

Ultra lightweight, loadbearing units, suitable for general purpose walling applications. Ideal for use in housing and extensions. **Fibo 850** is produced in a 3.6N/mm² compressive strength. **Fibo 950** is produced in a 7.3N/mm² compressive strength.

General Properties - Table 1

	Fibo 850 (3.6N/mm ²)	Fibo 950 (7.3N/mm ²)
Face Size	440mm x 215mm	
Dimensional Tolerances	Category: D1	
Mean Unit Strength (N/mm ²)	3.6	7.3
Net Dry Density (kg/m ³)	850	950
Thermal Conductivity (W/mK) @ 3% moisture content (internal use)	0.27	0.31
Moisture Movement (mm/m)	<0.6	<0.6
Reaction to Fire	Class A1	
Configuration	Solid Blocks: Group 1	
Specific Heat Capacity (1000 J/kg/K)	1000	
Water Vapour Diffusion Coefficient	$\mu = 5/15$ (Tabulated value from BS EN 1745)	



Recycled content for specific details please contact the branch.

- High thermal insulation reducing the amount of added insulation required to comply with energy efficiency standards
- Lightweight, making Fibo 850/950 an easy to handle - one-hand lift - and quick to lay
- Good background for direct application of plasters and renders - no bonding agents required.
- Fixings can be easily made and held securely. Ideal back ground for direct nailing
- High levels of fire protection - up to 2 hours for 100mm loadbearing walls

Fibo 850/950 is an ultra lightweight concrete block manufactured from expanded clay aggregates and a mixture of other naturally occurring raw materials and cement. The clay aggregate is produced from carefully selected clays which through heat expansion are bloated to create a low density porous aggregate with numerous cavities. This is what makes Fibo 850/950 so incredibly light and thermally efficient.

Appearance

Fibo 850/950 has an open textured surface which is ideal for applying plaster and render. It has a face size of 440mm x 215mm in 100mm and 140mm widths and is produced in solid form only.

Standards

Fibo 850/950 blocks are BSI Kitemarked approved to BS EN 771-3. They are Category 1 masonry units manufactured under a BSI certified Quality System complying with BS EN 9001.

Applications

Fibo 850/950 is suitable for use in housing and extension projects. It can also be used to construct walls in other buildings where there is a requirement to specify blockwork with a low self-weight, eg., partition walls on floor slabs.

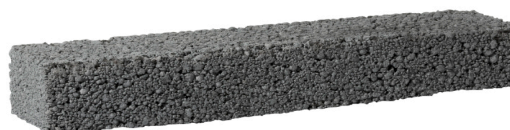
Fibo 850/950 can be considered for use in the following locations:

- Inner and outer leaves of external cavity walls
- Internal walls, including fire break walls
- High strength walls up to 7.3N using Fibo 950
- Internal walls below ground, such as the inner leaf of external cavity walls and interior walls. Fibo 950 can also be used in these locations as well as the outer leaf of external cavity walls

For use in separating walls meeting the requirements of Part E of the Building Regulations, we recommend the use of products from the Ashlite, Lignacite or Lignacrete ranges.



"Co-ordinating coursing block available"



Sustainability

Recycled content - Fibo 850 and 950 contains approximately 24% and 15% of recycled material respectively by volume. Recycled content subject to availability of materials.

Responsible sourcing - Lignacite Ltd operates its manufacturing plants to a BSI certified Environmental Management System (EMS) complying with ISO 14001. Lignacite Ltd. complies with the requirements of BES 6001 – Framework Standard for the Responsible Sourcing of Construction Products, Certificate No: BES 580823. This independently confirmed Responsible Sourcing Certification provides re-assurance to our customers that they are procuring products responsibly and sustainably. Credits can also be gained under environment assessment schemes such as BREEAM and the Code for Sustainable Homes.

Environmental ratings - Summary green guide ratings applicable to Fibo 850/950 blocks can be obtained from the BRE Green Guide to Specification.

Unit and laid weight

Typical units and laid weight for Fibo 850/950 are shown in Table 2.

Block Weights - Table 2

	Width (mm)	Unit Weight (kg)	Laid Weight (kg/m ²)
Fibo 850	100	8.5	96
Fibo 850	140	11.9	134
Fibo 950	100	9.5	106
Fibo 950	140	13.3	148

Note: 3% moisture content (m/c) should be used for protected locations such as the inner leaf, and 5% for exposed locations such as the outer leaf when rendered.

Thermal Resistance

The thermal resistance values (m²K/W) for Fibo 850/950 are shown in Table 3. The values are derived by dividing the block thickness by its thermal conductivity (W/mK).

Thermal Resistances - Table 3

	Width (mm)	Thermal Resistance (m ² K/W)	
		3% m/c	5% m/c
Fibo 850	100	0.37	0.35
Fibo 850	140	0.52	0.48
Fibo 950	100	0.32	0.29
Fibo 950	140	0.45	0.41

Note: 3% moisture content (m/c) should be used for protected locations such as the inner leaf, and 5% for exposed locations such as the outer leaf when rendered.

Sound Insulation

Sound insulation values for Fibo 850/950 blockwork are shown in Table 4. For use in party walls satisfying Part E of the Building Regulation, other products from Lignacite Ltd are recom-

Sound Reduction - Table 4

	Width (mm)	Sound Reduction Index Rw (dB)	
		Lt/tweight Plaster	Plasterboard on dabs
Fibo 850	100	40	42
Fibo 850	140	42	44
Fibo 950	100	41	43
Fibo 950	140	43	45

Note: 1. The Above values are based upon technical assessments and test to BS EN ISO 140-3.

Note: 2. Surface finishes are assumed to be applied to both wall surfaces. Plasterboard is 12.5mm thick.

Fire Resistance

The fire resistance periods of Fibo 850/950 loadbearing and non-loadbearing walls are shown in Table 5.

This data is only valid for walls complying with BS EN 1996 Part 1-1, Part 2 and Part 3. For walls designed in accordance with BS 5628, fire resistance values can be confirmed with our Technical Department.

The thicknesses given in Table 5 are for masonry alone, excluding finishes. For the fire resistance of walls with finishes, refer to the Lignacite Design Guide – Fire Resistance.

Fire resistance of Fibo 850/950 blocks - Table 5

Solid blocks (Group 1 units) - no finish	Non-loadbearing wall (criteria E1)	Loadbearing wall (criteria RE1)	
		$\alpha \leq 1.0$	$\alpha \leq 0.6$
100mm	3 hour	2 hours	3 hours
140mm	4 hours	3 hours	4 hours

Note:

1. These Tables are only valid for walls complying with BS EN 1996 Part 1-1, Part 2 and Part 3. For walls designed in accordance with BS 5628, fire resistance values from that Standard are available on request.

2. Criteria E1 refers to walls with a separating function. Criteria RE1 refers to walls with a separating and loadbearing function.

Thermal insulation

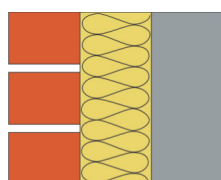
Fibo 850/950 blocks can be used to satisfy the requirements of Part L of the Building Regulations.

Presented are the U-values for a range of wall constructions based on 100mm Fibo 850/950 blocks in conjunction with full and partial cavity insulation. The outer leaf is facing brick, but a rendered block outer leaf will usually achieve at least the same U-value.



For constructions using Fibo 950 blocks, our Technical Department (tel 01842 810678) can provide supporting U-value calculations; the results will be very similar to those shown in the Tables.

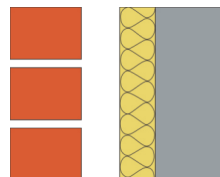
Full Cavity Fill and 100mm Fibo 850/950 blocks



U-values (W/m²K)

Cavity fill type	Internal finish	
	12.5mm plaster-board on dabs	13mm lightweight plaster
100mm DriTherm Cavity Slab 32 Ultimate	0.25	0.26
100mm DriTherm Cavity Slab 34 Super	0.27	0.27
100mm Isover CWS 32	0.25	0.26
100mm Isover CWS 36	0.28	0.29
100mm Xtratherm Cavity Therm	0.18	0.19
100mm Kingspan Kooltherm K106	0.17	0.17
125mm DriTherm Cavity Slab 32 Ultimate	0.21	0.22
125mm DriTherm Cavity Slab 34 Super	0.22	0.23
125mm Isover CWS 32	0.21	0.22
125mm Isover CWS 36	0.23	0.24
125mm Xtratherm Cavity Therm	0.15	0.15

Partial Cavity Fill and 100mm Fibo 850/950 blocks



U-values (W/m²K)

Cavity fill type	Internal finish	
	12.5mm plaster-board on dabs	13mm lightweight plaster
50mm Celotex CW4000	0.26	0.27
50mm Kingspan Kooltherm K108	0.23	0.24
60mm Celotex CW4000	0.24	0.24
60mm Kingspan Kooltherm K108	0.21	0.21
75mm Celotex CW4000	0.21	0.21
75mm Kingspan Kooltherm K108	0.18	0.18

Notes to tables:

1. The U-values shown are based on the use of various proprietary insulation products. Alternative products can be used, provided they can achieve an equivalent thermal resistance (m²K/W).
2. Wall ties are assumed to be stainless steel with a cross-sectional area of no more than 12.5mm² for structural cavities up to 125mm wide.
3. The suitability of full fill cavity insulation materials will depend on exposure conditions and should be confirmed by the designer. For partial cavity fill, a 50mm residual should be maintained. In some cases it may be possible to reduce the cavity width to a minimum of 25mm. The insulation manufacturer should be consulted for guidance.

Thermal Bridging

A significant factor in thermal assessments is the heat loss through thermal bridges (known as non-repeating or linear thermal bridges).

These occur at junctions between elements or where the continuity of the external fabric insulation is interrupted (e.g. at junctions with external walls, floors and roof). Assessors will need to apply a PSI (y) value to the particular junction being measured.

The Concrete Block Association (CBA) have developed a comprehensive set of junctions that have been independently assessed. The results clearly demonstrate that constructions using Fibo850/Fibo950 aggregate blocks can be assigned improved performance when compared to the Government's Accredited Construction Details and Default values shown in Appendix K of SAP 2012.

Thermal Bridging (cont)

As a member of the CBA, Lignacite Ltd is able to advocate the use of these enhanced bridging details. This information will be of interest to designers and SAP assessors as well as builders who will have the responsibility for correctly constructing the various junctions.

Junction details and PSI (y) values can be accessed at www.cba-blocks.org.uk

Design

The design of walls incorporating Fibo 850/950 should be in accordance with relevant design standards including BS 8103: Parts 2 and BS EN 1996-1-1 and the requirements of the Building Regulations.

Movement Control

Movement joints should be considered in accordance with PD 6697 at approximately 6.0 metre spacings. In areas of concentrated stress, such as those above and below openings, consideration should be given to the use of bed joint masonry reinforcement.

Mortar

The mortar type for work above ground level should be designation (iii) / Compressive Class M4. Stronger mixes may be used only with the permission of the designer. Stronger mixes may also be required for work below ground in accordance with PD 6697.

Surface Finish Recommendations

Drylining - Application to be as manufacturer's recommendations.

Dense Plaster - Apply either 1:1:6 cement:lime:sand or 1:4 Masonry cement:sand or 1:5 cement:sand and plasticiser. Alternatively: Thistle Bonding or Thistle Hardwall or Knauf Ultimate backing plaster.

Finishing Coats - Thistle plaster finish or Thistle multi-finish or Knauf Multi cover.

External Rendering - Rendering to be in accordance with BS EN 13914-1. Avoid over strong mixes. Ensure the first coat of render is applied to a greater thickness than successive coats. Ensure the first coat of render is applied to a greater thickness than

successive coats.

Builders considering the use of proprietary render systems must exercise caution to accurately adhere to the render manufacturers' design and specification instructions. Detailed guidance is also published in the NHBC Standards, Chapter 6.11- Render.

Strictly adhere to the specific application instructions, paying particular attention to prevailing weather conditions and the

Accreditations

