Aroma GRC



AROMA GRC

& ENGINEERING

INTRODUCTION TO GRC

(Glass Reinforced Concrete)

Glass Reinforced Concrete (GRC), also known as Glass Fiber Reinforced Concrete (GFRC) or Fiberglass Reinforced Concrete (FRC), has gained immense popularity since its introduction. Due to its versatility, it has become a preferred building material among architects and designers.



- GRC has played a crucial role in advancing both the technology and aesthetics of modern construction across the globe for more than 40 years.
- GRC is a composite material consisting of cement, fine aggregates, water, chemical admixtures, and alkali-resistant (AR) glass fibers. It can be customized to meet diverse application requirements.
- GRC is highly suitable for seismic regions due to its flexibility, allowing it to bend rather than crack under seismic pressure.
- The design and production of GRC products adhere to international standards established across Europe, America, Asia, and Australia. Today, GRC is manufactured in more than 100 countries.



KEY FEATURES

- GRC canbemoldedto achieveintricate details.
- GRC provides designers with exceptional flexibility.
- GRC moldings and features are lightweight, easy to handle, and quick to install.
- GRC is resistant to corrosion.
- GRC is an eco-friendly material.
- GRC is highly durable and can withstand extreme weather conditions.
- GRC can be effortlessly molded to replicate various shapes, intricate details, and textures.
- GRC can be customized with pigments, paints, or natural stone facings for a variety of finishes.
- GRC provides a diverse range of shapes and surface finishes.

GRC – EXTERIOR CLADDING

ADVANTAGES	BENEFITS
Light weight	Enables faster installation, reducing costs in the superstructure and foundations.
High Strength	Features a hard and dense surface, offering excellent resistance to graffiti.
Impact Resistant	Strong and durable, minimizing breakage during transportation and installation.
Durability	Requires low maintenance and is resistant to rot and corrosion.
Versatile Finishes & Colors	Available in plain white and natural earthen tones by adding pigments during mixing. Offers a variety of finishes, including smooth, acid-washed (stone-like texture), and paintable surfaces.
No Steel Reinforcement	Eliminates electromagnetic interference with signaling cables, making it ideal for sensitive installations.
Safe & Non-Hazardous	Uses alkali-resistant (AR) glass fiber, which is non-respirable and poses no health risks, unlike asbestos.
Easy Installation	Can be dry-fixed using mild steel (M.S.) or stainless steel fixtures for quick and secure mounting.

GRC APPLICATIONS

CLADDING– Availableinplain,textured,curved,orbanded designs

ORNAMENTAL / ARCHITECTURAL COMPONENTS:

(a) Arches
(b) Bands
(c) Brackets
(d) Balustrades
(e) Cornices
(f) Columns, Capitals and Bases
(g) Domes
(h) Fins and Parapets
(I) Partitions
(j) Window surrounding
(k) Zharokhas

LANDSCAPING AND GARDEN FURNITURE:

(a) Landscape element such as planters / flower pots
(b) Garden furniture's
(c) Lamp posts
(d) Bollards, Signs, Statues and Sculptures.



TECHNICAL / CIVIL ENGINEERING APPLICATIONS

NOISE BARRIERS

The surface mass and stiffeners of GRC contribute to noise insulation, particularly at lower frequencies. A 10mm thick GRC panel with a surface mass of 20 kg/m² typically provides an average sound reduction of around 30 decibels.

GRC REPLACING RCC

GRC allows the creation of long yet lightweight elements, significantly reducing the structural load on the building.

DESIGN CRITERIA

A fundamental understanding of molding and casting constraints in Glass Fiber Reinforced Concrete (GFRC) helps architects and engineers design shapes and forms that are practical to manufacture.
Certain design considerations can influence the cost of GFRC in a project. GFRC has the capability to replicate intricate details or create smooth, sweeping curves. Complex details and undercuts require rubber mold liners, whereas simple, smooth flats and curves can be cast using rigid fiberglass molds.
Although rubber molds tend to be slightly more expensive, their cost becomes minimal when used for multiple castings. Producing numerous casts of a GFRC shape reduces the cost per piece, making repeated designs more economical compared to one-time-only casts.

GFRC can be cast in sections up to 12 feet in length, with a maximum area of 60-80 square feet, depending on the design and thickness.
However, as the length increases, handling and transportation become more challenging, requiring careful planning to ensure the integrity of the GFRC casting.

For most moldings, we recommend a maximum area of 60 to 80 square feet, depending on the design and thickness.
If longer lengths are needed, individual pieces can be joined on-site.

JOINTS

To minimize joint filling, we recommend designing GRC with V-grooves or open joints, which serve both aesthetic and functional purposes.
Typically, GRC joints are sealed with elastomeric sealants such as silicone or PU, which must accommodate dimensional changes within the material and building movement. A well-designed joint should effectively channel water away, protect the sealant from direct sunlight, and, when feasible, incorporate a secondary drainage system for added protection.
Proper joint preparation, including the use of primers, backer rods, and sealant application, should follow industry best practices. Additionally, it is the contractor's responsibility to ensure that all GRC components are installed accurately—whether level, plumb, straight, or curved—as per the design specifications.



CLEANING AND REPAIRS

Preventing dirt and stains on GFRC from the start is always the best approach. Taking care to keep the material clean before and during installation can save time and effort in maintenance.
Handling stains on GFRC is usually simple, as they can often be removed with common household cleaners like dishwashing detergent and water. Additionally, minor damages such as chips, blemishes, or small edge defects can be repaired. Refer to the patching guidelines for proper restoration of GFRC surfaces.

Well-executed GFRC repairs are durable and will last as long as the material itself.

CONCLUSION

A well-designed, expertly manufactured, and correctly installed GRC system enhances aesthetics while offering innovative solutions. It can also help reduce overall costs, minimize on-site labor, and accelerate construction timelines.

Glass Fiber Reinforced Concrete (GRC) provides a cost-effective solution for creating a wide range of decorative and ornamental shapes with limitless design possibilities.

The permeability of GFRC is influenced by its mix design and compaction, offering superior resistance compared to most cement-based materials.

QUALITY ASSURANCE

The success of any GFRC /GRC system relies on seamless coordination between the designer, manufacturer, and installer. Proper sequencing, delivery schedules, and adherence to manufacturing tolerances are essential and should be agreed upon by all parties involved.
Comprehensive submittals and shop drawings play a crucial role in familiarizing the designer and installer with attachment methods, reinforcement, and fabrication details. This process helps identify potential conflicts early on. Detailed GRC shop drawings should provide a complete inventory of all components, along with specified tolerances, ensuring a smooth and efficient installation process.

TYPICAL PROPERTIES OF GRC (at 28 days)

PROPERTY	UNIT	MACHINE SPRAY
Glassfibre (AR)	(WT. %)	2 to 5 depending upon component of GRC
Flexural Strength	Mpa	6-11
Compressive Strength	Mpa	35-65
Impact Strength	Kj/m ^{2}	7-20

GRC MATERIAL PROPERTIES

Thickness	- 12 to 15mm (depending upon article)
Wt. / Sq. Ft	- 2 to 4 kg (depending upon article)
Dry Density	1.8 to 2.2 T/M
Colour	Any earthen colour (popular colours are White & Pink)
Texture	(a) Plain Smooth Finish, (b) Painted, (c) Acid Wash (Stone Finish)

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AROMA GRC ALL

PRODUCTS LIST

Aroma GRC











AROMA GRC COLUMNS AND CAPITALS

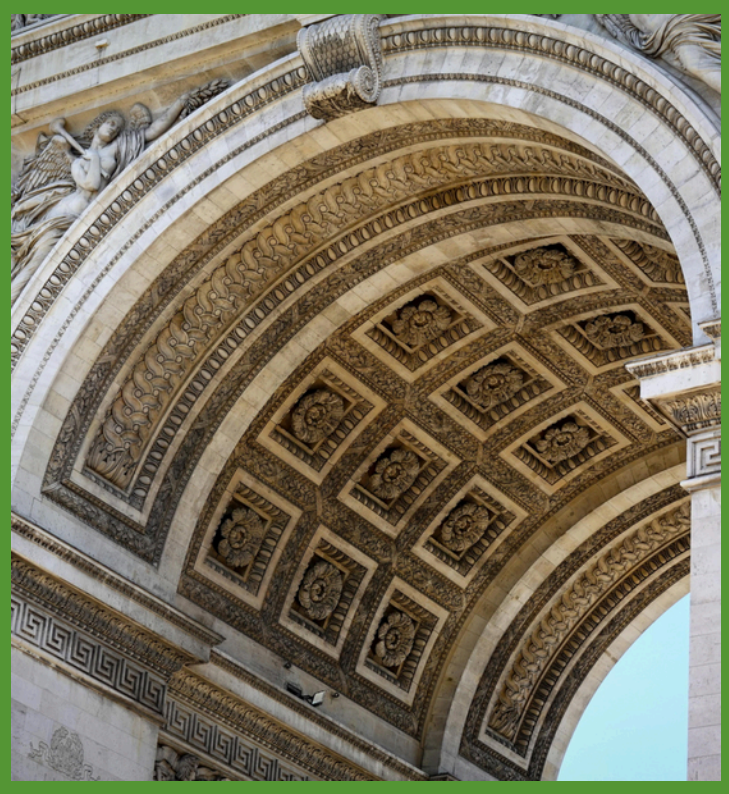








AROMA GRC CORNICES AND ARCH





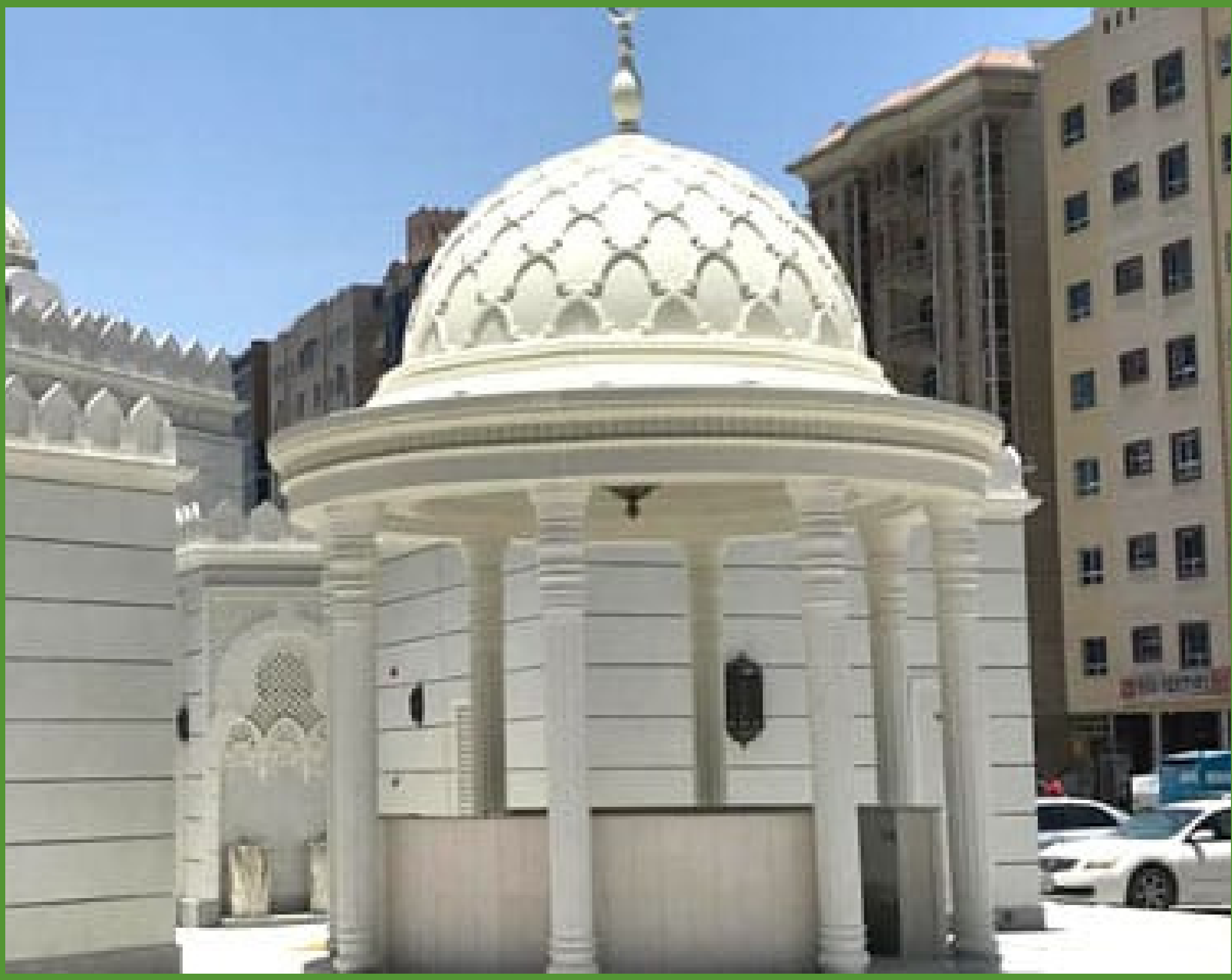




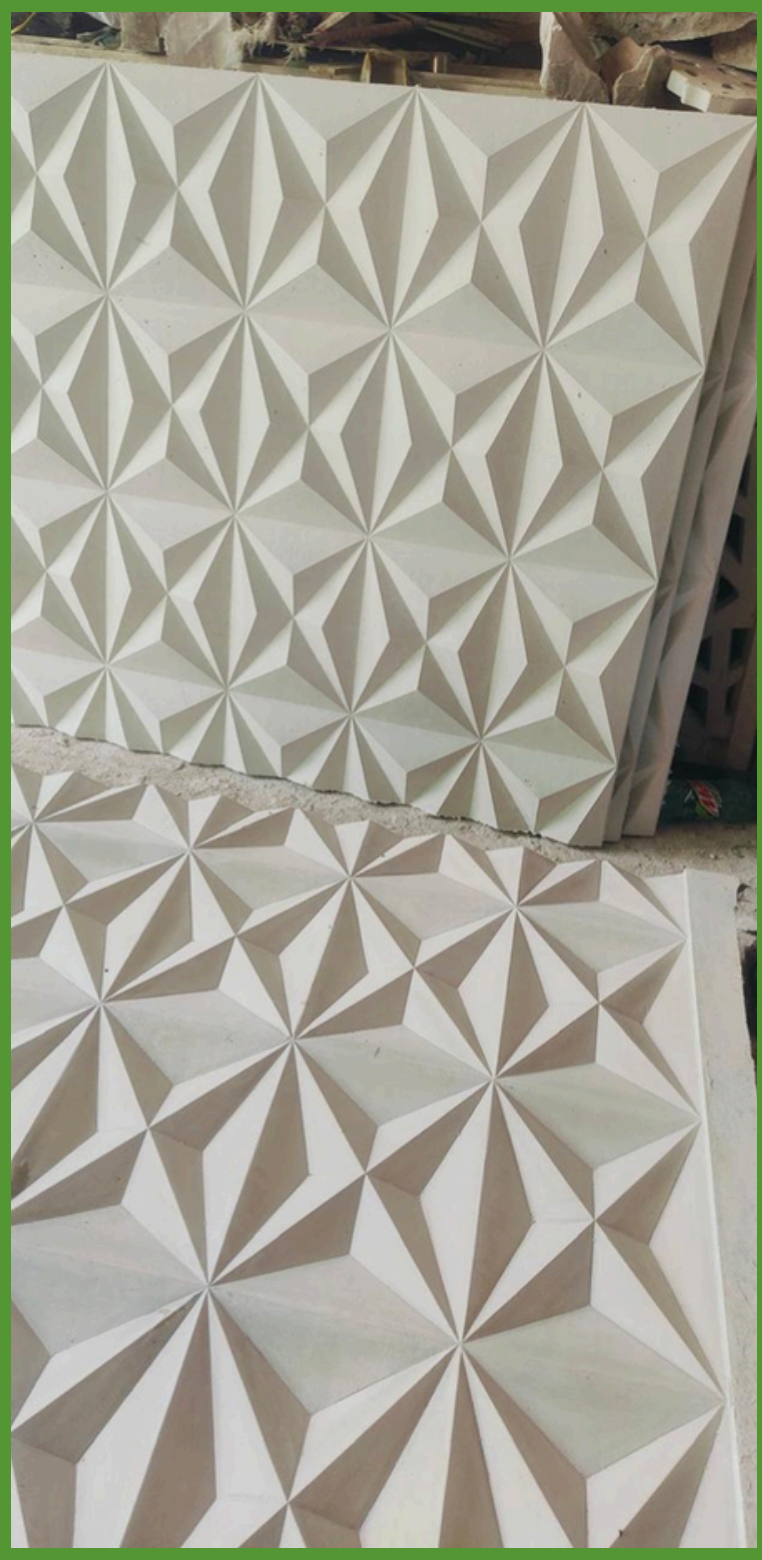


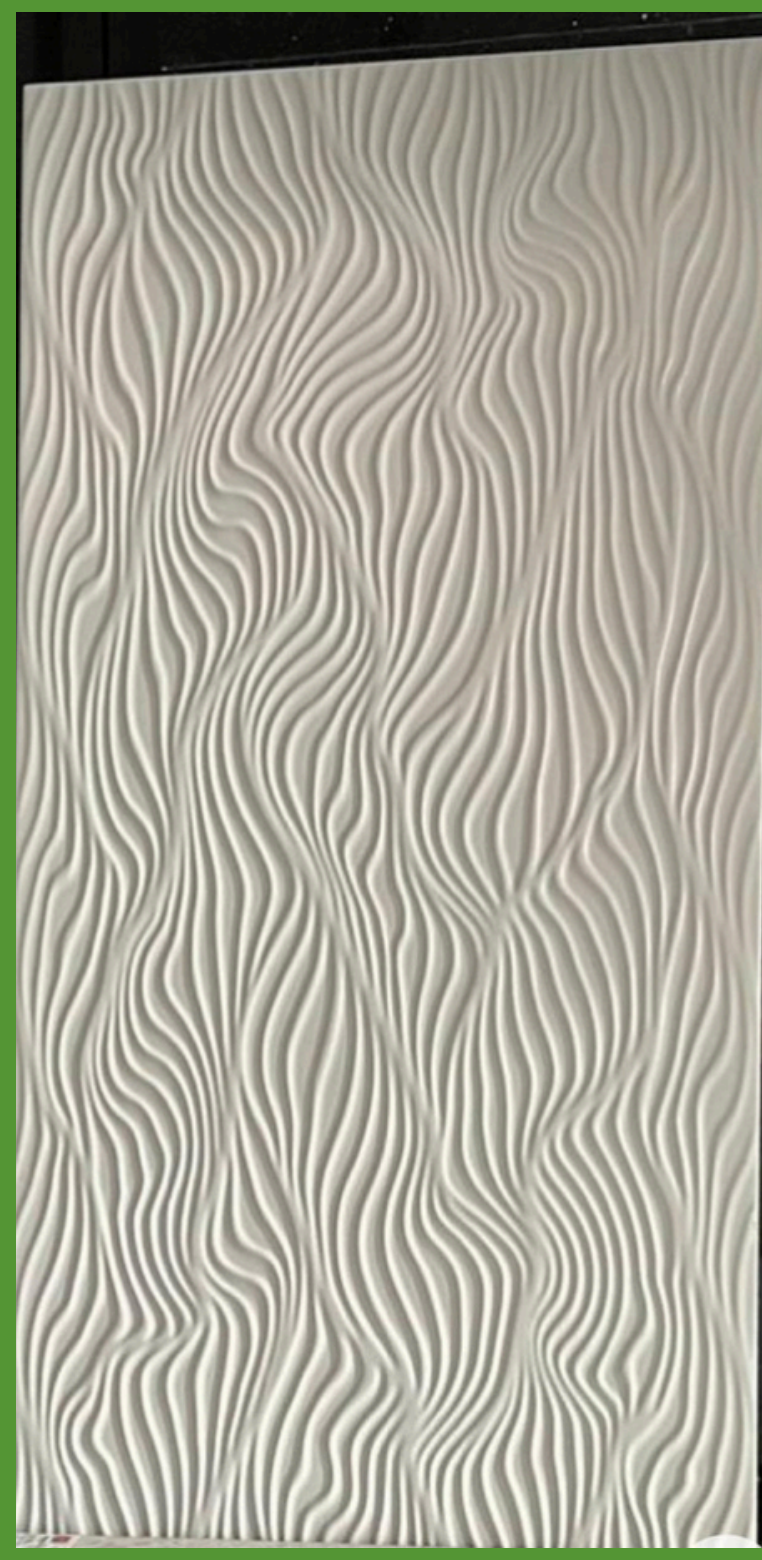


AROMAGRC DOME











AROMA GRC PANELS







AROMA GRC
LANDSCAPING PLANTERS













AROMA GRC RAILINGS

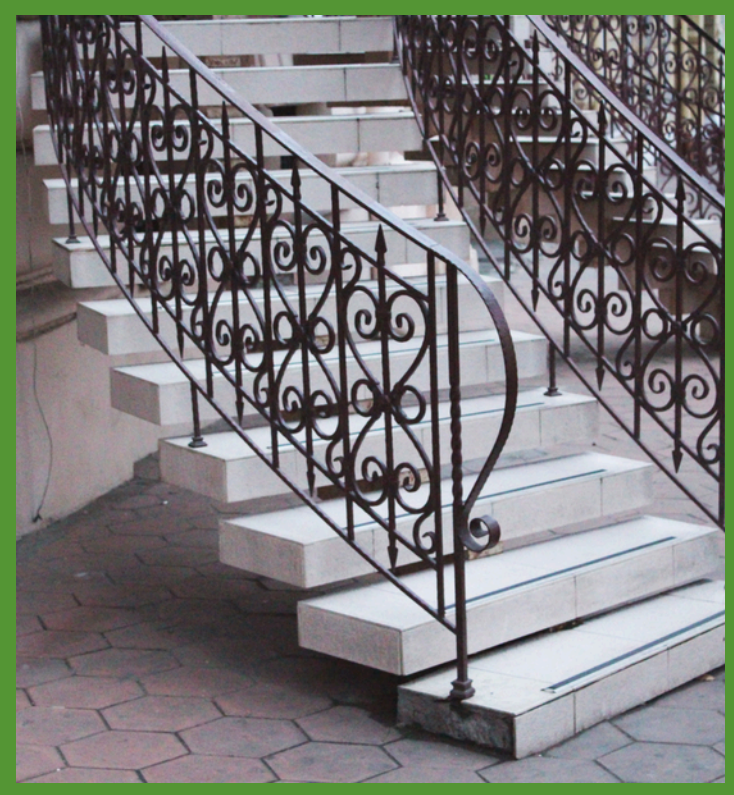




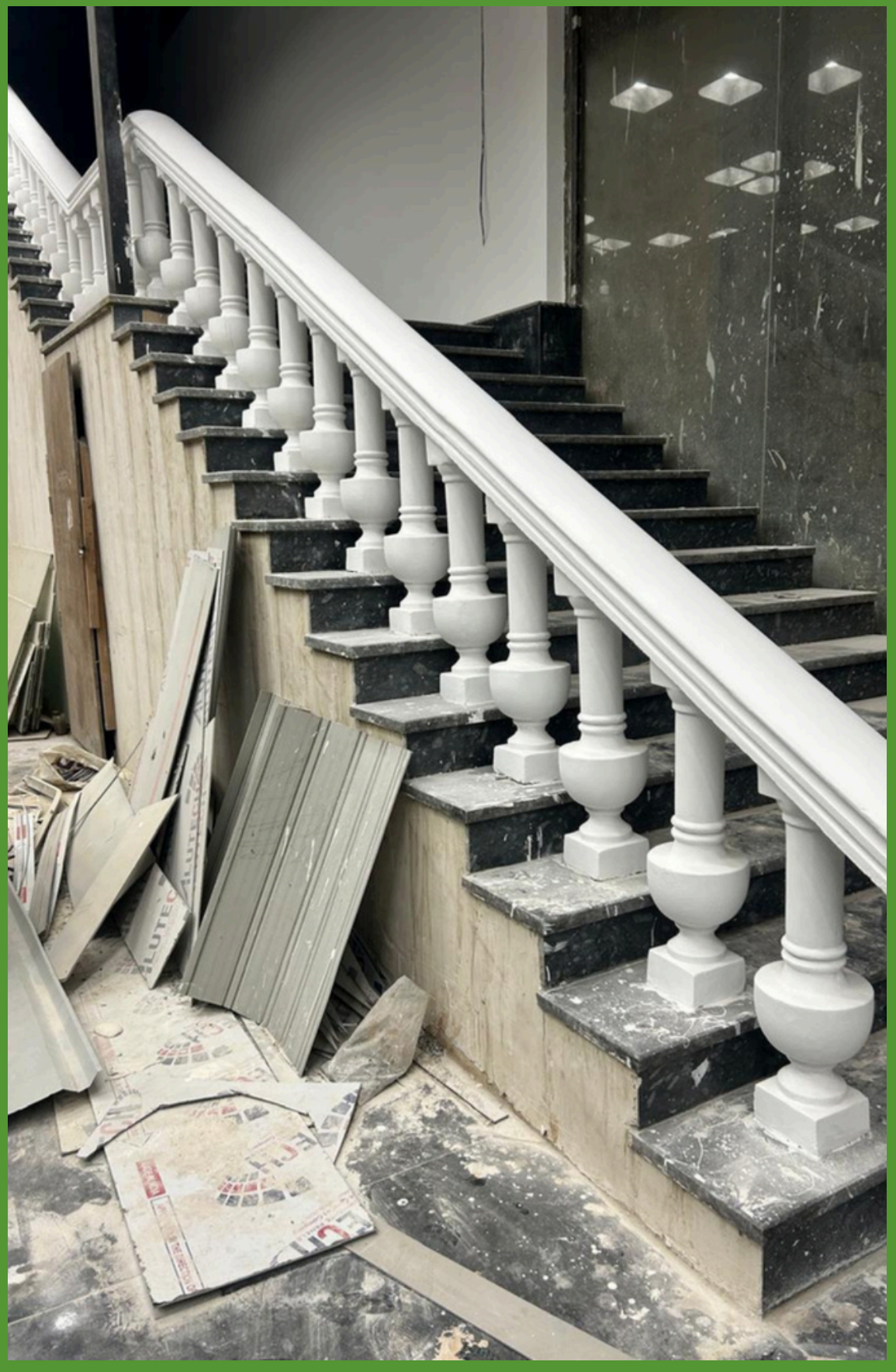








AROMA GRC BALUSTERS







AROMA GRC FOUNTAINS













Aroma GRC

About Us

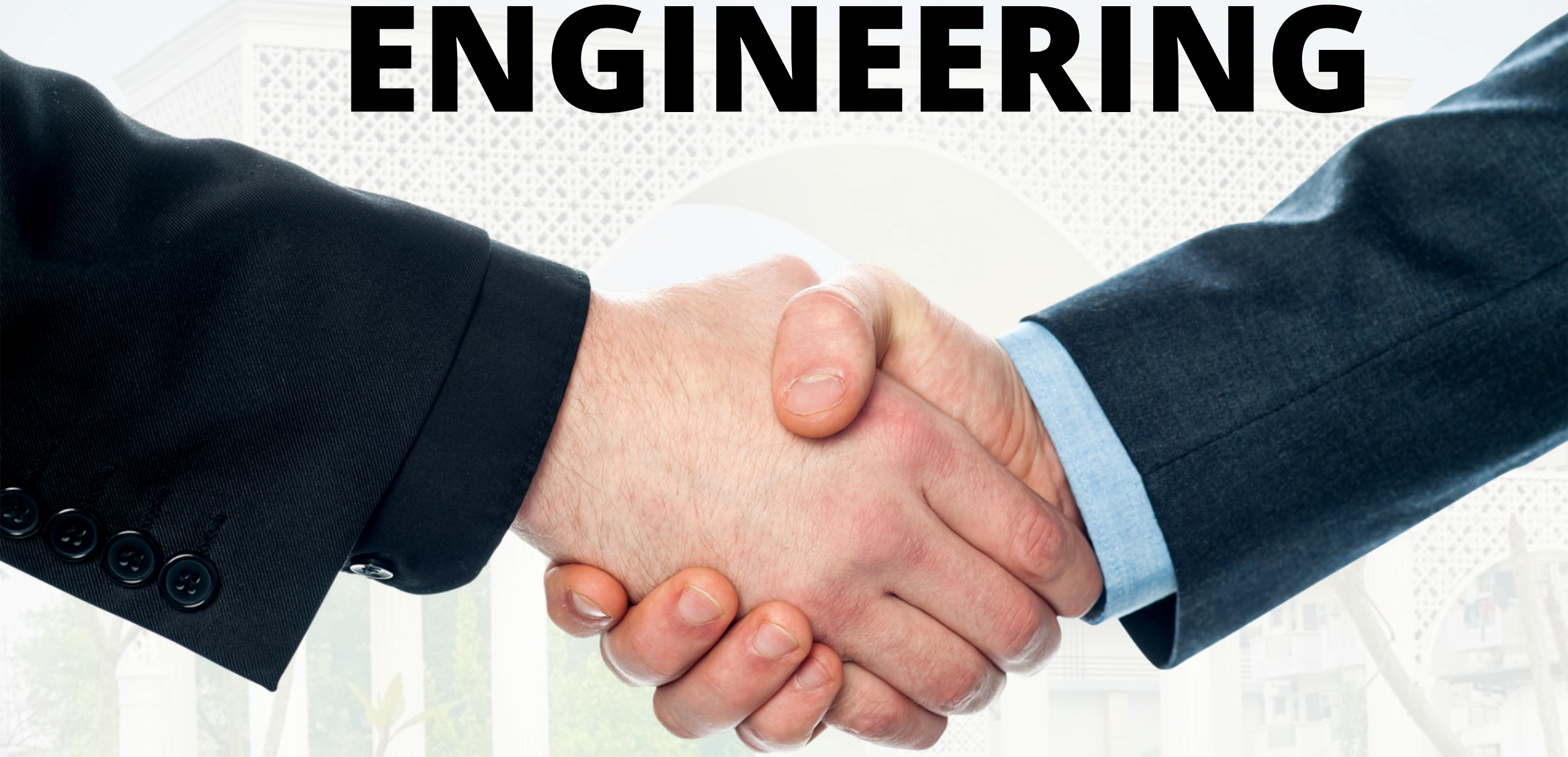


Our Story.....

Established in 2022, AROMA GRC & Engineering is a trusted manufacturer and supplier of Glass Fiber Reinforced Concrete (GRC) products in Gurugram, Haryana, India. We specialize in designing and producing high-quality GRC solutions that enhance architectural beauty and structural durability.

BESTQUALITYGRCPRODUCTS

AROMA GRC & ENGINEERING



THANKYOU

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