

RBI STRUCTURES

RBI Carwash Structures / Enclosures

Manufactured by Rough Brothers Inc.

All Aluminum Glazed Commercial Carwash Structures

Section 13120

PART 1 – GENERAL

PART 2 – PRODUCTS

PART 3 – EXECUTION

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PART 1 - GENERAL

1.01 GENERAL

- A. Furnish pre-fabricated and pre-engineered aluminum framed, glazed structures intended to serve as carwash enclosures.
- B. The following related sections contain requirements that relate to the Section:

Section: Glazing
- C. It is not the intent of this portion of the specifications to cover concrete, grouting, masonry work, plumbing, electrical work, (power and control wiring), utility connections, final cleaning of glazing, nor flashing. These portions shall be the responsibility of the General Contractor

1.02 PERFORMANCE REQUIREMENTS

- A. Deflection – All load bearing members under any design load combination (including dead load) shall not exceed $L / 175$ of its clear span.
- B. Static Water Resistance – Complies with testing per ASTM –E331
- C. Wind Loading – Withstands wind loads based on ANSI-A58.1/ASCE-7 Guidelines
- D. Live / Snow Loading – Withstands vertical roof loads based on ICBO/BOCA/SBCCI guidelines or local building codes whichever is greater.

Dead Load - 10 lbs per psf

Live Load – 30 lbs psf on horizontal projected areas

Wind Load – 90 mph on vertical projected areas

1.03 QUALITY ASSURANCE

- A. The structure shall be erected by the manufacturer or their qualified specialty contractor with at least 5 years experience in erecting pre-engineered structures of similar size and complexity.
- B. The structure shall be manufactured in accordance with standard approved practices. Testing shall be performed in accordance with ASTM standards and test reports must be certified and submitted by an independent test laboratory.

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- C. Structural performance shall be based on: Maximum deflection of $L/175$ of span.

1.04 SUBMITTALS

- A. Manufacturer must submit three (3) sets of approved drawings.
- B. Approval submittals shall include engineered stamped drawings for the appropriate State, and a full set of engineering calculations.
- C. Approved drawings shall include the following individual detail sheets:
- Cover Sheet
 - Floor / Post Plan
 - Post Anchoring Detail
 - Roof Framing Detail
 - Roof Glazing Detail
 - Sidewall Elevations
 - Gable Elevations
 - Partition Elevations (if req'd)
 - Vent Detail

1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery of materials to jobsite in manufacturers packaging
- B. Access from unloading area to erection site must be clear and unrestricted
- C. Materials to be stored in a clean, dry and covered area that is secure and protected from weather.
- D. Inspect and report any freight or handling damage immediately to the manufacturer.

PART 2 – PRODUCTS

2.01 MANUFACTURER

- A. Drawings and specifications are based on RBI Carwash Enclosures as manufactured by Rough Brothers Inc., 5513 Vine Street, Cincinnati OH 45217 (1-800/543-7351)

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- B. Structure shall be designed and detailed according to good engineering practice. All primary framing shall be 6061-T6 and 6063-T6 Alloys. All aluminum flashing or formed sheet shall be 5005-H14 or 3005-H14 Alloy. Framing shall consist of clear span aluminum rigid frames on 4' centers spanning the entire width of the structure with a 4/12 roof pitch or alternative.
- C. Sidewall columns shall be attached to top of foundation or kneewall on slab with epoxy set or expandable anchor bolts. Drilling for anchors and setting of anchor bolts to be performed by Structure supplier.
- D. Structural connections shall be made with stainless steel or Galvanized screws and / bolts meeting ASTM standard A276.
- E. Structural members shall be finished with an electrostatic applied, temperature cured coating.
- F. Structure shall be designed in accordance with current Aluminum Association "Specifications for Aluminum Structures". The maximum allowable deflection of structural members shall be L/175 of the span. Structure shall include adequate bracing for the lateral support of structural members and framing, and for the resistance to wind forces. Structural columns and rafters must be tubular in section and occur on 4'-0" center line to center line. Joint reinforcement at ridge and eave by concealed means, without exposed fasteners.
- G. Provide all other structural members, bracing, clips and fasteners not mentioned above but required to complete the framework of the carwash enclosure.
- H. When specified and or required, a standard aluminum gutter and downspout will be mounted on the sidewalls and within the fascia of the structure.

2.02 **SIDEWALL AND GABLE GLAZING SYSTEM**

- A. Vertical tubular glazing bars shall be attached to the horizontals with fasteners or shear blocks and assembled to minimize exposed fasteners.
- B. Bars shall have extruded races for glazing gaskets interior and exterior.
- C. The exterior bar cap cover (unless specified otherwise) shall cover the entire glazing bar. All fasteners securing the sidewall glazing shall be unexposed.
- D. The entire glazing system including operable vents shall incorporate a continuous thermal isolator to minimize direct, metal to metal contact between interior and exterior members.

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- E. Gaskets shall be EPDM with a sufficient durometer compatible with the glazing materials.
- F. Glazing tape shall be closed cell, polyolefin with adhesive on one side.
- G. Sills are not allowed.

2.03 ROOF GLAZING SYSTEM

- A. Rafters shall extend from eave to ridge in one piece and contain condensation gutters to direct water to the eave weeping system. Rafters shall be tubular in section.
- B. Aluminum glazing bars shall be of sufficient size and section modulus to carry the required design loads. Limit deflection of any supporting member shall meet the L/175 requirement.
- C. Glazing bars shall have integral races to receive glazing gaskets to prevent glazing from contacting the bar or bar cap.
- D. Roof glazing system shall incorporate a continuous thermal isolator to minimize direct, metal to metal contact between interior and exterior members.
- E. Gaskets shall be EPDM with a sufficient durometer compatible with the glazing materials.

2.04 GLAZING

- A. Sidewall and gable glass shall be ¼” tempered clear lites or as specified from the manufacturers standard list.
- B. Insulated glass panels shall be manufactured in accordance to the standard procedures as outlined by FGMA and IGCC.
- C. Roof Glazing shall be 8 mm tinted polycarbonate or as specified from the manufacturers standard list.
- D. Acrylic, Polycarbonate or Solid Insulated / Laminated Panels may be specified from the manufacturer’s standard list.

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PART 3 - EXECUTION

3.01 SITE PREPARATION AND INSPECTION

- A. General Contractor shall direct, oversee and inspect all site work related to the Carwash Enclosure. Site preparation must be in accordance with final drawings and specifications provided by manufacturer. Concrete slab and or masonry kneewall must be level, square and plumb and overall dimensions must be in accordance with manufacturer's specifications.
- B. Enclosure contractor shall inspect site and notify general contractor in writing of any condition/s that may inhibit the proper and timely construction of the enclosure. Enclosure contractor is under no obligation to proceed until conditions have been sufficiently corrected.

3.02 INSTALLATION

- A. Drilling and setting of anchor bolts shall be performed by enclosure contractor.
- B. Installation of the entire enclosure system and all components shall be in strict accordance with manufacturer's recommendations.

3.03 CLEANING AND GROUTING

- A. After the enclosure has been fully erected, the general contractor shall provide the materials and labor to grout the base of the wall and the slab or kneewall to produce a finished joint.
- B. Enclosure contractor shall place all trash and debris into appropriate receptacles provided by the general contractor.
- C. Enclosure contractor shall clean the glazing of the structure at the time of installation. Subsequent cleaning shall be the responsibility of the general contractor.

3.04 WARRANTY

- A. Enclosure manufacturer shall provide a one (1) year warranty on materials and workmanship from the date of substantial completion.
- B. Provide complete warranty information on all manufacturers providing accessories within the enclosure.