

## LIGNALITE

Close textured Paint Grade blocks, conforming to manual handling guidelines, in a 190mm block width.

190mm width LignaLITE Paint Grade solid blocks have been developed for use in commercial buildings with the following advantages:

- Allows large panels to be designed reducing the need for wind posts or other structural framing - see Design
- For aesthetic applications where the blockwork is required to be directly decorated
- Conforms to the 20kg single lift guidance of the Construction (Design and Management) Regulations
- Use in loadbearing and non-loadbearing walls
- Good all round technical performance.

LignaLITE Paint Grade blocks have been developed to enable large internal walls to be built which, when compared to 100mm and 140mm width units, reduce the need for additional strengthening, such as that provided by wind posts or beams. They also offer the advantage of having a relatively low self-weight which can provide further economies in structural design. They can be used all types of commercial and leisure buildings including:

- Offices
- Warehouses
- Data Centres
- Sports Halls & Facilities
- Factory Units



*The 190mm paintgrade block*

**General Properties - Table 1**

Face Size	440mm x 215mm
Block Width	190mm
Dimensional Tolerances	Category: D1
Mean Unit Strength	3.6, 7.3N/mm <sup>2</sup>
Net Dry Density	1030 kg/m <sup>3</sup>
Thermal Conductivity @ 3% moisture content	0.37W/mK
Moisture Movement	<0.9mm/m
Reaction to Fire	Class A1
Configuration	Solid Block: Group 1
Air Tightness	Painted one face 9.1 m <sup>3</sup> /hr/m <sup>2</sup> : Painted two faces: 4.0m <sup>3</sup> /hr/m <sup>2</sup>
Specific Heat Capacity	1000 J/kg/K
Water Vapour Diffusion Coefficient	$\mu = 5/15$ (Tabulated value from BS EN 1745)

### Appearance

LignaLITE Paint Grade blocks are medium grey to buff in colour with a close texture surface suitable for the direct application of paint. They are available in solid form.

### Standards

LignaLITE 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

LignaLITE Paint Grade blocks are ideal to construct large internal walls in commercial projects. Walls can be load bearing or non-load bearing.

### Sustainability

**Responsible sourcing** - Lignacite Ltd operates its manufacturing plants to a BSI certified Environmental Management System (EMS) complying with ISO14001. 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.

**Environmental ratings** - Summary green guide ratings applicable to LignalITE blocks can be obtained from the BRE Green Guide to Specific Guide to Specification.

### Technical Performance - Table 2

The key performance of LignalITE blocks is shown in Table 2.

Property	Performance
Unit weight	19.1 kg
Laid weight inc. mortar	210 kg/m <sup>2</sup>
Thermal resistance	0.51 m <sup>2</sup> K/W
Weighted Sound Reduction Index Rw (dB)	No finish - 45 Rw (dB) Painted - 51 Rw (dB)
Fire resistance	4 hours loadbearing 4 hours non-loadbearing

#### Note:

- Unit and laid weights are based on 3% moisture content by weight.
- Sound insulation values for a painted finish are based on use of two coats of emulsion paint to one or both faces.
- Fire resistance in accordance with BS EN 1996-1-2:2005

### Design

Using 190mm LignalITE blocks allows large panel sizes to be designed with the potential to reduce the number of vertical or horizontal supports. Not only does this provide an immediate cost saving but improves continuity of the blockwork construction process. As fewer supports are needed, so the number of connecting ties are reduced and there are less joints to construct and fire stop. LignalITE walls also provide a high level of fire resistance, good levels of sound insulation and provide a strong background to secure fixings.

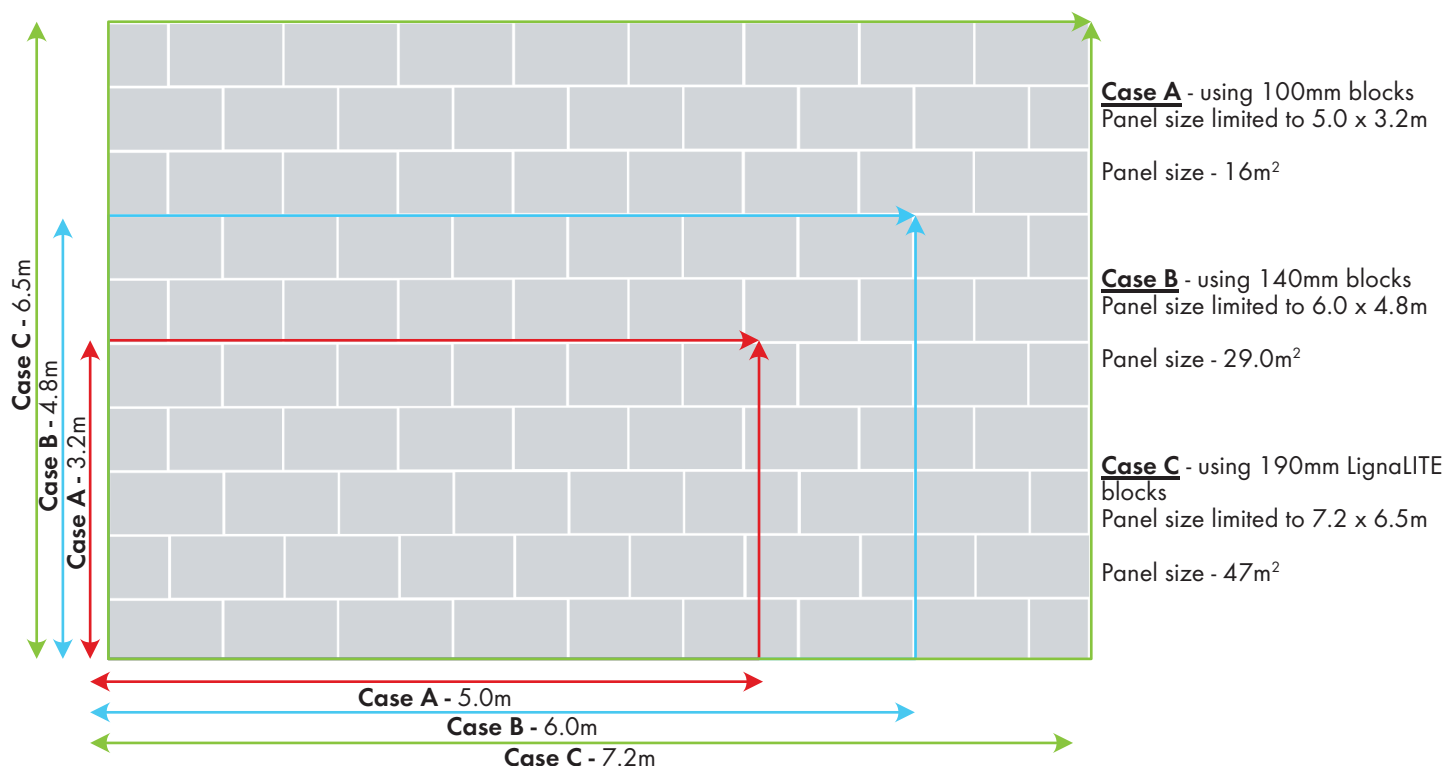
To illustrate the increase in masonry panel size that can be achieved using 190mm LignalITE blocks compared to 100mm and 140mm thickness units, the following example is provided.

### Comparison of panel sizes using 100mm, 140mm and 190mm (LignalITE)

For this comparison the following assumptions have been made:

- Blocks 7.3N/mm<sup>2</sup> compressive strength
- Mortar strength Class/Designation M4/(iii)
- All edges simply supported e.g. Use of metal ties
- No dimensions to exceed 50 times the wall thickness (BS 5628-1 recommendation)
- Blocks conform to special category manufacturing control
- Walls subject to a lateral pressure, e.g. Wind load,  $W_k$ , of 0.35 kN/m<sup>2</sup>

The results below illustrate that using 190mm LignalITE has the potential to increase the panel size by 290% compared to the 100mm blockwork, and 160% compared to 140mm blockwork.



#### Surface Finish Recommendations

**Decoration** - Walls can be directly painted using emulsion or cement based paints. For an economical finish, a mist coat and 2 further coats of emulsion will provide good coverage. Coverage will depend on the method of application e.g. brush or spray application.

**Drylining** - Where one side of the wall is required to be drylined, follow the manufacturer's recommendations.

**Dense Plaster** - Where one side of the wall is required to be finished with dense plaster, apply a backing coat comprising 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.

#### 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.

#### Accreditations

