
Part 1 General

1.1 SUMMARY

- .1 Section Includes:
 - .1 Supply and install of fibreglass reinforced plastic stair and gratings
 - .2 Engineering shop drawings for design and erection.

1.2 REFERENCES

- .1 ASTM International applicable standards.
 - .1 ASTM D 635 Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
 - .2 ASTM D 732 Shear Strength of Plastics by Punch Tool
 - .3 ASTM E 84 Surface Burning Characteristics of Building Materials
- .2 Manual of Steel Construction of the AISC, current edition.

1.3 SUBMITTALS

- .1 Product Literature:
 - .1 Submit manufacturer's published literature including structural design data, structural properties data, grating load/deflection tables, corrosion resistance tables, certificates of compliance, test reports as applicable, concrete anchor systems and their allowable load tables, and design calculations for systems not sized or designed in the contract documents.
 - .2 Submit manufacturer's product information clearly showing material sizes, types, styles, part or catalog numbers, complete details for the fabrication of and erection of components including, but not limited to, location, lengths, type and sizes of fasteners, clip angles, member sizes, and connection details.
- .2 Shop Drawing:
 - .1 Submit shop drawings for fabrication and erection, including structural bracing, anchor bolt setting plan, components, and accessories. Drawings shall indicate all parts to be erected or assembled and clearly depict the methods and sequence of assembly and erection. The drawings are to be stamped and signed by a Professional Engineer licenced in the province of construction.
- .3 Samples:
 - .1 Submit sample pieces of each item specified herein for acceptance by the Departmental Representative as to quality and color. Sample pieces shall be manufactured by the method to be used in the work.

1.4 QUALITY ASSURANCE

- .1 Manufacturer's Qualifications:

- .1 The manufacturer shall be experienced in the manufacture of fibreglass reinforced plastic (FRP) structures of equivalent type, size, and complexity required by these Subcontract documents. Manufacturer shall have a minimum of 5 years experience in fabrication of FRP structures.
- .2 The Subcontractor will certify in writing that materials have been tested in accordance with a certified quality assurance program and have been proven to be satisfactory for the use intended by these Subcontract documents.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver to the site all materials required for erection. Place members and components off the ground using pallets, platforms, or other supports. Provide covers and protect members and packaged materials from the weather.

Part 2 Products

2.1 MATERIALS

- .1 Primary Framing:
 - .1 Structural shapes shall be pultruded from fibreglass reinforced plastic resins having as class I fire rating per ASTM E 84, passing with the following minimum strength standards:
 - .1 Flexural Strength: ASTM-D-790
 - .2 Flexural Modulus: ASTM-D-790
 - .3 Compressive Strength: ASTM-D-695
 - .4 Tensile Strength: ASTM-0-638
 - .5 Shear Strength: ASTM-D-732
- .2 All Fasteners and saddle clips: 316 stainless steel

2.2 FABRICATION

- .1 Structural members, fasteners, and accessories shall be shop fabricated in accordance with applicable ASTM standards.
- .2 Materials furnished shall be within the standard industry tolerances for that material as specified by the manufacturer.
- .3 Manufacturer's workmanship shall be such that the parts are accurately made and true to dimension so that in erection of same, all parts will properly fit together.
- .4 The dimensional tolerances of pultruded shapes shall be as specified in ASTM 3917-80 "Standard Specifications for Dimensional Tolerances of Thermosetting Glass Reinforced Plastic Pultruded Shapes".
- .5 All FRP grating and structural members that are cut or drilled shall have those affected surfaces sealed with catalyzed resin sealant prior to installation. The resin and other materials used shall be compatible with the environment and as a minimum shall be similar to, if not the same, as the base resin used.

- .6 Fabrication and installation of all pultruded shapes shall be done in such a way as to prevent attack from corrosive agents. Extra care should be taken to prevent any damage to the pultruded sections. Scratches and gouges, as well as all cut edges and drilled holes, shall be resin sealed to prevent excessive attack of the laminate. The resin and other materials used shall be compatible with the environment and as a minimum shall be similar to, if not the same, as the base resin used. Drilled holes may be oversized a maximum of 1.5 mm.

Part 3 Execution

3.1 ERECTION

- .1 The contractor shall examine the areas and conditions under which the work is to be installed. Do not proceed with the work until unsatisfactory conditions have been corrected. Beginning of installation means the erector accepts existing conditions.
- .2 Erect framing, grating and accessory items in accordance with manufacturer's erection drawings and as directed by manufacturer's written recommendations.
- .3 All framing work shall be true to line, level, and plumb.
- .4 In order to prevent secondary stresses, do not force members into position. Plan erection sequences accordingly.
- .5 Provide temporary bracing and supports as required to ensure frame stability during erection.
- .6 Completed frame and grating shall comply with approved erection tolerances and shop drawing requirements.
- .7 Grating is to be fastened to support members with 6mm diameter fasteners in the following pattern: two fasteners located between the third and fourth vertical on each end of a panel and one fastener in the middle on intermediate supports.

3.2 CLEANING

- .1 Upon completion of work contained in these specifications, leave all work and premises clean and in satisfactory condition.

3.3 INSPECTION

- .1 The completed assembly shall undergo a final inspection by manufacturer's representative to certify the finished product has been erected in accordance with the manufacturer's shop drawings and design specifications.

END OF SECTION