



STRONGWELL®

STRONGIRT™ SPECIFICATION

Section 07 40 00

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

REVISED 07.2021

BRISTOL FACILITY

400 Commonwealth Ave., Bristol, VA 24201 USA
(276) 645-8000

HIGHLANDS FACILITY

26770 Newbanks Road, Abingdon, VA 24210 USA
(276) 645-8000

CHATFIELD FACILITY

1610 Highway 52 South, Chatfield, MN 55923 USA
(507) 867-3479

www.strongwell.com

Liability Disclaimer

The specifications and material property information contained in these STRONGWELL SPECIFICATIONS are provided as a service to architects and Design Engineers who desire to use this information in the creation of construction specification documents. The use of these specifications is at your own risk. These specifications may contain errors, omissions, and inaccuracies. NEITHER STRONGWELL NOR ANY OTHER PARTY INVOLVED IN THE CREATION OF THESE SPECIFICATIONS SHALL BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES ARISING OUT OF OR CONNECTED IN ANY MANNER WITH YOUR ACCESS TO OR USE OF THESE STRONGWELL SPECIFICATIONS INCLUDING, WITHOUT LIMITATION, ANY LOST PROFITS, BUSINESS INTERRUPTION, OR LOSS OF PROGRAMS OR INFORMATION, EVEN IF STRONGWELL HAS BEEN SPECIFICALLY ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. WITHOUT LIMITING THE FOREGOING, EVERYTHING IN THESE SPECIFICATIONS IS PROVIDED TO YOU "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED INCLUDING, BUT NOT LIMITED TO, THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, NONINFRINGEMENT AND FREEDOM FROM COMPUTER VIRUS.

Strongwell reserves the right to change its website at any time, including these STRONGWELL SPECIFICATIONS, as well as the terms and conditions of its website, and you will be bound by the terms of any such changes. In this regard, we suggest that you refer to Strongwell's website terms and conditions periodically so that you are aware of any changes.

Table of Contents

PART 1: GENERAL

1.01	Related Documents	3
1.02	Summary.....	3
1.03	Scope of Work	3
1.04	Quality Assurance.....	4
1.05	Design Criteria	4
1.06	Submittals	4
1.07	Shipping and Storage Instructions	5

PART 2: PRODUCTS

2.01	General	6
2.02	Pultruded Fiberglass Reinforced Polymer (PFRP) cladding support member (strongirt™):.....	6
2.03	PFRP Cladding Support member (STRONGIRT™) performance requirements	7

PART 3: EXECUTION

3.01	Preparation	8
3.02	Inspection and Testing.....	8
3.03	Installation, General	8

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 the 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 the 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

The 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 1.9"-6.4" in ½" increments, 5.5" ULTRA, 6.0" ULTRA, or 6.5" ULTRA*) to accommodate an insulation of thickness ____ (*specifier to pick a size from 1.5"-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™ Properties

Property	Test Method	Average Ultimate Value*
Tensile Strength (LW), psi	ASTM D638	77,370
Tensile Modulus (LW), psi	ASTM D638	4.39 x 10 ⁶
Short Beam Shear Strength (LW), psi	ASTM D2344	5,313
Screw Pullout Load*, lbf	ASTM D1761	869
Flammability Characteristics†	ASTM E84	Flame Spread: Class A, 10 Smoke Density: Class A 160
	NFPA 285	Passed
Thermal Conductivity+, BTU-in/ft ² -Hr/°F	ASTM E1530	2.64
Bearing load	ASTM D5961 (Procedure A)	1330 lb
Screw Head Pull-Through Load*	ASTM D7332 (Procedure B)	935 lb

* Tested using ¼" # 14 external hex head self drilling screws.

+ Typical value; † Tested as an assembly. Test reports available upon request.

PART 3 – EXECUTION

3.01 PREPARATION:

- A. Coordinate and furnish the assembly 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 other components of PFRP cladding support system (other than STRONGIRT™) such as cladding, furring, insulation, sheathing as per the drawings.

End of Section