

Plasmor Concrete Block Weights and Safe Handling



Plasmor Block Weights at 3% moisture

shown as Unit Block Weight - kg / Weight of m² wall - kg

FIBOLITE

Type	Strength (N/mm ²)	Block Width / Weight of m ² wall													
		75mm	m ²	90mm	m ²	100mm	m ²	125mm	m ²	140mm	m ²	190mm	m ²	215mm	m ²
Solid	3.6	6.2	71	7.5	85	8.3	95	10.4	118	11.7	133	15.8	180	17.9	204
	7.3	7.0	79	8.3	93	9.3	105	11.6	130	13.0	146	17.6	198	19.9	224

AGLITE

Type	Strength (N/mm ²)	Block Width / Weight of m ² wall													
		75mm	m ²	90mm	m ²	100mm	m ²	125mm	m ²	140mm	m ²	190mm	m ²	215mm	m ²
Solid	4.2/7.3	7.7	86	9.2	102	10.2	114	12.8	142	14.3	159	19.4	216	22.0	245
	10.4	8.4	93	10.0	110	11.2	124	14.0	154	15.6	172	21.2	234	24.0	265

STRANLITE

Type	Strength (N/mm ²)	Block Width / Weight of m ² wall													
		75mm	m ²	90mm	m ²	100mm	m ²	125mm	m ²	140mm	m ²	190mm	m ²	215mm	m ²
Solid	4.2/7.3	10.1	110	12.2	132	13.5	147	16.9	183	18.9	205	25.7	279	29.1	316
	10.4	10.5	114	12.6	136	14.0	152	17.5	189	19.6	212	26.6	288	30.1	326
	15	10.9	118	13.0	140	14.5	157	18.1	195	20.3	219	27.5	297	31.1	336
	21	11.2	121	13.5	145	14.9	161	18.7	201	20.9	225	28.4	306	32.1	346
Hollow	7.3/10.4	-	-	-	-	10.0	107	-	-	12.9	139	14.9	162	17.5	189

STRANLITE PAINT GRADE

Type	Strength (N/mm ²)	Block Width / Weight of m ² wall													
		75mm	m ²	90mm	m ²	100mm	m ²	125mm	m ²	140mm	m ²	190mm	m ²	215mm	m ²
Solid	7.3	10.1	110	12.2	132	13.5	147	16.9	183	18.9	205	25.7	279	29.1	316
	10.4	10.5	114	12.6	136	14.0	152	17.5	189	19.6	212	26.6	288	30.1	326
	15	10.9	118	13.0	140	14.5	157	18.1	195	20.3	219	27.5	297	31.1	336
	21	11.2	121	13.5	145	14.9	161	18.7	201	20.9	225	28.4	306	31.1	346
Hollow	7.3/10.4	-	-	-	-	10.0	107	-	-	12.9	139	14.9	162	17.5	189

PLASCON

Type	Strength (N/mm ²)	Block Width / Weight of m ² wall													
		75mm	m ²	90mm	m ²	100mm	m ²	125mm	m ²	140mm	m ²	190mm	m ²	215mm	m ²
Solid		14.0	149	16.9	179	18.7	199	23.4	248	26.2	278	35.6	378	40.3	428
Hollow	7.3/10.4	-	-	-	-	13.5	142	-	-	17.8	188	20.6	219	24.2	256
Multicore	7.3/10.4	-	-	-	-	-	-	-	-	18.8	204	-	-	-	-

ARCHITECTURAL MASONRY

Type	Strength (N/mm ²)	Block Width / Weight of m ² wall													
		75mm	m ²	90mm	m ²	100mm	m ²	125mm	m ²	140mm	m ²	190mm	m ²	215mm	m ²
Solid	17.5	-	-	18.0	190	19.9	211	-	-	28.0	296	-	-	-	-
Hollow	10.4	-	-	-	-	14.7	154	-	-	18.0	190	22.0	233	25.0	264
Multicore	10.4	-	-	-	-	-	-	-	-	19.8	218	-	-	-	-

Typical maximum block weights as delivered

FIBOLITE

Type	Strength (N/mm ²)	Block Width						
		75mm	90mm	100mm	125mm	140mm	190mm	215mm
Solid	3.6	7.5	9.0	10.0	12.5	14.0	19.0	21.5
	7.3	8.3	9.9	11.0	13.8	15.4	20.9	23.7

AGLITE

Type	Strength (N/mm ²)	Block Width						
		75mm	90mm	100mm	125mm	140mm	190mm	215mm
Solid	4.2/7.3	9.2	11.0	12.2	15.3	17.1	23.2	26.2
	10.4	9.8	11.7	13.0	16.3	18.2	24.7	28.0

STRANLITE

Type	Strength (N/mm ²)	Block Width						
		75mm	90mm	100mm	125mm	140mm	190mm	215mm
Solid	4.2/7.3	10.7	12.8	14.2	17.8	19.9	27.0	30.5
	10.4	11.6	13.9	15.4	19.3	21.6	29.3	33.1
	15	12.0	14.2	15.8	19.8	22.1	30.0	34.0
	21	12.0	14.4	16.0	20.0	22.4	30.4	34.4
Hollow	7.3/10.4	-	-	10.8	-	15.1	20.5	23.2

STRANLITE PAINT GRADE

Type	Strength (N/mm ²)	Block Width						
		75mm	90mm	100mm	125mm	140mm	190mm	215mm
Solid	7.3	10.7	12.8	14.2	17.8	19.9	27.0	30.5
	10.4	11.4	13.7	15.2	19.0	21.3	28.9	32.7
	15	11.9	14.2	15.8	19.8	22.1	30.0	34.0
	21	12.3	14.8	16.4	20.5	23.0	31.2	35.3
Hollow	7.3/10.4	-	-	10.7	-	14.0	17.0	18.3

PLASCON

Type	Strength (N/mm ²)	Block Width						
		75mm	90mm	100mm	125mm	140mm	190mm	215mm
Solid	7.3/10.4	14.9	17.8	19.8	24.8	27.7	37.6	42.6
Hollow	7.3/10.4	-	-	14.7	-	18.0	22.0	25.0
Multicore	7.3/10.4	-	-	-	-	20.0	-	-

ARCHITECTURAL MASONRY

Type	Strength (N/mm ²)	Block Width						
		75mm	90mm	100mm	125mm	140mm	190mm	215mm
Solid	7.3/10.4	-	18.0	19.9	-	28.0	-	-
Hollow	7.3/10.4	-	-	00.0	-	00.0	00.0	00.0
Multicore	7.3/10.4	-	-	-	-	19.8	-	-

Plasmor are committed to minimising the weight of its range of building blocks to improve the safe handling of blocks in compliance with Health and Safety requirements.

Health and Safety Executive legislation exists to ensure the safe manual handling of blocks and safe working practices. The Construction (Design and Management) Regulations places mandatory Health and Safety procedures on clients, specifiers and contractors and duties on employers to carry out risk assessments on all manual handling tasks.

The Health and Safety Executive Construction Sheet 37 entitled "Handling Building Blocks" advises that:

- The single-handed repetitive manual handling of blocks heavier than 20kg poses a risk of injury.
- Blocks weighing greater than 20kg should be handled either mechanically or by a 2-person team if they are to be handled repetitively.
- To reduce the risk of injury, the blockwork design and the management of site conditions should be properly planned.

NB The HSE guidance does not prevent an individual handling manually, small numbers of units of greater than 20kg. In particular, ancillary units such as quoins or reveals or detailing "specials" would fall into this category.

NOTE: For block strength and thicknesses not included in the above tables, please consult our Technical Helplines

Safe Handling and Use

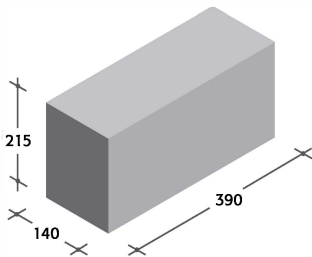
Enabling Plasmor to minimise block weights is the use of Plasmor's own unique, ultra lightweight expanded clay aggregate and sophisticated aggregate mix designs. This produces a high proportion of the Plasmor block range with weights of less than 20kg.

Where blocks of greater than 20kg weight need to be specified, there are 4 key considerations.

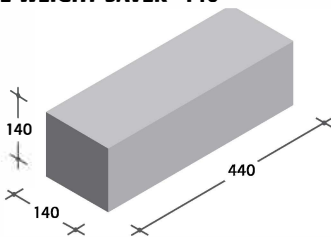
- 1 Adopt HSE recommendations for the repetitive handling of greater than 20kg units.**
- 2 Consider using Plasmor Metric Modular, hollow or cellular/multicore blocks. These blocks have almost identical properties to solid units and are of lower weight without compromising performance.**



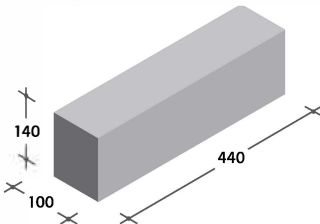
THE WEIGHT SAVER - HIGH STRENGTH



THE WEIGHT SAVER - 140



THE WEIGHT SAVER - 100



3. Choose from Plasmor's recently developed range of weight saving, innovative, "size and strength specific" sub 20kg blocks for specific applications. Examples of these blocks are shown here.

4. Another consideration for the use of blocks heavier than 20kg is to employ alternative construction techniques such as:

- a) laying blocks flat to form a 190 or 215mm width wall which is suitable for plastering or drylining finishes.
- b) blocks can be collar jointed to form a 190 or 215mm width wall, particularly suited to facing applications.

Collar jointing is laying units back to back in normal aspect with a 10-15mm cavity between the adjoining faces of the units.

The cavity should not be filled with mortar. The two leaves may be tied together.

If tied either normal ties or bed joint reinforcement may be used.

Collar jointed walls are not suitable for separating walls in dwellings.

Alternatives to full width solid units of greater than 20kg

REQUIRED WALL THICKNESS	BLOCK OPTIONS	CONSTRUCTION OPTIONS
140mm	140mm cellular or hollow (25% - 50% lighter than solid) 140mm solid units having a smaller face size eg. Metric Modular	
190mm	190mm cellular or hollow (25% - 50% lighter than solid)	i) 2 x 90mm leaves of solid units collar jointed ii) 390mm x 190mm x 100mm solid units laid flat
215mm	215mm cellular or hollow (25% - 50% lighter than solid)	i) 2 x 100mm leaves of solid units collar jointed ii) 440mm x 21mm x 100mm solid units laid flat

Guidance for Designers (based on test data and BS 5628: Part 1)

TABLE ONE Using a designation (i) mortar (440mm x 215mm face size units unless otherwise specified)						TABLE TWO Using a designation (iii) mortar (440mm x 215mm face size units unless otherwise specified)							
f_k values (characteristic wall compressive strength) for solid, cellular and multicore units						f_k values (characteristic wall compressive strength) for solid, cellular and multicore units							
UNIT STRENGTH (N/mm ²)						UNIT STRENGTH (N/mm ²)							
	3.6	7.3	10.4	15	10.0		3.6	7.3	10.4	15	10.0		
140mm Solid	2.9	5.7	7.4	7.4	10.0	140mm Solid	2.9	5.4	6.9	8.4	8.4		
140mm Cellular/Multicore	2.9	4.9	5.5	6.5	6.5	140mm Cellular/Multicore	2.9	4.7	5.0	5.5	5.5		
190mm Solid	2.4	4.7	6.1	8.3	8.3	190mm Solid	2.4	4.4	5.7	6.9	6.9		
190mm Cellular/Hollow	2.4	4.3	5.0	6.3	6.3	190mm Cellular/Hollow	2.4	4.0	4.6	5.3	5.3		
215mm Solid	2.2	4.4	5.7	7.7	7.7	215mm Solid	2.2	4.1	5.3	6.4	6.4		
215mm Cellular/Hollow	2.2	4.1	4.9	6.2	6.2	215mm Cellular/Hollow	2.2	3.8	4.5	5.2	5.2		
f_k values (characteristic wall compressive strength) for collar jointed walls						f_k values (characteristic wall compressive strength) for collar jointed walls							
UNIT STRENGTH (N/mm ²)						UNIT STRENGTH (N/mm ²)							
	3.6	7.3	10.4	15	21	35		3.6	7.3	10.4	15	21	35
190mm wall	2.4	4.7	6.1	8.3	10.2	15.7	190mm wall	2.4	4.4	5.7	6.9	8.0	11.7
215mm wall	2.2	4.4	5.7	7.7	9.5	14.7	215mm wall	2.2	4.1	5.3	6.4	7.5	10.9
f_k values (characteristic wall compressive strength) for units laid flat						f_k values (characteristic wall compressive strength) for units laid flat							
UNIT STRENGTH (N/mm ²)						UNIT STRENGTH (N/mm ²)							
	3.6	7.3	10.4	15	21	35		3.6	7.3	10.4	15	21	35
190mm wall*	2.7	5.3	5.9	8.1	10.0	15.4	190mm wall*	2.7	4.9	5.5	6.8	7.8	11.5
215mm wall	2.8	5.4	6.2	8.4	10.4	16.0	215mm wall	2.8	5.1	5.7	7.0	8.1	11.9

* 390mm x 190mm x 100mm blocks

* 390mm x 190mm x 100mm blocks