

MOONLIGHT MOLDS, INC.

GLASSFIBER REINFORCED CEMENT GFRC

NOTE TO SPECIFIER:

Use this guide in preparing specifications for column covers, cornices, coffered and vaulted ceilings and similar elements too complex to execute in conventional lath and plaster.

Moonlight Molds GFRC, a cement based material, is similar in many ways to precast concrete. Color pigments can be cast in but variations in color and shade may occur within the units and from unit to unit.

1. GENERAL

1.1 Scope:

Furnish all materials, labor, equipment and related services necessary to supply and erect Moonlight Molds GFRC units as indicated and described in the contract documents and in compliance with local codes and ordinances.

1.2 Work Included:

1. Supply of Moonlight Molds GFRC
2. Erection
3. Supply of Connection Hardware
4. Caulking

1.3 Related Work Excluded:

1. Lath and Plaster
2. Framing and Suspension
3. Finishes

1.4 Intent: This specification is intended to generally outline the GFRC requirements. It is not intended to amend or change the manufacturer's specifications for uses intended.

1.5 Manufacturer:

Moonlight Molds, Inc.
13720 S. Western Ave., Unit A
Gardena, CA 90249
Phone: (310) 538-9142
Fax: (310) 538-9717

1.6 Erector Qualifications: The erector must be a licensed and bonded contractor experienced in the erection of steel stud framing, lathing, plastering and gypsum wallboard.

1.7 Samples and Submittals:

1. Submit a minimum of three 8" x 8" GFRC flat samples to the finishing contractor for coating selections.
2. Submit shop drawings for approval showing plans, sections, details, joint treatment, reinforcing, fastening devices and the relation of the GFRC to the surrounding construction.

- 1.8 Substitution: Companies desiring to submit proposals other than Moonlight Molds, Inc. GFRC shall, at least ten working days in advance of bid date, submit to the Architect all descriptive information of the system. These companies must have a minimum of five years experience with the system and provide a list of four similar installations.

2. PRODUCT

2.1 Materials:

1. GFRC units shall be pre-fabricated with Glassfiber Reinforced Cement.
2. GFRC unites shall be fabricated in accordance with the Prestressed Concrete Institute (PCI) "Recommended Practice for Glass Fiber Reinforced Concrete Panels" Manual.
3. Units are to be suitably reinforced.
4. GFRC shall be ready to receive finish coatings as specified elsewhere. These coatings shall be applied after units are installed.
5. Exposed fasteners shall be stainless steel.
6. Steel stud backup (part of the unit) or steel sub-framing shall be constructed according to the steel systems manufacturer's recommendations.
7. Option1: Textured surfaces can be cast in at the time of manufacturing. Texture to be approved at time of sample submission.
Option2: Color pigments approximating color of the final finish can be cast in to minimize visible scratching or damage.

2.2 Tolerance (fabrication):

Dimensional - all directions	± 1/8"
Thickness - skin	+ 1/8" - 1/16"
Thickness - total unit	+ 1/4" - 1/8"
Warpage or Bowing	1/16" per ft

3. EXECUTION

3.1 Delivery, Storage and Handling:

1. Transport and handle units in a manner that avoids excessive stresses or damage.
2. Store units level on a clean and dry surface.
3. Do not unpack crates until immediately prior to installation.
4. Handle units to avoid damage to finished surfaces.

3.2 Pre-Installation Responsibility:

1. Prior to manufacturing, dimensions and conditions not shown on the drawings will be checked by the erector for inclusion by the manufacturer.
2. Prior to installation, the erector shall check jobsite dimensions. Any discrepancies between design and field dimensions shall be brought to the attention of the General Contractor and the Architect. Work shall not proceed until discrepancies are corrected.

3.3 Erection:

1. Units shall be lifted carefully with suitable devices at points indicated by the manufacturer.
2. Installation of units shall be plumb and level.
3. The erector shall provide temporary supports to maintain position as units are being connected.
4. Fasten units with screws, bolts, or welds as shown on the drawings.
5. Slotted or oversize holes for connections shall allow for unit movement.

3.4 Tolerance - Erected Units:

Face Width of Joint	+ 3/16"
Out of Plane (unit to unit)	+ 1/4"
Warpage or Bowing	+ 1/16" per ft

3.5 Patching and Cleaning:

1. Countersunk fasteners and damage are to be patched to match unit's texture.
2. Clean soiled units with detergent and water.

3.6 Finishing:

1. See painting/coating section of the specifications.

3.7 Caulking:

1. See caulking section of the specifications.

TYPICAL RANGE OF PREMIX PROPERTIES

<u>PROPERTY</u>	<u>28-DAY, (E)</u>
DENSITY (DRY)	110 TO 130 (PCF)
COMPRESSIVE STRENGTH (EDGEWISE):	6000 TO 9000 (PSI)
FLEXURAL:	
YIELD (FY)	700 TO 1200 (PSI)
ULTIMATE STRENGTH (FU)	1450 TO 2000 (PSI)
MODULUS OF ELASTICITY	1.5 X 10 ⁶ TO 2.9 X 10 ⁶ (PSI)
DIRECT TENSION:	
YIELD (TY)	600 TO 900 (PSI)
ULTIMATE STRENGTH (TU)	600 TO 1000 (PSI)
STRAIN TO FAILURE	0.1 TO 0.2 (PERCENT)
SHEAR:	
IN-PLANE	600 TO 1000 (PSI)
COEFFICIENT OF THERMAL EXPANSION:	
(77 TO 115 DEGREE F)	6 TO 12 X 10 ⁻⁶ (IN/IN/DEG F)
THERMAL CONDUCTIVITY:	3.5 TO 7.0 (BTU/IN/HR/FT ² /DEG F)

END OF SECTION