



STRONGWELL®

STRONGIRT™ SPECIFICATION

Section 07 40 00

**PULTRUDED FIBERGLASS REINFORCED POLYMER (FRP) CLADDING
SUPPORT SYSTEM**

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SECTION 07 40 00

PULTRUDED FIBERGLASS REINFORCED POLYMER (PFRP) CLADDING SUPPORT SYSTEM

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

NOTE TO SPECIFIER: Delete any sections below not relevant to this project; add others as required.

- A. Division 01: General requirements
 - a. Section 01 3000: Administrative requirements
- B. Section 03 3000: Concrete wall substrate
- C. Section 04 2000: Concrete masonry unit substrate
- D. Section 05 0523: Metal Fastening
- E. Section 05 4000: Cold formed metal framing (Metal stud substrate)
- F. Section 06 1100: Wood framing
- G. Section 06 1600: Sheathing
 - a. Section 06 1613: Insulating sheathing
 - b. Section 06 1633: Wood board sheathing
 - c. Section 06 1643: Gypsum sheathing
- H. Section 06 7000: Structural composites
- I. Section 07 2100: Thermal insulation
 - a. Section 07 2110: Building insulation
- J. Section 07 4200: Wall panels
 - a. Section 07 4213: Metal wall panels
 - b. Section 07 4456: Mineral-fiber-reinforced cementitious panels
 - c. Section 07 6200: Sheet metal flashing and trim
- K. Section 07 4600: Siding
- L. Section 09 2100: Plaster and gypsum board assemblies

1.02 SUMMARY:

- A. This section includes:
 - Pultruded Fiberglass Reinforced Polymer (PFRP) cladding support system, STRONGIRT™, used in combination with _____ (*Specifier to fill the blank for thermal insulation*) thermal insulation with _____ (*Specifier to fill the blank for type of cladding*) exterior wall cladding.
- B. The cladding support system shall be connected to _____ (*Specifier to fill the blank for type of substrate*) substrate

1.03 SCOPE OF WORK:

- A. Furnish all labor, materials, equipment, and incidentals governed by this section necessary to install the Pultruded Fiberglass reinforced polymer (PFRP) cladding support system, STRONGIRT™, using the insulation over the substrate as specified herein.

1.04 QUALITY ASSURANCE:

- A. The material covered by these specifications shall be furnished by an ISO 9001 certified manufacturer of proven ability who is regularly engaged in the manufacture, fabrication, and installation of cladding support systems.
- B. Substitution of any component or modification of system shall be made only when approved by the Architect or Design Engineer.
- C. Fabricator Qualifications: Firm experienced in successfully producing PFRP fabrications similar to that indicated for this project, with sufficient production capacity to produce required units without causing delay in the work.
- D. In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for work.

1.05 DESIGN CRITERIA:

- A. The design of Pultruded Fiberglass reinforced polymer (PFRP) cladding support system, including connections, to withstand the wind loads and the self-weight of the PFRP cladding support system assembly as per the International Building Code (IBC) or in accordance with other governing building codes and standards.
- B. Furnish the thermal performance data (R- and U- values) of the assembly including the PFRP cladding support system and the insulation. The thermal resistance values (R- and U- values) shall meet the requirements of the ASHRAE code for the geographical zone of the project.
- C. Furnish the fire resistance of the cladding support system assembly, including the cladding, PFRP cladding support system with the insulation, as per NFPA 285.
- D. The PFRP cladding support system assembly including the insulation shall meet class 1 fire rating as per the latest ASTM E 84 with a Flame Spread Index (FSI) of 25 or less and a Smoke Developed Index (SDI) of 450 or less

1.06 SUBMITTALS:

- A. Shop drawings of Pultruded Fiberglass Reinforced Polymer (PFRP) cladding support system along with the insulation, cladding and other necessary accessories shall be submitted to the design engineer for approval in accordance with the administrative requirements of section 01 3000. Fabrication shall not start until receipt of design Engineer's approval marked "Approved As Submitted" or "Approved As Noted".

- B. Detail shop drawings showing:
 - 1. Dimensions
 - 2. Sectional assembly
 - 3. Location and identification mark
 - 4. Size and type of cladding support system, insulation, fasteners and other accessories as required

- C. Samples of each type of product shall be submitted for approval in accordance with the requirements of section 01 3000.

1.07 SHIPPING AND STORAGE INSTRUCTIONS:

- A. All systems, sub-systems, and structures shall be shop fabricated and assembled into the largest practical size suitable for transporting.

- B. All materials and equipment necessary for the fabrication and installation of Pultruded Fiberglass Reinforced Polymer (PFRP) cladding support system and appurtenances shall be stored before, during, and after shipment in a manner to prevent cracking, twisting, bending, breaking, chipping, or damage of any kind to the materials or equipment, including damage due to over exposure to the sun. Any material that in the opinion of the design engineer, has become damaged as to be unfit for use, shall be promptly removed from the site of work, and the contractor shall receive no compensation for the damaged material or its removal.

- C. Identify and match-mark all materials, items, and fabrications for installation and field assembly.

PART 2 – PRODUCTS

2.01 GENERAL:

- A. Materials used in the manufacture of the Pultruded Fiberglass Reinforced Polymer (PFRP) cladding support system shall be certified as meeting the manufacturer's approved list of raw materials.
- B. The visual quality of the pultruded shapes shall conform to ASTM D-4385-19.
- C. All exposed surfaces shall be smooth and true to form, consistent with ASTM D-4385-19.
- D. All the dimension tolerances of PFRP cladding support material, including the cut length tolerances shall be in accordance with ASTM D-3917-15
- E. Manufacturer: STRONGWELL Corp, 400 commonwealth Ave, Bristol, VA 24201
- F. Pultruded FRP products shall be manufactured and fabricated in the USA. Manufacturer shall provide a written Certificate of Compliance.
- G. The materials covered by these specifications shall be furnished by an ISO 9001 certified manufacturer.

2.02 PULTRUDED FIBERGLASS REINFORCED POLYMER (PFRP) CLADDING SUPPORT MEMBER (STRONGIRT™):

A. Material

All PFRP cladding support system, STRONGIRT™, noted in 1.02 shall be manufactured using:

- a. A pultruded process utilizing premium polyester resin with additional flame retardant additives.
- b. E or E-CR glass rovings and continuous filament mat
- c. Synthetic surface veil fabric with embedded STRONGIRT™ logo shall encase the glass reinforcement.
- d. The width of the STRONGIRT™ shall be a nominal of ____ (*specifier to pick a size from 2.4"-6.4" in ½" increments*) to accommodate an insulation of thickness ____ (*specifier to pick a size from 2"-6" in ½" increments*)

B. Process

- 1. Manufactured by the pultrusion process.

C. PFRP Cladding Support system (STRONGIRT™) performance requirements:

- A. STRONGIRT™ shall achieve a flame spread rating of 25 or less in accordance with ASTM test method E-84, the flammability characteristics of UL 94 V-0 and the self-extinguishing requirements of ASTM D-635. All PFRP cladding support members shall contain a UV inhibitor to inhibit damage due to UV exposure.

Table 1- STRONGIRT™ Minimum Properties

Property	Test Method	Minimum Value*
Tensile Strength (LW), psi	ASTM D 638	30,000
Tensile Modulus (LW), psi	ASTM D 638	2.5 x 10 ⁶
Short Beam Shear Strength (LW), psi	ASTM D 2344	4,500
Screw Pullout Load*, lbf	ASTM D 7332	862
Flammability Classification	UL-94	V-0
Flame Spread Index	ASTM E-84	25 or less
Thermal Conductivity ⁺ , BTU-in/ft ² -Hr/°F	ASTM C177	4

* Screw Pullout Load is the **mean value** tested using ¼" # 14 external hex head drilling screws.

+ Typical value

PART 3 – EXECUTION

3.01 PREPARATION:

- A. Coordinate and furnish setting drawings, diagrams, and templates for all cladding support system, insulation and accessories. Provide instructions for installation of PFRP cladding support system.
- B. Coordinate delivery of such items to project site.

3.02 INSPECTION AND TESTING:

- A. Inspect the project area for proper conditions for installations including the tolerances for proper alignment and fittings of accessories to install the PFRP cladding system.
- B. The Design Engineer shall have the right to inspect all materials to be furnished under these specifications prior to their shipment from the point of manufacture.
- C. All labor, power, materials, equipment, and appurtenances required for testing shall be furnished by the Contractor at no cost to the Owner.

3.03 INSTALLATION, GENERAL:

- A. Fastening to in-place construction: Provide anchorage devices and fasteners where necessary for securing PFRP cladding system to in-place construction; include threaded fasteners and other connectors as determined by the Design Engineer of Record.
- B. Cutting, fitting, and placement: Perform cutting, drilling, and fitting required for installation of PFRP cladding support system to avoid any gaps and voids. Set PFRP cladding support STRONGIRT™ accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; measured from established lines and levels.
- C. Install the rest of the components of PFRP cladding support system (other than STRONGIRT™) such as cladding, furring, insulation, sheathing as per the drawings.

End of Section