MANNOK SEVEN

Mannok Aircrete Thermal blocks are manufactured using autoclaved aerated concrete at our manufacturing facility in Derrylin, Co. Fermanagh, N. Ireland. They are supplied in response to customer demand for a building block with efficient thermal properties combined with a high strength to weight ratio.

Applications

- Walls
- Columns
- Partitions

Product Type

- Regular shaped solid masonry unit
- Category 1 masonry unit in accordance with EN 771-4

Certifications

- British Board of Agrement – certificate no: 11/4869
- EC certificate of Factory Production Control – 0050-CPR-0971
- Environmental Management system to ISO 14001:2004 – certificate no: EMS 552208

Memberships

- Aircrete Products Association
- British Precast

Performance and Properties

Gross Dry Density (Kg/m^3)	760
Mean Compressive Strength (N/mm^2)	7.5
Thermal Conductivity (W/m.K)	0.19
Dimensional Tolerance in GPLM	D1
Dimensional stability/moisture movement (mm/m)	<0.4

Block Thickness (mm) Note 1	*Thermal Resistance (m2K/W)*	*No. Block per pack*	*Wall area per pack (m2) Note 2*	*Approx Block Wt. @ 3% mois-ture (Kg)*	*Approx Wt. of wall per m2 (Kg)*
75*	0.39	96	9.72	5.55	55
100	0.53	72	7.30	7.41	73
115*	0.60	64	6.48	8.52	84
125*	0.66	56	5.67	9.26	92
140	0.74	48	4.86	10.37	103
150	0.79	48	4.86	11.11	110
200*	1.05	32	3.24	14.81	147
215	1.13	32	3.24	15.92	158
250*	1.32	24	2.43	18.51	183
275*	1.45	24	2.43	20.36	202
300	1.58	24	2.43	22.22	220
350	1.84	16	1.62	25.92	256

NOTES

1.*Sizes made to order
2. Wall area includes and allows for 10mm conventional mortar joints
All block face sizes are (Length x Height) 440mm x 215mm
Pack sizes are approx 900mm x 900mm x 900mm

Fire Resistance

Mannok Aircrete Thermal Blocks provide excellent fire protection in both load bearing and non load bearing applications. They are classed as non combustible and have a Class 0 resistance to surface spread of flame and category A1 in accordance with EN 13501-1. Block thicknesses required for fire resistance periods are shown in the table below.

	6 Hours	*4 Hours*	*3 Hours*	*2 Hours*	*90 Mins*	*60 Mins*
Load bearing single leaf wall	215mm	180mm	140mm	100mm	100mm	90mm
Non-load bearing single leaf wall	150mm	100mm	75mm	63mm	63mm	50mm
Load bearing cavity wall	150mm	150mm	140mm	100mm	100mm	90mm
Non-load bearing cavity wall	90mm	75mm	75mm	63mm	63mm	50mm

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Fixings

Light Duty Applications

Spiral or Helical fixtures may be used for lightweight structures - skirting boards, architrive, timber battens and lightweight door frames. Fisher Aircrete Anchor GB (G8, G10 & G12) with safety screw or Fisher Turbo Aircrete Anchor FTP is also suitable for light to medium weight structures.

Medium Duty Applications

For heavier fixtures screws with nylon plugs, frame fixers, or expansion fixtures which can be nailed should be used – e.g door frames, windows, kitchen cupboards and radiators: Fisher Frame Fixing S-H-R, S-H-RS, SH 8 100, SH 10 100, S10 100 and S14 135.

Heavy Duty Applications

For fixing steel joists, garage doors, or heavy gate brackets a Fisher Resin FIS V chemical mortar fixing should be used or Fisher Fixing S-H-R in various sizes. A minimum of 50mm penetration should be achieved in all cases.
Pilot holes should be drilled one size smaller than the plug to be used with a steel or woodworking bit.

Do not use plastic plugs or expanded metal fixings and do not overtighten screws.

Coursing Units

Coursing units are available in the following:

Length (mm)	*Width (mm)*	*Height (mm)*	*Unit wt.(Kg)@ 3% moisture*	*No. units per pack*	*Approx wt. (Kg) per pack @ 3% moisture*
215	100	65	1.1	364	400
440	100	100	3.44	112	385
440	140	100	4.82	90	435
440	150	100	5.16	90	465
440	150	150	7.75	90	700

Wall Ties and Movement Joints

Wall ties must comply with BS EN 845-1 and be embedded in the mortar of each leaf of blockwork by a minimum 50mm. Additional wall ties will be required around openings.

Block Thickness (mm)	*Cavity Width (mm)*	*Horizontal spacing (mm)*	*Vertical spacing (mm)*	*Ties per m²*
<90mm	50 - 75	450	450	4.9
>90mm	50 - 150	900	450	2.5

Vertical Movement joints should be spaced no greater than every 6 metres.

ACOUSTICS

Mannok Aircrete Seven Blocks have a density of 650kg/m^3 and so are suitable for use in party wall construction. Guidance on party wall construction can be found in Robust Details or alternatively contact the Mannok Aircrete Technical Department.

DELIVERY AND SITE HANDLING

The blocks are supplied shrink-wrapped with a Red banding and placed on pallets suitable for off-loading with mechanical grabs or or by fork-lift trucks. The colour of the banding indicates the strength of the blocks. The blocks must be stored clear of the ground on a firm, level surface and protected from rain and water from theground. The shrink wrapping should be kept in place until the blocks are required for use.

BELOW DPC LEVEL

The blocks are resistant to freeze/thaw conditions likely to occur below the dpc and are therefore suitable for use in situations up to and including MX3.2 as defined in EN 1996-2 : 2006, Annex A, Table A1 and Annex B Table B.1 (ie where there is a high risk of saturation with freezing).

The blocks are suitable for use in classes DS1, DS2 and DS3 of soil or groundwater as defined in BRE Special Digest 1 : 2005. In unusual soil and/or groundwater conditions, eg soils contaminated by industrial waste or highly acid soils, expert advice should be obtained.

MORTARS

The Mannok Aircrete Thermal Blocks may be built using both sand/cement mortar and thin joint mortar.
Below DPC 1:4 cement/sand + plasticiser
Above DPC 1:6 cement/sand + mortar mix (To manufacturer's instructions)

Thin joint mortar is supplied in 25Kg bags of dry, premixed powder requiring controlled water addition on site. For further information on Thin joint systems refer to Thin Joint data sheet.

Thermal Bridging

The issue of linear thermal bridging is hugely significant and is becoming more so as U-values get even lower. The heat loss from junctions can now account for as much as 40% of the heat lost. The use of Mannok Aircrete Thermal Blocks at the relevant junctions can significantly reduce the thermal bridging throughout the structure thus reducing the overall heat loss through the building fabric.