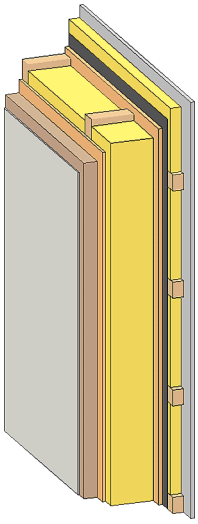
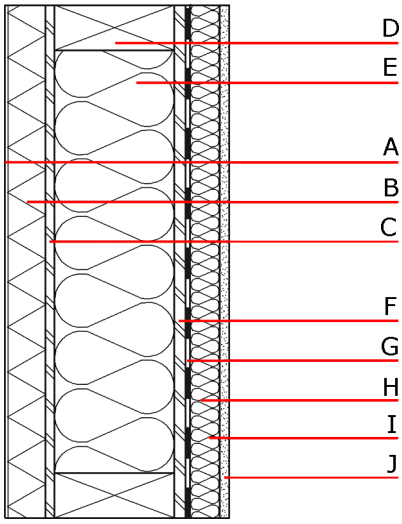
external wall - timber frame construction, not ventilated, with dry lining, with rendering





Performance rating

Fire protection performance	REI	60

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 32,0 kN/m
Classified by MA39

Thermal performance	U[W/m²K]	0,20
	Diffusion adequate	adequate
	$m_{w,B,A}$[kg/m²]	19,7

Calculated by HFA

Acoustic performance	R_w ($C;C_{tr}$)	52 (-3; -8)
	$L_{n,w}$ (C_I)	–

Vertical battens for the dry lining screwed onto the ledger beams lead to an Rw(C;Ctr)=49(-1;-5) dB
Assessed by MA39

Sustainability*	$OI3_{Kon}$	8,5

Calculated by IBO

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	4,0	plaster	1,000	10 - 35	2000	1,130	A1
B	50,0	wood wool composite boards	0,090	2 - 5	370	2,000	B
C	12,0	OSB	0,130	200	650	1,700	D
D	160,0	finger-jointed solid construction timber (60/..; e=400)	0,130	50	500	1,600	D
E	160,0	glass wool [0,0040; R=16]	0,040	1	16	1,030	A1
F	15,0	OSB	0,130	200	650	1,700	D
G		vapour barrier sd≥ 13m			1000		
H	40,0	spruce wood cross battens (a=400) or battens offset)	0,130	50	500	1,600	D
I	40,0	glass wool [0,0040; R=16] or air layer in type 02	0,040	1	16	1,030	A1
J	12,5	gypsum plasterboards with improved properties at high temperatures (fire) or	0,250	10	800	1,050	A2
J	12,5	gypsum fibre board	0,320	21	1000	1,100	A2

***Details of sustainability rating**

GWP [kg CO_2 Äqv.]	AP [kg SO_2 Äqv.]	PEI ne [MJ]	PEI e [MJ]	EP [kg PO_4 Äqv.]	POCP [kg C_2H_4 Äqv.]
-31,7	0,232	576,9	829,9	0,038	0,009

Mass per unit area

m [kg/m²]	calculation based on
68,70	gypsum plasterboard (DF)