

'The Carbon Buster' is made up of more than **50%** recycled material.

This includes the Carbon8 pellets which are produced by combining CO₂, sand, cement and water. The result is a unique aggregate that, when incorporated into Lignacite's products, creates the first ever carbon negative building block.

- Incorporates recycled and carbonated aggregates from by-products
- Captures more CO₂ than is emitted during its manufacture
- Invented and made in Britain
- Key to meeting zero carbon home targets
- Suitable for facing and general purpose applications.

Reducing Embodied Carbon

Clients and specifiers are increasingly looking at the embodied carbon of materials that are used and their end of life carbon impacts. Current Part L energy efficiency standards do not consider this aspect but as buildings continue to become more energy efficient so the relative importance of whole life carbon emissions in buildings increases. The Carbon Buster block has been developed with low carbon impact as its main benefit. This is achieved not only by using carefully selected raw materials, but by incorporating lightweight aggregates, including graded wood particles, that sequester a large amount of carbon dioxide (CO₂). Carbon sequestration is the process of capturing and storing of atmospheric carbon dioxide. In this context Carbon Buster can be described as a carbon reservoir.

Carbon Buster's carefully selected combination of raw materials result in a walling product that is carbon neutral and therefore can be specified for building projects that aim to achieve a low carbon design.

Carbon Methodology and Authority

The methodology used to determine the carbon footprint of Carbon Buster as well as other products, is PAS 2050:2011 'Specification for the assessment of the life cycle greenhouse gas emissions of goods and services'. The Study to assess carbon footprinting values was conducted by the School of Science, University of Greenwich Comparison of Building Materials. The performance of Carbon Buster can be compared to other building materials by reference to Table A opposite. Embodied energy for comparison purposes is based on 'Cradle-to-Grave' but excluding transport from factory gate to the construction site.

The new and unique Carbon Negative BLOCK

Carbon Footprint up to **-14kg** of CO₂ per tonne

up to **55%** of aggregate by volume is recycled

Recycled content for specific details please contact the branch.

Table - Embodied CO₂ for Carbon Buster and other building materials.

Block Weights - Table A

Material	Embodied CO ₂ (kg/tonne)
Concrete - typical	130
Common Bricks	220
Carbon Buster 3.6N/mm ²	-14
Carbon Buster 7.3N/mm ²	-3

Note: Data for generic materials taken from the 'Inventory of Carbon and Energy (ICE)', University of Bath.

General Properties - Table 1

Face Size	440mm x 215mm	
Dimensional Tolerances	Category: D1	
Mean Unit Strength	3.6N/mm ²	7.3N/mm ²
Net Dry Density	1450kg/m ³	
Thermal Conductivity @ 3% moisture content	0.79 W/mK	
Moisture Movement	<0.8mm/m	
Reaction to Fire	Class A1	
Air Tightness	100mm solid (bare) - 4.17 m ³ /hr/m ²	140mm SP (bare) - 4.62 m ³ /hr/m ²
Configuration	Solid Blocks: Group 1	

- For use internally and externally above and below ground
- High levels of air tightness, sound insulation and fire resistance.

Carbon Buster block is available in Standard grade, for locations where the surface will not be visible e.g. plastered.



Appearance

Carbon Buster blocks are medium grey in colour with an open textured surface.

Standards

Carbon Buster 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

Carbon Buster blocks are suitable for use in commercial and housing projects. Carbon Buster blocks can be used in the following locations:

- The inner and outer leaves of external cavity walls
- Internal walls including fire break walls
- Separating walls including those conforming to Robust Detail specifications
- External and internal walls below ground (3.6N/mm² blocks can be used in both inner leaf and internal walls; 7.3/mm² blocks to other locations)

Sound Insulation

Carbon Buster blockwork provides excellent levels of sound insulation between buildings and adjoining rooms. It can be used in cavity party wall constructions in dwellings, satisfying the specifications for lightweight blockwork in accordance with Approved Document E to the Building Regulations. It can also be used to construct party walls meeting Robust Detail specifications eg. Robust Details E-WM-2, 4, 8, 11,14, 17, 19, 20, 21 and 22.

Sustainability

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 Lignacite blocks can be obtained from the BRE Green Guide to Specific Guide to Specification.

Design

The design of walls incorporating the Carbon Buster block should be in accordance with relevant design standards including BS 8103 Part 2 and BS EN 1996-1-1 and requirements of the Building Regulations.

Surface Finish Recommendations

Drylining - Application to be as manufacturer's recommendations.

Dense Plaster - Apply either 1:1:6 cement:lime:sand or 1:4 ½ Masonry cement:sand or 1:5 ½ 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. An initial spatterdash coat is advisable, consisting of 1 part cement, 1 part sand, gauged with a proprietary bonding agent (SBR). Builders considering the use of proprietary single coat render systems must exercise caution to accurately adhere to the render manufacturers' design and specification guides. Furthermore, during application, strictly adhere to the specific and expansive application instructions, paying particular attention to prevailing weather conditions applied thereto. **PLEASE NOTE that traditional rendering applications are not so seasonally and conditionally demanding.**

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 PP 6697.

Block Weights - Table 2

Width (mm)	Form	Unit Weight (kg)	Laid Weight (kg/m ²)
100	Solid	14.9	159
140	Solid	19.2	206

Note: Weights are based on 3% moisture content by weight.

Sound Reduction - Table 4

Width (mm)	Form	Sound Reduction Index Rw (dB)	
		L/tweight Plaster	Dry Lined
100	Solid	47	47
140	Solid	51	51

Note:

- The above values are based on technical assessments and tests to BS EN ISO 140-3.
- Surface finishes are assumed to be applied to both wall faces.

Thermal Resistances - Table 3

Width (mm)	Form	Thermal Resistance (m ² K/W)	
		3% m/c	5% m/c
100	Solid	0.111	0.103
140	Solid	0.177	0.167

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.

Fire Resistances - Table 5

Width (mm)	Form	Fire Resistance (hours)	
		Loadbearing	Non Loadbearing
100	Solid	2	2
140	Solid	2	4

Note: The above values are for single leaf walls with no finish.

Accreditations

