

**AMENDMENTS TO OPSS 908 (DEC 83) –  
CONSTRUCTION SPECIFICATION FOR STEEL BARRIER  
RAIL AND PEDESTRIAN HANDRAIL <sup>1</sup>**

**OPSS 908.05** Under Index, “908.05 Material - Not Used” is amended to “908.05 Material”.

Include as follows:

**908.05           Material**

Specifications for the materials for aluminum handrails shall be as indicated on the drawings.

**OPSS 908.07** is amended with the addition of the following:

**908.07.03       Aluminum Rail**

Components of railings shall be joined by rivetting, bolting, expanding or welding as called for on the drawings. Special aluminum alloy fasteners may be used provided that they are approved by the Commissioner.

Expanding - Tubular balusters may be fastened to the horizontal rails by expanding the tubes where they pass through the rails.

Cutting

- (a) Material 10 mm thick or less may be sheared, sawn or cut with a router. Materials more than 10 mm thick shall be sawn or routed.
- (b) Cut edges shall be true and smooth, and free from excessive burrs or ragged breaks.
- (c) Re-entrant cuts shall be avoided wherever possible. If used, they shall be filleted by drilling prior to cutting.
- (d) Flame cutting or aluminum alloys will not be permitted.

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**1. All references to OPS specifications that have been amended (as noted in LIST T1) are superseded by references to the replacement City of Toronto specifications (as given in LIST T1).**

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Bolting - Bolt holes in 10 mm or thinner material may be drilled or punched to finished size. In material thicker than 10 mm, the holes shall be drilled to finished size or sub-punched smaller than the nominal diameter of the fastener and reamed to size. The finished diameter of holes shall not be more than seven percent greater than the nominal diameter of the fastener except:

- (a) Slotted holes for expansion purposes shall be provided as required on the plans.
- (b) Holes for anchor bolts shall have a diameter of not less than the nominal diameter plus 5 mm and not greater than the nominal bolt diameter plus 10 mm.

Holes shall not be drilled in such a manner as to distort the metal, but holes only slightly misaligned may be reamed to render a reasonable fit.

In all bolts the finished shank shall be long enough to provide full bearing and washers shall be used under the nuts to give full grip when the nuts are tightened.

Welding - Welding shall be permitted only where called for on the plans and shall be done by qualified welders.

Inert Gas Shielded Arc Processes only shall be used as specified in C.S.A. Standard W 59.2-M1991 for Welded Aluminum Construction. The quality of the welding shall be in accordance with C.S.A. Standard W 59.2-M1991 with the exception that it shall not be mandatory for the firm doing the welding to hold a certificate under C.S.A. Standard W 47.2-M1987.

Expanding - Holes shall be drilled not more than 1 mm greater than the nominal diameter of the baluster tube. A standard self-feeding tapered roll expander shall be used. Balusters shall be expanded to give a tight fit in all rails.

End Caps - End caps shall be fitted to all exposed ends of rails or posts.

Contact with Other Metals - Aluminum alloys shall not be placed in contact with copper, copper base alloys, lead or nickel.

Contact with Steel - The contacting surfaces shall be thoroughly coated with aluminum impregnated caulking compound immediately prior to assembly, or a synthetic rubber gasket may be used.

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Contact with Concrete, Wood or Masonry - The contacting aluminum surfaces shall be given two heavy coats of alkali-resistant bituminous paint prior to installation. The paint shall be applied as it is received from the manufacturer without the addition of any thinner. Aluminum surfaces embedded in concrete shall be given one coat of zinc chromate primer prior to installation. The paint shall be allowed to dry before installation.

Erection - Anchorage assemblies, rails and posts shall be erected true to line and level as shown on the plans or as required by the Commissioner. Where shims are required for the alignment of posts, they shall be made from fully annealed alloy known commercially as Alcan 2S or equivalent.

Aluminum railings shall be thoroughly cleaned of all discoloration by approved methods and all marks and scratches occurring during fabrication shall be removed. The Contractor may, at his own expense, apply a thin coat of clear non-yellowing lacquer to the cleaned surfaces, but he shall in any case ensure that the railings, when erected, have a clean surface of uniform appearance and texture.

**OPSS 908.09** is deleted and amended with the following:

**OPSS 908.09 Measurement for Payment**

The quantity of bridge railing for which payment will be made shall be the number of metres of railing installed as measured along the top rail.

**OPSS 908.10** is deleted and amended with the following:

**OPSS 908.10 Basis of Payment**

Payment for bridge railing will be made under the item for and at the unit price quoted per metre of bridge railing and that unit price shall be payment, in full, for all labour, materials and equipment necessary to complete the work.