THOMAS ARMSTRONG
(CONCRETE BLOCKS) LTD

ARMSTART

Medium Density Foundation Blocks

Widely used across the building industry, Armstart blocks offer an efficient, simple and cost-effective method of foundation wall construction below dpc saving on labour, mortar and time with blocks weighing less than 20kg for safer repetitive manual handling.

All medium dense blocks are manufactured from high quality aggregates consisting of up to 90% recycled raw material and are suitable for use above and below damp-proof course (DPC).

Armstart blocks are manufactured to BS EN 771-3 and are ISO 9001 Quality Assured, ISO 14001 Environmentally Certified and hold BES 6001 'Excellent' Responsible Sourcing.

TECHNICAL PROPERTIES

Property	Value
Face Size (L x W x H) (BS EN 771-3):	300mm x 250mm x 140mm 300mm x 275mm x 140mm 320mm x 280mm x 140mm 350mm x 250mm x 140mm 350mm x 215mm x 140mm
Dimensional Tolerance (BS EN 772-16):	Category D1
Gross Dry Density (BS EN 772-13):	1450 - 1550 kg/m³
Mean Compressive Strength (BS EN 772-1):	7.3 N/mm² (Higher strengths are available to order)
Manufacturing Category (BS EN 771-3):	Category II
Thermal Conductivity (BS EN 1745):	0.49 W/mK
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:	Standard

bsi. ISO 9001 Quality Management FS 665648 · ISO 14001 Environmental Management EMS 665649 · BES 6001 Responsible Sourcing of Construction Products BES 665651 BES 665634

APPLICATIONS

- Manufactured to BS EN 771-3.
- Solid foundation walls 250mm to 350mm wide to support walls with cavities from 75mm to 150mm.
- A faster, simpler and safer method to construct foundation walls compared to cavity walls below dpc.
- No wall ties required, no cavity filling and no risk of collapsed cavities.
- Suitable for use in soil conditions up to DS-3 as defined in BRE Special Digest 1.
- A range of widths and strengths available all weighing less than 20kg.

PHYSICAL PROPERTIES & PACK DETAILS

Block Size mm	Block Weight kg See Note 1	Blocks per pack See Note 2	Blocks per m² See Note 2	Blocks per Linear m² See Note 2	Linear m² per pack See Note 2	Laying Orientation
300 x 250	16.2	72	21.5 25.6	3.23 3.85	22.32 18.72	If walled 300mm length (a 250mm wide wall) If walled 250mm length (a 300mm wide wall)
300 x 275	17.7	72 / 63	21.5 23.4	3.23 3.51	22.32 / 19.53 20.52 / 17.96	If walled 300mm length (a 275mm wide wall) If walled 275mm length (a 300mm wide wall)
320 x 280	19.2	54	20.2 23.0	3.03 3.45	17.82 15.66	If walled 320mm length (a 280mm wide wall) If walled 280mm length (a 320mm wide wall)
350 x 250	18.8	48 / 56	18.5 25.6	2.78 3.85	17.28 / 20.16 12.48 / 14.56	If walled 350mm length (a 250mm wide wall) If walled 250mm length (a 350mm wide wall)
350 x 215	16.2	70	29.6	4.44	15.75	Walled 215mm length (a 350mm wide wall)

Note 1.

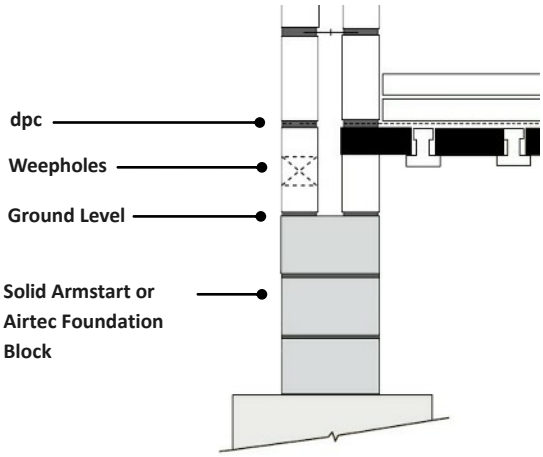
Block weights quoted are approximate and include the typical additional weight from the natural moisture content although this can vary slightly.

Note 2.

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

The m² figures include the conventional 10mm mortar joint.

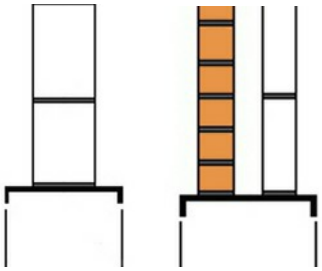
Typical Solid Foundation Wall Construction



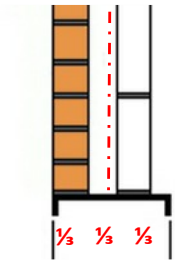
Position of Walls on Foundation Walls

BS 8103-1 "Structural Design of Low Rise Buildings" gives some general rules of thumb for the construction of foundation walls and the positioning of cavity solid walls above dpc.

In general, walls should be positioned so that the vertical centre line of the wall aligns with the vertical centre line of the foundation wall as shown on the diagram opposite:



Where the external face of the wall is at or near to the edge of the foundation block, it is sufficient to ensure that the vertical centre line of the wall is within the middle third of the foundation width.



It is not recommended that the wall above the foundation should overhang the width of the foundation block below.

Mortars

Generally the weakest mortar mixture appropriate to the structural requirements should be selected as per BS 5628-3. Below dpc, a grade ii or iii mortar may be used, the stronger grade ii mix being preferred in most circumstances.

	BS 5628-3 Mortar Class	Recommended mix proportions of materials by volume (as per BS 5628-3)	
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)

Soil Conditions

Armstart solid foundation blocks are durable and are suitable for soil conditions up to DS-3 as defined in BRE Special Digest 1.

Current building practice is such that wherever masonry is used below ground level it is usually limited to the top 1 meter depth. At the same time, sulphate levels in the top 1 meter of UK soils are rarely more severe than class DS-1. It follows that the depth at which samples are taken to enable the sulphate soil classification to be determined should be indicative of the depth where the masonry is being used. BRE Special Digest 1 draws attention to this.

Research by the BRE and the Concrete Block Association has shown that surface carbonation of aggregate blocks enhances their sulphate resistance, the requirement being that blocks are surface carbonated for a minimum of 10 days. Such exposure to air and surface carbonation will always take place without any special provisions between the time of manufacture of the block and back-filling after construction.

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.
- Do not wet the blocks before laying. Where necessary, adjust the consistency of the mortar to suit the suction of the block.

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