF-PT [045; 180]	0.045	5 - 7	180	2.100	E
C	160.0	construction timber (60/..; e=*)	0.120	50	450	1.600	D
D	160.0	mineral wool [038; ≥33; ≥1000°C]	0.038	1	33	1.030	A1
E	19.0	particleboard P4	0.130	50 - 100	700	1.700	D
F		vapour barrier sd≥ 2m			1000		
G	40.0	spruce wood cross battens (a=400) or battens offset)	0.120	50	450	1.600	D
H	40.0	mineral wool [038; ≥33; ≥1000°C] or air layer in type 02	0.038	1	33	1.030	A1
I	15.0	gypsum plaster board type DF or	0.250	10	800	1.050	A2
I	15.0	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

OI3$_{Kon}$	46.4

Calculated by HFA

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dataholz.eu – Catalogue of timber building materials, components and component connections reviewed to consider thermal, acoustic, fire performance requirements and ecological drivers for timber construction released by accredited testing institutes.
These datasheets will generally be accepted as proofs of compliance by building authorities.

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Page 2

Details of sustainability rating

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO$_2$-e.]	AP [kg SO$_2$-e.]	EP [kg PO$_4$-e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.200	0.074	2.83E-6	0.058	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	73.936	606.733	680.669	628.276	57.446	685.722

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Page 2