Arc

Restoration

Molded architectural components for exterior applications

About Us

ARC Limited, is one of North America's leading manufacturers of Glass Fiber Reinforced Concrete (GFRC) architectural castings.

For 20 years, ARC has proudly served the GFRC industry and demonstrated an impeccable track record for quality and delivery. ARC is an even stronger company with full access to the industry's most sophisticated tooling and mold making technologies advanced in-house R&D capabilities, technical support from architecturally trained professionals with decades of commercial construction experience, and association with a company that has long set the industry high bar for customer service and support.

Located in Ambridge in the Greater Pittsburgh Area, ARC is within a day's drive to locations throughout the Eastern United States.



A superior restoration solution

Today many terra-cotta clad buildings built between the late 1800s through the 1930s have serious deterioration problems and architectural elements will either need to be repaired or replaced. GFRC (glass fiber reinforced concrete) is an excellent restoration or replacement material. Molds can be taken from existing pieces on the historic structure and be replicated in GFRC or can be made by sculptors and model makers from photographs or drawings of terra-cotta architectural elements that no longer exist.

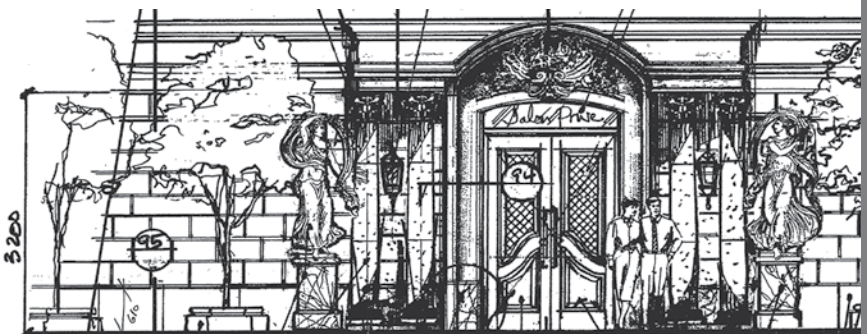
What is GFRC?

GFRC (glass fiber reinforced concrete) is concrete that uses glass fibers for reinforcement. It is typically cast in a thin section of around 1/2" to 3/4". With the thin, hollow construction of GFRC products, they can weigh a fraction of the weight of traditional precast concrete or terra cotta but have greater tensile strength than steel reinforcement.

GFRC is the modern replacement material for historic restoration and historic replication of terra cotta, carved stone, and limestone building elements due to its ability to replicate the color and finish of the original materials. GFRC's fine texture allows almost perfect replication of building ornaments and terra-cotta. Molds can be made from either sculptural replications or from existing building components allowing historic buildings to be returned to their original classical appearance. Coupled with the strength and durability of GFRC, it is the obvious choice.

Benefits of GFRC

- Color compatible allow it to be virtually indistinguishable from original terra-cotta
- Reproduces fine detail and texture and can be molded in complex shapes
- Lightweight and easier to handle than terra cotta
- Faster to erect than terra cotta
- Reduces the loads on the building structure
- Durable and long lasting
- Low maintenance
- Anchoring provisions are included in casting
- Non-combustible material
- Environmentally friendly
- Suitable for seismic zones



The ARC Advantage

ARC offers a unique set of competitive advantages unparalleled in the industry:

The Experience Advantage

As the global leader for more than four decades in custom cast architectural products for both interior and exterior applications. Rick Tavares, leads a sales, engineering and operations team with an average company tenure nearing 20 years.

The R&D Advantage

ARC has a long history of exploring advances in materials and production processes. More than 50 years of combined in-house experience is. The result of our commitment to innovation is simple. ARC is more likely to find solutions and achieve results faster and better than its competition.

The Global Advantage

With broad international experience and a well-established network of product marketing professionals on four continents, we are able to understand local market dynamics, have experience transporting products around the globe, and can support multi-location material programs for international accounts in sectors such as retail and hospitality.

The Material Advantage

GFRC combines the exterior surface of concrete, with the high strength provided by alkali-resistant glass fiber reinforcement (which acts similar to steel reinforcing rods in conventional concrete practice) and advanced elastic polymer emulsions. This combination produces an exterior surface of proven durability, and the capability to match the color and texture of existing work, or to suit the architect's requirements. GFRC parts are manufactured following the guidelines set forth in PCI MNL 128 and MNL 130.

The Tooling Advantage

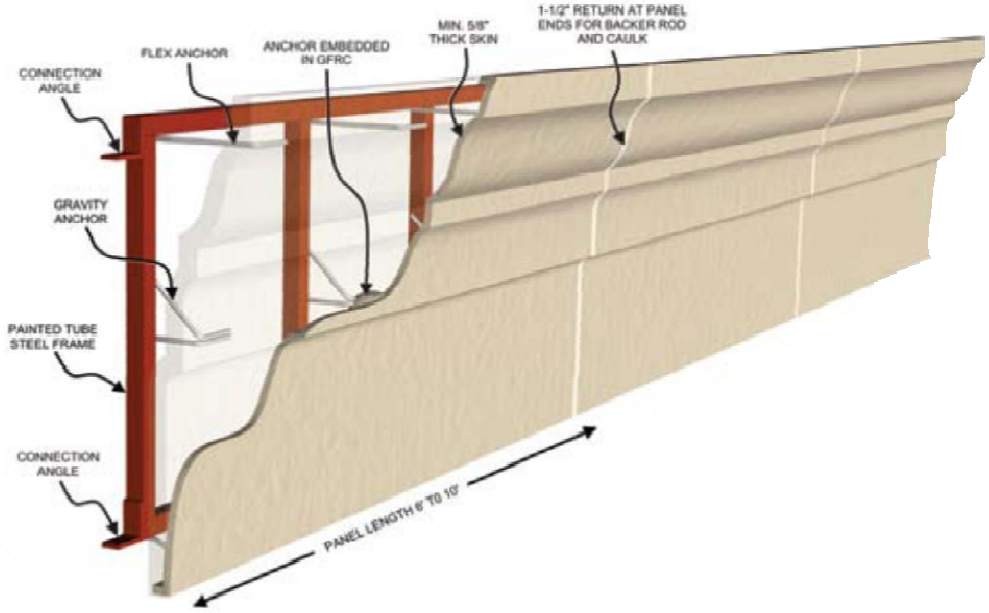
No other GFRC company in North America can match ARC's pattern and mold making capabilities. Large projects, complex dimensions requiring tight tolerances, and/or compressed project timelines require a GFRC provider that delivers products made right the first time, on time..

End-to-end resources

- Where historic replication or sculptured details are required, on-site sculptors are capable of making exact reproductions of existing pieces, or sculpting replications that are then used for mold manufacturing
- Advanced finishing techniques and technologies allow faithful replication of existing finishes, including the appearance of aged or mottled terra cotta

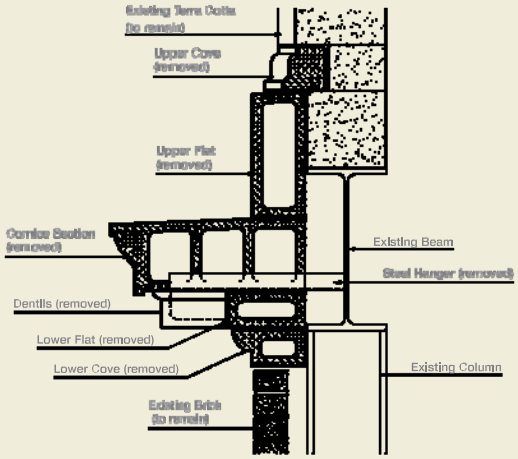
Restoration Solutions

Inside GFRC

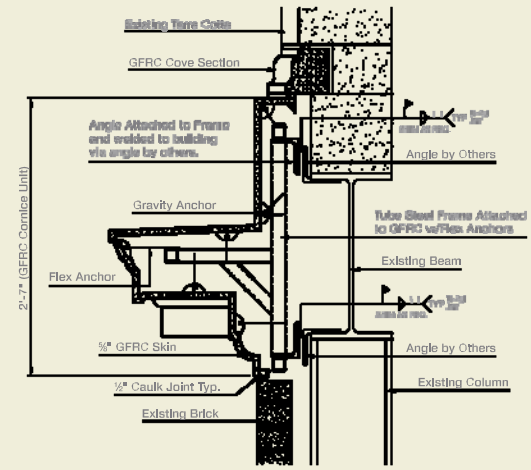


Dimensional and Performance Characteristics: Fabrication of GFRC shall be done to achieve the following characteristics when aged 28 days:

Shell Thickness	5/8" +1/8" – 0" (Panels)
Shell Thickness	1" +1/2" – 0" (Terra Cotta Replacement Stones)
Glass Fiber	5 - 6% by weight (Roving - Alkali-Resistant fiber)
Glass Fiber	3 - 4% by weight (Premix - Alkali-Resistant fiber)
Compressive Strength	6,000 psi (cube sample)
Flexural Yield Strength	900 – 1,500 psi (roving method)
Flexural Yield Strength	700 - 1,200 psi (test average - pre-mix method)
Flexural Ult. Strength	2,000 – 3,500 psi (roving method)
Flexural Ult. Strength	1,400 - 1,800 psi (test average - pre-mix method)
Weight	6 – 7 lbs/sq. ft.



Damaged Terra Cotta Section



Replacement GFRC Section

Architectural Terra Cotta Services we provide:

- Custom CAD drawings and renderings from historical documents
- Art molds from existing terra cotta pieces
- Custom sculpting and recreation of missing pieces
- Site surveys, testing , inventory and consulting
- Engineering of terra cotta replacement connection methods and means
- Color matching and texture matching of terra cotta glazes
- Reproduction of terra cotta in GFRC
- Turn key replacement

Experience Counts – listing of jobs or testimonials

- Project Listing
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ARC Limited
Buncher Commerce Park
Building #6, Avenue B
Leetsdale, PA, 15056

Tel: (412) 749-1223
Toll Free: 866.940.GFRC(4372)
Fax: (412) 749-1225
Toll Free Fax: 866.941.GFRC(4372)

www.arcgfrc.com