

External wall - awsopi02a-01

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

Performance rating

Fire protection performance	REI from inside	60
	REI from outside	90

From outside inwards REI 90; maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 16,8 kN/lfm
 Classified by HFA

Thermal performance	U	0.09 W/(m ² K)
	Diffusion	suitable

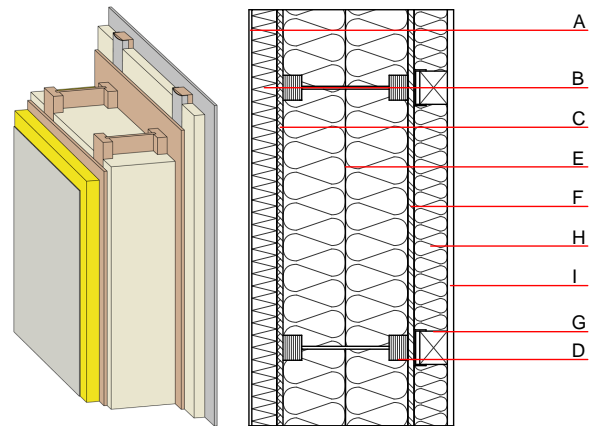
The stated thermal characteristics in the product data sheet are specified for the hard board intermediate web; the flanges are calculated with solid wood.
 Calculated by HFA

Acoustic performance	R_w (C;C _{tr})	56 dB
	$L_{n,w}$ (C _i)	

without resilient clips $R_w \geq 53$ dB
 Assessed by HFA

Mass per unit area	m	73.80 kg/m ²
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Calculation based on gypsum plaster board type DF



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
			λ	μ min - max	ρ	c	
A	4.0	plaster	1.000	10 - 35	2000	1.130	A1
B	60.0	mineral wool MW-PT [040; 155]	0.040	1	155	1.030	A1
C	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
D	300.0	Light composite wood-based beams (I-beams) with solid wood flanges (60/45) and hard board intermediate web ($\geq 6,7$) e=625	0.400	20 - 30	800	1.700	D
E	300.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
F	15.0	OSB	0.130	200	600	1.700	D
G	80.0	spruce wood battens on resilient clips (50/80; e=625)	0.120	50	450	1.600	D
H	80.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
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

$OI3_{kon}$ 51.5

Calculated with gypsum plaster fire protection board (GKF/DF) and silicate plaster
 Calculated by HFA

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		0.231	0.085	3,19E-6	0.063	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	106.817	739.298	846.115	691.248	58.290	749.538