

Fire resistance periods

Block Factsheet I - June 2023

Historically, buildings formed from masonry have proven time and again to be among the safest and most reliable fire-resistant building methods available. This is true both during the construction phase and for the entire lifetime of the building. All of the concrete blocks in our range are non-combustible with zero spread of flame and are classed as Class A1 in accordance with BS EN 13501-1.

The tables below show the notional fire-resistance periods for various block types using general purpose mortar.

Ultralite Blocks & Insulite Blocks

Block mm	Loadbearing Wall (Criteria REI)		Non-loadbearing Wall (Criteria EI)		Cavity Wall (one leaf loaded REI)	
	No Finish	VG Plaster	No Finish	VG Plaster	No Finish	VG Plaster
100	2 hours	4 hours	4 hours	4 hours	2 hours	4 hours
140	3 hours	4 hours	4 hours	4 hours	-	-
215 (see note)	4 hours	4 hours	4 hours	4 hours	-	-

Note: 215mm high wall block laid flat

Notes:

- These tables are only valid for walls complying with BS EN 1996-1-1, BS EN 1996-2 and BS EN 1996-3
- Values are based on values given in the National Annex to BS EN 1996-1-2.
- The thicknesses given are for the masonry alone, excluding finishes.
- Plaster is assumed to be a minimum of 10mm thick on both faces of a single-leaf wall or on the fire-exposed face of a cavity wall.
- Sand-cement plaster is not considered to increase the fire resistance of the wall.
- "VG" refers to vermiculite / gypsum plaster or perlite / gypsum plaster.
- These figures are based on mortars using OPC cement and may differ if a non-OPC cement is used in the wall construction.
- The information given here is only for basic guidance and cannot possibly take account of every scenario regarding fire safety. Expert guidance must be sought wherever possible.

Solid Dense Blocks (including MIDI blocks)

Block mm	Loadbearing Wall (Criteria REI)		Non-loadbearing Wall (Criteria EI)		Cavity Wall (one leaf loaded REI)	
	No Finish	VG Plaster	No Finish	VG Plaster	No Finish	VG Plaster
100	2 hours	4 hours	4 hours	4 hours	2 hours	4 hours
140	3 hours	4 hours	4 hours	4 hours	-	-
215 (see note)	4 hours	4 hours	4 hours	4 hours	-	-

Note: 215mm high wall block laid flat

Hollow & Cellular Dense Blocks

Block mm	Loadbearing Wall (Criteria REI)		Non-loadbearing Wall (Criteria EI)		Cavity Wall (one leaf loaded REI)	
	No Finish	VG Finish	No Finish	VG Finish	No Finish	VG Plaster
100	1 hour	1.5 hours	1 hour	2 hours	2 hours	2 hours
140	3 hours	3 hours	4 hours	4 hours	-	-
215	4 hours	4 hours	4 hours	4 hours	-	-

Airtec Aerated Blocks

Block mm	Loadbearing Wall (Criteria REI)		Non-loadbearing Wall (Criteria EI)		Cavity Wall (one leaf loaded REI)	
	No Finish	VG Plaster	No Finish	VG Plaster	No Finish	VG Plaster
100	2 hours	4 hours	4 hours	4 hours	2 hours	2 hours
140	3 hours	4 hours	4 hours	4 hours	-	-
215	4 hours	4 hours	4 hours	4 hours	-	-

Chimneys

Concrete blocks are not suitable for use in areas where they are subjected to cycles of excessive heating such as fireplaces. Blocks can be used to form the structure of chimneys but must be fully shielded and separated from the heat and exhaust fumes by the use of suitable flue and fire linings.

In accordance with NHBC guidance, our solid Insulite or solid Dense blocks are suitable for use in chimney structures. Airtec and Ultralite blocks are not recommended.

EI = Separating only criteria EI REI = Separating and Loadbearing criteria REI

R – Mechanical resistance E – Integrity I – Insulation