

External wall - awmopi04a-02

external wall, solid wood construction, not ventilated, with dry lining, with rendering, other surface

Performance rating

Fire protection performance	REI from inside	90
	REI from outside	60

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

Thermal performance	U	0.08 $\text{W}/(\text{m}^2\text{K})$
	Diffusion	suitable

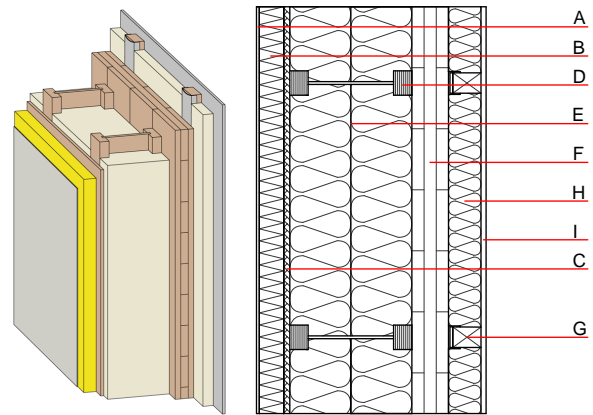
The stated thermal characteristics in the product data sheet are specified for the hard board intermediate web; the flanges are calculated with solid wood.
 Calculated by HFA

Acoustic performance	$R_w (C;C_{tr})$	47 dB
	$L_{n,w} (C_i)$	

without resilient clips $R_w \geq 44 \text{ dB}$
 Assessed by HFA

Mass per unit area	m	99.20 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	$\mu \text{ min - max}$	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	mineral wool [034; 18; <1000°C]	0.034	1	18	1.030	A1
F	100.0	cross laminated timber $d \geq 94,0$; at least 3-layers, top layer at least 30mm;	0.130	50	500	1.600	D
G	80.0	spruce wood	0.120	50	450	1.600	D
H	80.0	mineral wool [034; 18; <1000°C]	0.034	1	18	1.030	A1
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^2)

Database ecoinvent

$OI3_{Kon}$ 75.4

calculated with gypsum plaster fire protection board (GKF/DF) and silicate plaster; this data includes 3-, 5-, and 7-ply cross laminated timber elements;
 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		0.352	0.136	4,98E-6	0.097	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	83.944	951.500	1035.444	1001.390	35.512	1036.901