

GLASS BALUSTRADES

1. GENERAL

1.1 Engineering Design

- .1 Retain a registered professional engineer to design the work of this Section in compliance with requirements of the governing building code.

1.2 Quality Assurance

- .1 Do aluminium welding to CSA W59.2 by fabricators certified by the Canadian Welding Bureau to CSA W47.2.
- .2 Do not mar surface finishes with welds in back of exposed surfaces. Do not deform the exposed metal and finish in any way by welding.
- .3 Provide welded joints of adequate strength and durability with jointing tight and flush.
- .4 File or grind exposed welds smooth and flush. Do not leave grinding marks.

1.3 Submittals

- .1 Shop Drawings: Bearing the stamp and signature of the professional engineer responsible for the design of work of this Section. Show handrail construction, methods of joining, fastening, anchorage to supporting members, as well as type of metals, glazing, material thicknesses and gauges, finishes, provision for expansion and contraction, and other pertinent data and details.
- .2 Samples: Two 300 mm x 300 (12" x 12") samples of glass specified, and 150 mm (6") long handrail and shoe sample with glass glazed in, fully representing the physical properties of the materials to be supplied.
- .3 Maintenance Instructions: Submit three (3) copies of a maintenance manual for inclusion in the data book. Give specific warning of any maintenance practice or materials which may damage or disfigure the finished work.

1.4 Delivery, Storage and Handling

- .1 Handle and store materials and products according to manufacturer's recommendations, and to prevent damage. Deliver and store packaged materials and products in original, undamaged containers with manufacturer's labels and seals intact.

1.5 Extended Warranty

- .1 Provide a 2 year extended warranty, commencing from date of Substantial Performance, against faulty materials and workmanship.

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2. PRODUCTS

2.1 Materials

- .1 Specified Products: Design of work of this Section is based on products by C.R. Laurence Co., Inc.. Products by other manufacturers similar in function, design, performance, and construction complying with requirements of this Section may be incorporated into the Work subject to Contract Administrator's acceptance.
 - .1 Aluminium Balustrade Base Shoe and Top Cap: Predrilled base shoe, non-predrilled top cap, longest permissible length, clear anodized finish, B5S Series.
 - .2 Aluminium Handrail Bracket: Through glass mounting, 3-way adjustable, clear anodized finish.
 - .3 Aluminium Handrail: 50 mm outside diameter, complete with welded end closure piece, clear anodized finish.
- .2 Aluminium Shapes and Extrusions: AA6061-T6 alloy, anodizing quality.
- .3 Glass: CAN2-12.1, Type 2, Class B, fully tempered clear glass, heat treated using the horizontal tong free method, with roll-wave distortion parallel to bottom edge of glass as installed.
 - .1 Exposed Edges: Polished chamfer.
 - .2 Butt Edges: Flat Ground.
- .4 Spacers, Gaskets and Setting Blocks: 45, 70 and 90 Durometer A hardness plus/minus 5 respectively, neoprene rubber or EPDM, resistant to sunlight, weathering, oxidation and permanent deformation under load.
- .5 Glazing Grout: High strength, non-shrinking cementitious grout.
- .6 All Glazing Materials, Products, Primers And Cleaning Solvents: Mutually compatible.
- .7 Colours For Glazing Materials: As selected later and not necessarily standard colours.
- .8 Sealant: One component neutral cure silicone sealant, 795 by Dow Corning Canada Inc., SSG-4000 Ultraglaze by GE Silicone or Proglaze SSG by Tremco.
- .9 Curved Glazing: Utilise laminated sections as required to achieve curves indicated.

2.2 Fabrication

- .1 Do not start fabrication until shop drawings have been reviewed, and samples have been approved.
- .2 Insofar as practical, execute fitting and assembly in the shop with the various parts or assemblies ready for erection at the building site.
- .3 Where possible, take field measurements and levels required to verify or supplement those shown on the Drawings for the proper layout and installation of the work.

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- .4 Co-ordinate dimensional tolerances in adjacent building elements and confirm prior to the commencement of the work.
- .5 Fabricate members to the profiles shown on the Drawings.
- .6 Accurately machine file and fit, and rigidly frame together all joints, corners and mitres in metal work. Match components carefully to produce perfect continuity of line and design.
- .7 Metal in contact shall have hairline joints. Location of exposed joints shall be subject to the approval of the Contract Administrator.
- .8 Provide glass panels of equal length in any one area.
- .9 Accurately size glass to fit openings allowing the clearances shown on the Drawings.

3. EXECUTION

3.1 Examination

- .1 Verify dimensions at the site before proceeding with fabrication or glazing units.
- .2 Ensure that openings to be glazed are free from distortion, and that surfaces are free from protrusions that will obstruct face and edge clearances.
- .3 Ensure that surfaces are suitable for adhesion of the glazing materials.
- .4 Ensure that ambient and surface temperatures are above 5 degree C.

3.2 Preparation

- .1 Free rabbets, stops and glass edges of dust, dirt, moisture, oil and other foreign matter detrimental to or obstructing the glazing material.

3.3 Installation

- .1 Securely anchor shoes to substrate.
- .2 Install glass in accordance with manufacturer's instructions and as specified herein.
- .3 Use setting blocks and spacers as required to properly support the glass, centred in place in the glazing space independent of the materials and to uniformly distribute its load.
- .4 Use a minimum of 2 setting blocks, located at the quarter points. Locate spacers in shoes to separate glazing grout and each pane of glass by 3 mm (1/8").
- .5 Set glass in glazing grout, properly centred with uniform bite and face and edge clearance, free from twist, warp or other distortion likely to develop stress or detrimental to appearance.
- .6 Separate each glass panel by 6 mm (1/4") and seal with continuous bead of clear silicone sealant.

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- .7 Install top rails and handrails rattle free, with splice plates at joints and with joints centred on glass panes.
- .8 Leave labels on glass until it has been set and inspected and approved. Leave glass whole and without cracks, scratches or other defects and with settings in perfect condition at completion, to the approval of the Contract Administrator.
- .9 Remove and replace broken, damaged and defective materials and units producing distorted vision as directed by the Contract Administrator.

END OF SECTION