

External wall - awrhi04a-02

external wall, timber frame construction, ventilated, with dry lining, with cladding, other surface

Performance rating

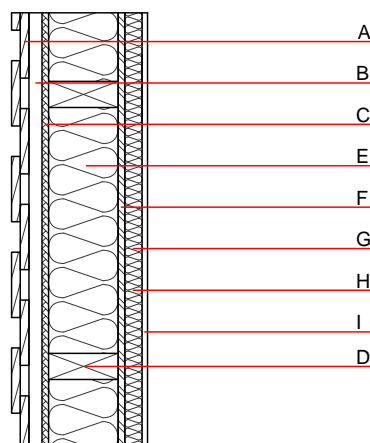
Fire protection performance **REI from inside** 60
 REI from outside 30
 maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 19,2 kN/m
 Classified by MA39
 Classified by HFA

Thermal performance **U** 0.24 W/(m²K)
 Diffusion suitable
 Calculated by HFA

Acoustic performance **R_w (C;C_{tr})** 49(-3;-10) dB
 L_{n,w} (C_i)
 Battens for the ventilation space screwed onto the structural timber together with vertical battens for the dry lining screwed directly onto the ledger beams will result in $R_w(C;C_{tr})=42(-1;-5)$
 Assessed by MA39

Mass per unit area **m** 41.30 kg/m²

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	24.0	larch wood external wall cladding	0.155	150	600	1.600	D
B	30.0	spruce wood battens offset (30/50; 30/80) - 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 (60/-; e=625)	0.120	50	450	1.600	D
E	160.0	mineral wool [040; ≥ 16 ; $< 1000^\circ\text{C}$]	0.040	1	16	1.030	A1
F	15.0	OSB	0.130	200	600	1.700	D
G	40.0	spruce wood cross battens (a=400) resp. battens offset	0.120	50	450	1.600	D
H		air layer	0.000	1	1	1.008	
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 m²)

Database ecoinvent

OI3_{Kon} 20.6

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		0.113	0.049	1,86E-6	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	121.023	705.445	826.468	372.468	28.891	401.359