

GUIDE SPECIFICATION

This guide specification is provided by the **Composite Fabricators Association** for use by the construction industry. It is prepared in conformance with the construction Specifications Institute (CSI) 3-part Section Format.

IMPORTANT INSTRUCTIONS:

- 1. THIS SECTION SHOULD BE USED AS A GUIDE; NOT COPIED VERBATIM.**
- 2. REVIEW TEXT CAREFULLY. MAKE APPROPRIATE ADDITIONS, DELETIONS AND CHANGES TO SUIT PROJECT REQUIREMENTS.**
- 3. DELETE NOTES TO EDITOR, AFTER EDITION SECTION.**

For guide specifications and assistance with the specifying of exterior and interior building panels, contact:

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FIBERGLASS FABRICATIONS

NOTE: THIS SECTION IS FOR CUSTOM FIBERGLASS FABRICATIONS. FOR EXTERIOR PANELS USE SECTION 07455.

NOTE: AFTER EDITING THIS SECTION, PLEASE DELETE EDITING NOTES.

PART 1 -GENERAL

1.01 RELATED DOCUMENTS

NOTE: EDIT THE FOLLOWING ARTICLE TO SUIT THE PROJECT IF DIVISION I - GENERAL REQUIREMENTS IS NOT USED, DELETE ARTICLE 1.01.

- A. Drawings, Conditions of the Contract and Division 1 Specifications sections, apply to work of this section.

1.02 SUMMARY

- A. Section Includes: Fiberglass reinforced resin fabrications as scheduled at the end of this section

1.03 RELATED SECTIONS

- A. Section 0512 - Structural Steel: Support framing for fiberglass fabrications.
- B. Section 06100 - Rough Carpentry: Framing of Openings and Blocking.

NOTE: IN PARAGRAPHS BELOW, INSERT SECTION NUMBERS AND TITLES OF SECTION WHICH CONTAIN SPECIFICATIONS RELATED TO INSTALLATION OF FIBERGLASS FABRICATIONS FOR THIS PROJECT. DELETE PARAGRAPHS

NOTE: DELETE PARAGRAPH "A" BELOW, IF FIBERGLASS FABRICATIONS HAVE INTEGRAL STRUCTURAL SUPPORT, OR STRUCTURAL SUPPORT IS NOT REQUIRED.

- ction 07900: Joint sealants.
- D. Section _____ - : Plumbing specialties.
- E. Section _____ - : Plumbing fixtures and trim.
- F. Section _____ - : Electrical attachments.

1.04 REFERENCE STANDARDS

- A. ASTM D638: Test Method for Tensile Properties of Plastic.
- B. ASTM D695: Test Method for Compressive Strength of Rigid Plastics.
- C. ASTM D790: Test Methods for Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- D. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials.

NOTE: IF PROJECT IS COMPLEX ENOUGH TO REQUIRE PROJECT SPECIFIC, DETAILED ENGINEERING, USE ARTICLES ENTITLED "DESIGN RESPONSIBILITY" AND "DESIGN REQUIREMENTS" FROM SECTION 07455 AND DELETE THE ARTICLE BELOW.

1.05 DESIGN REQUIREMENTS

A. Installed fiberglass fabrications and fastening systems shall withstand:

1. _____ mph winds

NOTE: IN PARAGRAPHS 2 AND 3, SELECT ALLOWABLE DEFLECTION. DELETE NUMBERS WHICH DO NOT APPLY

2. _____ pounds per square inch live load with deflection limited to [1/360][1/240] of span.

3. _____ pounds per square inch dead load with deflection limited to [1/360][1/240] of span.

4. _____ psf snow load

NOTE: DELETE REQUIREMENT BELOW, IF PROJECT IS NOT LOCATED IN AN AREA REQUIRING SEISMIC CONSIDERATION

5. Meet requirements of applicable building codes.

B. Design loads shall not be cumulative.

C. Installed products shall be capable of withstanding positive and negative wind pressure without structural failure, cracking, crazing, permanent distortion or displacement.

NOTE: CONSERVATIVELY SELECT ALLOWABLE DESIGN STRESSES AND RESISTANCES. CONSULT FIBERGLASS FABRICATION MANUFACTURER FOR DESIGN

1.06 SUBMITTALS

A. Shop Drawings: Dimensions, adjacent construction, materials, thicknesses, fabrications details, required clearances, field jointing, tolerances, colors, finishes, methods of support, integration of components and anchorages.

B. Submit list of part numbers.

C. Product Data: Submit manufacturer's product data and installation and maintenance instructions.

D. Manufacturer's Instructions: Submit manufacturer's instructions and recommendations for product delivery, storage and handling.

NOTE: IF SPECIFIC COLOR, TEXTURE AND FINISH HAVE BEEN SPECIFIED, KEEP THE PARAGRAPH BELOW.

E. Product Samples: Submit minimum 3 inch x 5 inch samples in specified color, texture and finish.

NOTE: IF ARCHITECT HAS PROVIDED SAMPLE TO BE MATCH, USED PARAGRAPH BELOW

F. Product Samples: Submit minimum 3 inch x 5 inch sample. Match sample provided by Architect.

G. Submit manufacturer's warranty.

1.07 QUALITY ASSURANCE

A. Inspect each molded piece to ensure that it complies with specified requirements, including nominal dimensions.

NOTE: IF PROJECT COMPLEXITY CREATES A NEED FOR "MOCK-UP" OF FABRICATIONS OR A PREINSTALLATION CONFERENCE, REFER TO SECTION 07455, PART 1. ARTICLES ENTITLED "MOCK-UP AND PREINSTALLATION CONFERENCE" FROM THAT SECTION MAY BE ADDED TO PART 1 OF THIS SECTION, IF NEEDED. DO NOT ADD UNLESS ABSOLUTELY NECESSARY. BOTH OF THESE ITEMS WILL INCREASE COSTS.

NOTE: DELETE ARTICLE BELOW IF WORK IS PUBLICLY FUNDED AND/OR THERE IS NO NEED TO STIPULATE EXPERIENCE REQUIREMENT. SUGGESTED MINIMUM IS THREE.

1.08 MANUFACTURER'S QUALIFICATIONS

- A. Manufacturer: Provide products manufactured by a firm specializing in the manufacture of fiberglass fabrications, with a minimum of three years experience.

1.09 DELIVERY, STORAGE AND HANDLING

- A. Handle, store and transport fiberglass fabrications according to manufacturer's recommendations and in a manner that prevents damage.
- B. Protect fabrications from damage by retaining shipping protection in place until installation.

NOTE: THE PARAGRAPH BELOW MAY BE USED TO AVOID CONFLICT WHEN INSTALLED PARTS WILL BE EXPOSED TO DAMAGE FOR AN EXTENDED PERIOD, PRIOR TO PROJECT COMPLETION.

NOTE: EDIT PARAGRAPH BELOW. INSERT "ARCHITECT", ARCHITECT/ENGINEER" "OWNER'S REPRESENTATIVE" AS APPLICABLE TO PROJECT

- C. Damage Responsibility: Except for damage caused by others, the installer is responsible for chipping, cracking, or other damage to fiberglass fabrications, after delivery to the job site and until installation is completed and inspected and approved by the *****.

NOTE: WHEN A WARRANTY IS REQUIRED THAT EXTENDS BEYOND THE NORMAL "ONE YEAR" WARRANTY THAT IS INCLUDED IN THE MOST COMMONLY USED CONTRACT CONDITIONS, DO NOT INCREASE THE NUMBER OF YEARS WITHOUT VERIFYING THE COST AND AVAILABILITY OF A LONGER WARRANTY WITH MANUFACTURER. THE PARAGRAPH BELOW MAY BE DELETED, IF ONE YEAR WARRANTY FOR OVERALL PROJECT IS INCLUDED IN CONTRACT CONDITIONS.

1.10 WARRANTY

- A. Warrant fabrications to be free from defects due to materials and workmanship for one year.

PART 2 – PRODUCTS

NOTE: LIST ACCEPTABLE MANUFACTURERS. VERIFY THAT LISTED MANUFACTURERS PRODUCE SPECIFIED PRODUCTS.

2.01 ACCEPTABLE MANUFACTURERS

- A. _____

- B. _____
- C. _____

2.02 FABRICATED PRODUCTS

- A. Fabrications required are scheduled at the end of this section.

2.03 MATERIAL CHARACTERISTICS

- A. MOLDED EXTERIOR SURFACE: U-V inhibited, NPG-ISO polyester gel coat, 18 to 22 mils thick.

NOTE: SELECT 1 OR 2. INSERT COLOR IF 2 IS USED.

- 1. Gel Coat Color: Match Sample supplied by Architect.
- 2. Gel Coat Color: _____

- B. BACK UP LAMINATE:

- 1. Resin: Isophthalic Polyester resin.

NOTE: DELETE PARAGRAPH a) BELOW IF FIRE RETARDANT RESIN IS NOT REQUIRED. FIRE RETARDANT RESINS ARE AVAILABLE, BUT MORE EXPENSIVE.

- a) Fire Retardant: ASTM E-84, Class 1 (flame spread rating of 25 or less)

- 2. Fiberglass Reinforcement

- a) "E" type fiberglass.
- b) Random chopped glass fibers.

NOTE: ADDITIONAL FIBER CONFIGURATIONS ARE AVAILABLE. CONSULT MANUFACTURER FOR INFORMATION REGARDING CONFIGURATION USED FOR FABRICATIONS REQUIRED FOR THIS PROJECT.

- c) Glass content approximately 25% to 30% except, 15%) for filled resin systems.

- 3. Laminate Thickness

- a) Nominal thickness 3/16"
- b) Additional thickness and reinforcement, and sandwich structures as indicated and as required for structural integrity.

NOTE: PROPERTIES LISTED ARE AVERAGE BASED ON RANGE AVAILABLE WITH FIBERGLASS MATERIAL. THESE ARE NOT MAXIMUMS OR MINIMUMS.

2.04 AVERAGE MECHANICAL PROPERTIES

PROPERTY	VALUE	TEST METHOD
"Tensile strength	72,000 PSI	ASTM D638
Flexural strength	20,000 PSI	ASTM D790
Flexural modulus	0.9 x 10 ⁶ PSI	ASST D790

Compressive strength	17,000 PSI	ASTM D695
Bearing strength	9,000 PSI	ASTM D638
Thermal expansion	$10 \times 10^{-6} (^{\circ}\text{F})$	
Specific gravity	1.5	
<i>NOTE: CERTAIN APPLICATIONS MAYBE BEST SUITED TO SPECIALTY RESINS NOT CAPABLE OF MEETING THE ABOVE MECHANICAL STRENGTH VALUES. SUCH RESINS WILL BE ALLOWED WITH COMPENSATORY INCREASES IN MINIMUM THICKNESS.</i>		

2.05 FINISH

NOTE: IF COLOR HAS BEEN SELECTED, INSERT IN THE PARAGRAPH BELOW - IF NOT, USE THE SECOND OPTION.

- A. Color: _____
- B. Color as selected by: _____
- C. Surface Texture/Exposed side: _____
- D. Finish _____

2.06 TOLERANCES

- A. Part Thickness: + or - 1/16 inch.
- B. Gel Coat Thickness: + or - 2.5 mils.
- C. Length: + or - 1/8 inch.
- D. Variation from Square: 1 /8 inch.
- E. Hardware Location Variation: + or - 1/4 inch.

2.07 IDENTIFICATION

- A. Identify each part with a permanent serial number.
- B. Number parts to coordinate with shop drawings.

2.08 CURING AND CLEANING

- A. Cure and clean components prior to shipment and remove material which may be:
 1. Toxic to plant or animal life.
 2. Incompatible with adjacent building materials.

2.09 ANCHORS AND FASTENERS

- A. Provide anchors and fasteners and other accessories required for proper installation of fabrications as recommended and approved by fiberglass fabrication manufacturer.

PART 3 - EXECUTION

3.01 PRE-INSTALLATION EXAMINATION

- A. Observe field conditions and verify that substrates are ready for installation of fiberglass fabrications.
- B. Check field dimensions affecting the installation of fiberglass fabrications.
- C. Verify that bearing surfaces are true and level.
- D. Verify that support framing has been constructed to allow accurate placement, alignment and connection of fabrication to structure.

NOTE: EDIT PARAGRAPHS BELOW. INSERT "ARCHITECT", ARCHITECT / ENGINEER"CONSTRUCTION MANAGER"; "OWNER'S REPRESENTATIVE"AS APPLICABLE TO PROJECT

- E. Report discrepancies between design dimensions and field dimensions, which could adversely affect installation, to the *****.
- F. Do not proceed with installation until discrepancies are corrected, or until installation requirements are modified and approved by the *****.
- G. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

NOTE: IN THE FOLLOWING PARAGRAPH, DELETE THE WORDS "approved shop drawings", IF SHOP DRAWINGS WERE NOT REQUIRED.

- A. Install fabrications in accordance with manufacturer's instructions and approved shop drawings.

3.03 ALLOWABLE TOLERANCES FOR INSTALLED UNITS

- A. Maximum Offset from True Alignment: 1/8 []inch in 20 feet.
- B. Maximum Variation from True Position: [1/4] []inch in 20 feet.

3.04 CLEANING

- A. Clean installed fiberglass fabrications using cleaning methods and materials approved by manufacturer.

3.05 PROTECTION OF INSTALLED FABRICATIONS

- A. Comply with manufacturer's recommendations and instructions for protecting installed fabrications during construction activities.

NOTE: IF LOCATIONS ARE NOT SHOWN ON THE DRAWINGS, A "LOCATION" COLUMNCOULD BE ADDED TO THE CHART BELOW.

3.06 SCHEDULE OF FABRICATED PRODUCTS

NOTE: DESCRIBE THE TYPE OF COMPONENT, FINISH, TEXTURE AND COLOR

DESCRIPTION	FINISH	TEXTURE	COLOR
Column			
Covers			
Cornice			
Domes			
Molding			
Planters			
Railings			
Trim			

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END OF SECTION