

# Systems datasheet 1

## The use of thin joint blockwork



Faster build times and increased productivity on site are offered by aircrete's thin joint system. Thin layer mortar combined with aircrete blocks is an innovative building system that improves thermal performance, air tightness and waste reduction. Many manufacturers also produce large format aircrete blocks, up to twice the size of a standard format block, which further enhance build times. The thin layer mortar is a pre-mixed cement based product, which only requires water to be added to produce easily applied mortar. As a replacement to traditional sand/cement mortar, it allows the depth of the mortar to be reduced from the conventional 10mm to 3mm or less.



### Faster build speed

The use of thin joint and large format blocks has a major effect on build times and typically a single storey can be built in a day. The thin joint mortar, applied to horizontal courses and perpend, is formulated to achieve a strong bond that sets within 30 minutes. This minimises the incidence of 'floating' that occurs with traditional mortars, which consequently limits the number of courses that can be laid. The light weight of the blocks mean they can be handled with ease, aiding speed of laying.

### Increased productivity

With an accelerated setting time, the productivity gains of using the thin joint system in cavity walls become more apparent. By completing the inner leaf so rapidly, earlier installation of other components such as floors and roof timbers is possible. This, in turn, allows finishing trades access much sooner than with traditional building programmes. By separating outer and inner leaf construction schedules, a rapid weather tight envelope is achieved, with the brickwork or external cladding no longer affecting completion times.

### Mortar

The pre-mixed mortar is specially formulated and easily applied, giving a full-fill bond which significantly improves the air-tight properties of the construction. A winter grade mortar is available which can allow construction to continue in lower winter temperatures subject to good site practice.

### Wastage

The accurate cutting of blocks reduces block wastage to a minimum and much less mortar is required. Supplied in 25kg bags, the mortar cost is similar to conventional sand/cement construction, but produces much less waste.

### Sound insulation

The structure of aircrete, consisting of tiny, non-interconnecting air cells, gives high resistance to airborne sound. Aircrete thin-joint separating party walls have a number of Robust Detail (RD) solutions to meet Part E.

### Fire resistance

A simple and economic means of protecting buildings against fire, aircrete blocks are non-combustible and will provide fire resistance for much longer than the requirements set out in the Building Regulations.

### Thermal performance

The Building Regulations require that heat loss through mortar joints is taken into account when calculating U-values for walls. The use of thin joint blockwork can minimise heat loss by reducing the relative area of mortar per m<sup>2</sup> of wall. For example, in a solid wall solution an improvement of up to 5% in U-value can be achieved.

Aircrete is an intrinsically efficient insulation material and the popularity of solid wall aircrete construction in Scandinavia and Northern Europe, is in large due to the excellent thermal performance that can be achieved.

Aircrete constructions and details achieve significant improvements in linear thermal bridging values (psi values), which have become more and more dominant as fabric insulation increases. These details effectively reduce heat loss at the junctions of constructions, further reducing CO<sub>2</sub> emissions. The use of aircrete enhanced construction details, such as the LABC Registered Construction Details or the Constructive Details, can result in significantly lower psi and y-values, generally half of the default values that are used in SAP assessments.



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### European use

The system has full Agrément certification and whilst still a relatively new system to the UK, it has been used in Europe for many years, where it is used in both solid wall as well as cavity construction.

### Sustainability

Aircrete is a sustainable building product, making extensive use of recycled materials and materials primarily sourced within the UK. All APA members are committed to operating sustainably, complying with all relevant legislation, regulations and codes of practice.

Aircrete can perform to meet current and future requirements of Building Regulations and can be used to build Zero or near Zero Carbon Homes.

Aircrete manufacturers are committed to a responsibility to the environment as embodied in their environmental policies, operating Environmental Management Systems to BS EN ISO 14001 and demonstrating Responsible Sourcing with all APA members having BES 6001 certification at 'Very Good' level, giving the maximum credits under materials category of the Code for Sustainable Homes. Constructions containing aircrete can give up to A+ under the Green Guide ratings.

### Installation

The build process is just as simple as traditional masonry and it requires similar skills.

### Wall ties

There is a range of cavity wall ties suitable for use with thin joint masonry.

### For more information

This fact sheet is only intended to be an outline guide to Aircrete products and you are advised to contact the APA members for comprehensive technical support and guidance, backed by extensive technical literature covering every aspect of designing and working with aircrete and thin joint masonry.



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