THOMAS ARMSTRONG
(CONCRETE BLOCKS) LTD

AIRTEC XL

2.9N Aerated Concrete Blocks

Airtec XL aerated concrete blocks possess the best thermal properties of any solid concrete blocks in the UK with a thermal conductivity of only 0.09W/mK. Weighing as little as 6.3kg for a 620mm long block and with the best possible dimensional category of 'TLMB', they offer unrivalled physical and technical properties.

All Airtec blocks are manufactured from high quality materials, consisting of up to 90% recycled raw material and are suitable for use above and below damp-proof course.

Airtec blocks are manufactured to BS EN 771-4 category I manufacturing, BBA certified and are ISO 9001 Quality Assured, ISO 14001 Environmentally Certified and hold BES 6001 'Excellent' Responsible Sourcing.

TECHNICAL PROPERTIES

Property	Value
Face Size (BS EN 771-4):	620mm x 215mm
Dimensional Tolerance (BS EN 772-16):	TLMB
Gross Dry Density (BS EN 772-13):	460 (±50) kg/m³
Mean Compressive Strength (BS EN 772-1):	2.9 N/mm²
Manufacturing Category (BS EN 771-4):	Category I
Thermal Conductivity (BS EN 1745):	0.09 W/mK [inner leaf] 0.10 W/mK [outer leaf]
Moisture Movement (BS EN 771-4):	0.40 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

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 08/4309

APPLICATIONS

- Inner & outer leaf of external cavity walls. Not suitable for unfinished external applications.
- External solid walls.
- Internal partition walls.
- Standard texture finish provides an excellent surface for mortars, renders and plasters.
- Low weight and 620mm long meaning faster, safer block laying.
- Suitable for both conventional 10mm and Thin-Joint mortar construction.

PHYSICAL PROPERTIES

Block Size mm	'R' Value m²k/W	Walled Weight kg/m² See Note 1	Sound Reduction Rw, dB See Note 2	Block Weight kg See Note 3	Fire Resistance Hours See Note 4
100	1.11	54	38	6.3	4
115	1.28	62	39	7.3	4
125	1.39	67	40	7.9	4
140	1.56	76	41	8.8	4
190	2.11	101	43	12.0	6
215	2.39	117	44	13.5	6

1. Walled weight is for a single-leaf wall, plastered both sides.
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 EN 1996-1-2 for a single-leaf, non-loadbearing plastered wall.

PACK DETAILS

Block Size mm	Blocks per pack	m² per pack	Weight per Pack kg	Blocks per m²
100	56	7.94	433	7.05
115	48	6.80	426	7.05
125	48	6.80	464	7.05
140	40	5.67	433	7.05
190	32	4.54	444	7.05
215	28	3.97	428	7.05

The m² per pack shown above includes the 10mm conventional mortar joint. Figures will be less if using thin-joint mortar by approximately 4.8%.

Some block sizes and strengths are made to order. Please check with our sales office on block availability as far in advance as possible before the blocks are required.

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Thermal

The table below shows examples of how cavity walls built with an Airtec XL Block inner leaf can meet a range of u-value targets. For specific calculations, please contact our technical department.

U Value W/m²K	Partially Filled Cavity Brick outer leaf | 50mm clear cavity | plasterboard on dabs	Fully Filled Cavity Brick outer leaf | Fully filled cavity | plasterboard on dabs
0.28	30mm PIR/PU @ 0.018 35mm PIR/PU @ 0.022	100mm blown
0.25	35mm PIR/PU @ 0.018 45mm PIR/PU @ 0.022	100mm batt @ 0.037
0.22	45mm PIR/PU @ 0.018 55mm PIR/PU @ 0.022	100mm batt @ 0.021 125mm batt @ 0.037
0.20	50mm PIR/PU @ 0.018 65mm PIR/PU @ 0.022	125mm batt @ 0.034
0.18	65mm PIR/PU @ 0.018 80mm PIR/PU @ 0.022	100mm batt @ 0.021 125mm batt @ 0.032
0.15	85mm PIR/PU @ 0.018 100mm PIR/PU @ 0.022	100mm batt @ 0.021 + 20mm insulated drylining

Acoustic

Airtec XL blocks are not recommended for use in acoustic separating and party walls. For separating and party walls, our Airtec Party Wall or Airtec Seven blocks are recommended - see individual datasheets for these products.

Below Ground

Airtec XL blocks are suitable for use below dpc in soil conditions DS1 & DS2 as defined in BRE Digest Special Digest 1 and condition MX3.2 as defined in BS EN 1996-2 : 2006.

Suspended Block & Beam Floors

Airtec XL blocks are not suitable for use as infill blocks in block and beam suspended floors. For this application we recommend our Airtec Large blocks or Airtec Seven blocks. Please refer to individual datasheets.

Fire Resistance

Airtec 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
100	2 hours	4 hours	4 hours	4 hours
140	3 hours	3 hours	4 hours	4 hours
190	6 hours	6 hours	6 hours	6 hours

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

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.

Mortars

Airtec blocks offer a good surface for accepting mortars. On dry blocks, surfaces can be brushed with clean water immediately before applying mortar to overcome the suction. The preferred approach is to adjust the consistency of the mortar to suit the suction of the block. The weakest mortar mixture appropriate to the structural requirements should be selected as per BS 5628-3. A weaker mix should always be used with Airtec blocks.

	BS 5628-3 Mortar Class	Recommended mix proportions of materials by volume (as per BS 5628-3)	
Above dpc	iii	1 : 1 : 6 1 : 6 1 : 5	Cement : Lime : Sand Cement : Sand (with plasticiser) Masonry Cement : Sand
Below dpc	ii	1 : ½ : 4 to 4½ 1 : 4	Cement : Lime : Sand Cement : Sand

Airtec is suitable for Thin Joint mortar construction using mortar supplied in the form of 25kg bags of dry, pre-mixed powder. Mixing is simply done by adding water to the powder in accordance with the manufacturer's instructions. Please visit our website for further details.

External Rendering

Airtec blocks have moderate-high suction and brushing dry blocks with water immediately prior to adhesion is recommended. For even greater adhesion, a spatterdash or stipple undercoat may be used - please refer to our website for further details. Pretreatments such as RendAid may be used and metal lathing plus an additional coat should be used to reinforce the render where movement control has not been incorporated into the wall.

Traditional renders should be applied in 2 coats. The first coat should not exceed 15mm and the second coat should be 5-7mm. The first coat should be slightly stronger than the second.

Cement : Lime : Sand Sheltered to Moderate Conditions	Cement : Lime : Sand Moderate to Severe conditions	Cement : Sand with plasticizer Sheltered to Moderate Conditions	Masonry Cement : Sand Moderate to Severe conditions
1 : 2 : 9	1 : 1 : 6	1 : 6	1 : 5

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 m²
Less than 90mm	50 - 75	450	450	4.9
Over 90mm	50 - 150	900	450	2.5

For unreinforced Airtec masonry panels, movement joints should be placed at intervals of no greater than 6m and within 3m of a corner. Additional wall ties should be placed around openings and each side of movement joints at each course. In wall areas of higher stress such as around openings, joists or lintels, bed-joint reinforcement must be placed in the two courses immediately above and below the area to accommodate movement and stresses and to avoid the appearance of hairline cracks.

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

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North West, Cheshire, Saffordshire and West Midlands Region :	Tel: 0151 525 5991	Fax: 0151 530 1676	wrainford@thomasarmstrong.co.uk