

Abbey Artstone Limited

Glass Reinforced Concrete Technical Specification

Composition

Abbey Art stone Architectural masonry is manufactured in accordance with GRCA Specification. We use naturally occurring aggregates, sand, Portland cement and an integral waterproofer; pigments are added were necessary.

Methods of Manufacture

GRC can be manufactured in one of 3 ways

Grade 8 or Grade 8P – Vibration Cast premix

Grade 10 or Grade 10P – Sprayed or Hand Layed Premix

Grade 18 or 18P – Sprayed GRC

Where “P” refers to the use of acrylic polymer emulsion in the GRC Mix

Compressive Strength

Whereas traditional concrete is classified by its compressive strength, GRC is classified by reference to its characteristic flexural strength, referred to as Modulus of Rupture or MOR).

GRC When tested in accordance with BS1881:Part 116: 1983 and BS1217:2008 and the United Kingdom cast Stone Association, the cast stone was tested over three 150mm cubes giving an average crushing strength well in excess of **50KN/mm²**.

Density

The typical mean density of Abbey Artstone Architectural GRC masonry is 2000kg/m³

Initial Surface Absorption

When tested in accordance with BS1217:2008 using methods in BS1881-208 values were found to be less than 0.25ml/(m².s) as required.

Manufacturing Tolerances

All Abbey Artstone Architectural masonry complies with following tolerances unless otherwise agreed in writing by us.

The maximum permitted variation from plane is 0.03% of the maximum dimension of the item of 3mm whichever is the greater.

The actual dimensions of individual regular units should conform to the stated dimensions subject to the tolerances below:

Tolerance in MM	Length	Width	Thickness
Up to 600mm	+/-2	+/-2	+/-2
Over 600mm to 1000mm	+/-3	+/-3	+/-3
Over 1000mm to 2500mm	+/-4	+/-4	+/-4
Over 2500mm to 4000mm	+/-5	+/-5	+/-5
Over 4000mm	+/-6	+/-6	+/-6

Fire Resistance

Units manufactured in accordance GRCA standards and have been tested by Warrington Fire Global Safety. Tested in accordance with EN 13501-1:2007 and the results are as follows;

GRC – Reaction to Fire classification: A1

Polymer GRC - Reaction to Fire classification: A2-s1, d0

Further details and copies of the report can be found at

<http://www.grca.co.uk/downloads/tech%20reports/firetest%20classification%20report%20grc.pdf>

<http://www.grca.co.uk/downloads/tech%20reports/firetest%20classification%20report%20p-grc.pdf>

Structural Use

All GRC Units are non structural and must not be used in compression. All fixing must be used in accordance with the drawings provided failure to do so will invalidate any product warranty.

Design/Detailing

To be carried out by manufacturer in accordance with accepted best practice as detailed in GRCA "Design Guide" and "Practical Fixing Guide" or by a suitably qualified and experienced designer of GRC

Weathering

Many factors influence the way GRC weathers; such as design, exposure, climate and surrounding. All pigments used are colorfast and durable and confirm to BS1014. Abbey Art Stone architectural dressings will weather in a similar manner to natural stone, when exposed to similar conditions.

Cementitious Efflorescence

As with all reconstructed stone and cement based products there is the possibility that the temporary phenomenon known as efflorescence will occur causing lightening of colour. This will reduce over a period of time with natural weathering **Information sheet No. 1.**

Cutting

GRC should be designed in such a way as to avoid any site cutting. Sometimes cutting of certain units is required in design to allow for site tolerances. Where cutting is required please consult our technical department for further information also see our **Information sheet No. 12**.

Surface Finish

The colour and texture of the exposed face of the GRC should be agreed between the client/architect and ourselves.

With the differences in the way units are manufactured there can be subtle variations in the colour. Cement and aggregates used are carefully chosen for their quality and consistency. All obtained from natural sources and therefore subject to variations beyond our control. We do and always make every effort to ensure consistency in colour and texture of units manufactured, but no guarantees can be given.

Storage

GRC Units should be treated with care and should be handled and stored correctly.

All pallets should be stored on a flat even surface and should never be stacked on top of each other. GRC components should be stored, handled and transported in such a way that

1. No Part of the component should be over stressed.
2. Bowing or twisting is not induced in the component.
3. No damage is caused to any part of the component, particularly edges and corners.
4. No permanent staining or discoloration is caused by the storage conditions.
5. Individual units should not be stacked face to face without the appropriate packaging/protection material used.
6. Individual units should be supported by timber bearers as supplied within the pallets.
7. It is important that the opened pallets are covered with polythene to prevent ingress of water, dirt and dust.

All pallets should be stored on a flat even surface **C.O.S.H.H.**