

Material and Construction Specifications

Building envelope

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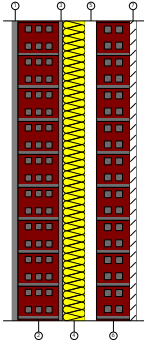
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1. FAÇADES

1.1. Cavity wall facade

Cavity wall facade, 30cm thickness, composed of: 15 mm thick cement mortar rendering, 110 mm thick masonry external leaf, 10 mm thick layer of cement mortar, 60 mm thick mineral wool insulation (0.031 W/[mK]), 30 mm thick airspace, 90 mm thick masonry internal leaf and 15 mm thick two-coat work plaster.



Layers	e	r	l	RT	Cp	m
1 - Cement or lime mortar for masonry and plaster 1000 < d < 1250	1.50 cm	1125.00 kg/m ³	0.825 W/(m·K)	0.02 (m ² ·K)/W	1000.00 J/(kg·K)	10
2 - Clay hollow brick with nine holes divided into three columns and two rows [100 mm<T<110 mm]	11.00 cm	1140.00 kg/m ³	0.650 W/(m·K)	0.17 (m ² ·K)/W	1000.00 J/(kg·K)	10
3 - Cement or lime mortar for masonry and plaster 1000 < d < 1250	1.00 cm	1125.00 kg/m ³	0.550 W/(m·K)	0.02 (m ² ·K)/W	1000.00 J/(kg·K)	10
4 - Mineral wool [0.031 W/[mK]]	6.00 cm	40.00 kg/m ³	0.047 W/(m·K)	1.29 (m ² ·K)/W	1000.00 J/(kg·K)	1
5 - Airspace	3.00 cm	1000.00 kg/m ³	0.750 W/(m·K)	0.04 (m ² ·K)/W	1000.00 J/(kg·K)	10
6 - Clay hollow brick with nine recesses ste into three columns and two rows [80 mm<T<90 mm]	9.00 cm	1140.00 kg/m ³	0.532 W/(m·K)	0.17 (m ² ·K)/W	1000.00 J/(kg·K)	10
7 - Plaster 1000 < d < 1300	1.50 cm	1150.00 kg/m ³	0.570 W/(m·K)	0.03 (m ² ·K)/W	1000.00 J/(kg·K)	6
Total thickness: 33.00 cm						

Thermal insulation

Thermal transmittance: 1.09 W/(m²·K)

Thermal capacity: 80.00 J/(m²·K)

Absorption coefficient: 0.6

Sound insulation

Global sound reduction index, Rw (C; Ctr): 40 (-1; -3) dB

Global sound reduction index, Rw, using transmission via edges: 40 dB

Fire resistance

Fire resistance: EI 90 min

ABBREVIATIONS USED

e Thickness (cm)

RT Thermal resistance ((m²·K)/W)

ρ Density (kg/m³)

Cp Specific heat (J/(kg·K))

λ Thermal conductivity (W/(m·K))

μ Water vapour diffusion resistance factor