



## DENSE PAINT GRADE

### Smooth Textured Paint Grade Blocks

The Dense Paint Grade finish provides a close-textured surface suitable for internal painted applications where appearance and consistency of texture of the painted wall is required. These blocks are not fair-faced or intended to be left unfinished as the consistency of shade and colour cannot be guaranteed.

All dense blocks are manufactured from high quality class 2 aggregates, consisting of up to 30% recycled raw material and are suitable for use above and below damp-proof course (DPC).

Dense Paint Grade blocks are manufactured to BS EN 771-3 and are ISO 9001 Quality Assured, ISO 14001 Environmentally Certified and hold BES 6001 Responsible Sourcing certification.

### TECHNICAL PROPERTIES

Property	Value
Face Size (BS EN 771-3):	440mm x 215mm
Dimensional Tolerance (BS EN 772-16):	Category D1
Gross Dry Density (BS EN 772-13):	1850 - 2100 kg/m <sup>3</sup>
Mean Compressive Strength (BS EN 772-1):	10.4 N/mm <sup>2</sup>
Manufacturing Category (BS EN 771-3):	Category II
Thermal Conductivity (BS EN 1745):	1.17 W/mK [inner leaf] 1.26 W/mK [outer leaf]
Moisture Movement (BS EN 772-14):	< 0.6 mm/m
Fire Resistance (BS EN 13501-1):	Class A1 reaction to fire
Configuration (BS EN 1996-1-1):	Solid - Group 1
Available Texture, Finish:	Paint Grade



### APPLICATIONS

- Manufactured to BS EN 771-3.
- Inner & outer leaf of external cavity walls.
- Internal partition walls.
- Acoustic separating party walls to Part E of the Building Regulations and Robust Details.
- Close-textured finish for internal painted applications.
- Robust, accepts most standard fixings.
- Unsuitable for external or unfinished fair-faced applications.

### PHYSICAL PROPERTIES

Block Size mm	'R' Value m <sup>2</sup> k/W	Walled Weight kg/m <sup>2</sup> See Note 1	Sound Reduction Rw, dB See Note 2	Block Weight kg See Note 3	Fire Resistance Hours See Note 4
75	0.07	151	45	14.3	2
90	0.08	179	47	17.2	3
100	0.09	199	48	18.8	4
140	0.12	278	51	26.6	4
215	0.19	427 *	55 *	40.5	4

1. Walled weight is for a single-leaf wall, plastered both sides. 215mm wall is a 100mm block laid flat.
2. Sound reduction  $R_w$  values are based on wall assuming a plastered finish both sides.
3. The block weights quoted above are approximate and include the typical additional weight from the moisture content.
4. Fire resistance periods to BS 5628-3 for a single-leaf, non-loadbearing plastered wall.

### PACK DETAILS

Block Size mm	Blocks per pack	m <sup>2</sup> per pack
75	96	9.6
90	80	8.0
100 (Void Pack)	72 (66)	7.2 (6.6)
140 (Void Pack)	48 (44)	4.8 (4.4)
215	32	3.2

Pack details may vary slightly between manufacturing locations. Always check details with your nearest sales office.

## Thermal

The table below shows examples of how cavity walls built with a solid Dense Paint Grade block inner leaf can meet a range of u-value targets. For specific calculations, please contact our technical department.

U Value W/m <sup>2</sup> K	Partially Filled Cavity Brick outer leaf   50mm clear cavity   plasterboard on dabs	Fully Filled Cavity Brick outer leaf   Fully filled cavity   plasterboard on dabs
<b>0.28</b>	45mm PIR/PU @ 0.018 55mm PIR/PU @ 0.022	100mm batt @ 0.032
<b>0.25</b>	50mm PIR/PU @ 0.018 65mm PIR/PU @ 0.022	125mm batt @ 0.034
<b>0.22</b>	60mm PIR/PU @ 0.018 75mm PIR/PU @ 0.022	125mm batt @ 0.030
<b>0.20</b>	70mm PIR/PU @ 0.018 85mm PIR/PU @ 0.022	100mm batt @ 0.021
<b>0.18</b>	80mm PIR/PU @ 0.018 95mm PIR/PU @ 0.022	150mm batt @ 0.030
<b>0.15</b>	100mm PIR/PU @ 0.018 120mm PIR/PU @ 0.022	100mm batt @ 0.021 + 35mm insulated drylining

## Acoustic

Dense Paint Grade blocks are suitable for use in acoustic separating party walls between dwellings and for internal partitions in accordance with Part E of the Building Regulations. They are also suitable for a range of Robust Standard Detail party walls. The figures below are predicted sound reduction ratings based on wall mass:

Block Thickness mm	Walled Weight kg/m <sup>2</sup>	Predicted Sound Reduction, Rw		
		Unfinished	Plastered	Dry Lined
75	151	45	45	45
90	179	47	48	48
100	199	48	49	49
140	278	51	52	52

## Below Ground

All of our aggregate and dense concrete blocks are durable products which are suitable for use in soil conditions up to Design Sulphate class DS-3 as defined in BRE Digest Special Digest 1. Dense Concrete blocks of any strength can be used below dpc.

## Fire Resistance

Dense Paint Grade blocks are non-combustible with zero spread of flame and are classed as Class 'A1' in accordance with BS EN 13501-1. Notional fire resistance periods are:

Block mm	Loadbearing Wall		Non-loadbearing Wall	
	No Finish	VG Plaster	No Finish	VG Plaster
90	1 hour	2 hours	1.5 hours	3 hours
100	2 hours	4 hours	2 hours	4 hours
140	2 hours	4 hours	3 hours	4 hours

"VG" = vermiculite / gypsum plaster or perlite plaster 13mm thick applied to both faces of single leaf walls.

NBS Codes for our concrete block products can be found on [www.source.thenbs.com](http://www.source.thenbs.com)

Product details and availability may vary between manufacturing locations. Please contact your nearest regional sales office for sales, product and technical advice.

North East Region :

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North West, Cheshire, Staffordshire and West Midlands Region :

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## Mortars

Dense Paint Grade blocks offer a good surface for accepting mortars and no pretreatment is required other than ensuring that all dirt and debris is removed. Generally, in order to avoid unsightly cracking, the weakest mortar mixture appropriate to the structural requirements should be selected as per BS 5628-3. For most applications, we recommend that grade iii mortar is used.

	BS 5628-3 Mortar Class	Recommended mix proportions of materials by volume (as per BS 5628-3)	
Above dpc	iii	1 : 1 : 5 to 6 1 : 5 to 6 1 : 4 to 5 1 : 3½ to 4	Cement : Lime : Sand Cement : Sand Masonry Cement : Sand (with non-lime filler) Masonry Cement : Sand (with lime filler)
		<i>A stronger (class ii) mix is preferred - see below</i>	
Below dpc	ii	1 : ½ : 4 to 4½ 1 : 3 to 4 1 : 2½ to 3½ 1 : 3½ to 4	Cement : Lime : Sand Cement : Sand Masonry Cement : Sand (with non-lime filler) Masonry Cement : Sand (with lime filler)

## External Rendering

Dense Paint Grade blocks have a very smooth close-textured surface and are not recommended for external rendering. For this application our standard-texture Dense blocks are more suitable.

## Suspended Block & Beam Floors

Solid Dense blocks of any strength are suitable for use as infill blocks in block and beam suspended floors and can be laid either 440mm wide or 215mm wide.

## Wall Ties & Movement Joints

Generally under normal conditions, wall ties should be embedded 50mm into the mortar on each leaf, staggered in alternate courses and spaced in accordance with the following:

Leaf Thickness mm	Cavity Width mm	Horizontal Spacing mm	Vertical Spacing mm	Ties per m <sup>2</sup>
Less than 90mm	50 - 75	450	450	4.9
Over 90mm	50 - 150	900	450	2.5

For unreinforced masonry panels, the typical recommended spacing between vertical movement joints is as follows:

Internal Walls: 8m – 12m      External Walls: 6m – 9m

## Good Site Practice & Safe Handling

- Packs should be stored on firm, level ground no more than 2 packs high and protected from severe weather to preserve their quality. Care must be taken when removing the plastic bands as individual blocks may fall out. Never un-band packs above shoulder height.
- In the absence of a revised version of the HSE guidance given in their withdrawn Construction Sheet 37 'Handling Building Blocks' the following principles should be followed: There is a risk of injury in the repetitive handling of blocks heavier than 20kg. Repetitive manual handling of blocks over 20kg should be subject to a risk assessment and a safe system of work should be established before block-laying commences.
- Blocks should not be laid if the temperature is at or below 3°C and falling.
- Blocks should always be laid on a full bed of mortar and vertical joints filled.



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