

External wall - awmhi02a-02

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

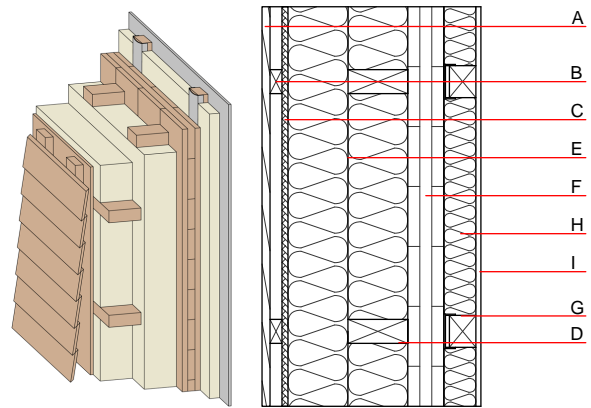
Performance rating

Fire protection performance
 REI from inside 90
 REI from outside 60
 maximum ceiling height = 3 m; maximum load $E_{d,fi} = 35 \text{ kN/lfm}$
 Classified by HFA

Thermal performance
 U 0.09 $\text{W}/(\text{m}^2\text{K})$
 Diffusion suitable
 Calculated by HFA

Acoustic performance
 $R_w (C;C_{tr})$ 50 dB
 $L_{n,w} (C_i)$
 without resilient clips $R_w \geq 47 \text{ dB}$
 Assessed by HFA

Mass per unit area m 104.60 kg/m^2
 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	20.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	30.0	spruce wood battens offset (30/60) - ventilation	0.120	50	450	1.600	D
C	15.0	fibreboard (MDF)	0.140	11	600	1.700	D
D	160.0	construction timber cross; (60/160; e=625)	0.120	50	450	1.600	D
D	160.0	construction timber (60/160; e=625)	0.120	50	450	1.600	D
E	320.0	mineral wool [034; 18; <1000°C]	0.034	1	18	1.030	A1
F	100.0	cross laminated timber $\geq 94,0$; at least 3-layers, top layer at least 30mm)	0.130	50	500	1.600	D
G	80.0	spruce wood Battens on resilient clips (50/80; e=625)	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

$OI3_{Kon}$ 48.7

Calculated with gypsum plaster fire protection board (GKF/DF); 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		0.257	0.113	4,31E-6	0.062	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	141.078	1294.746	1435.824	820.257	34.200	854.457