



**MATERIAL SPECIFICATION FOR
STEEL BEAM GUIDE RAIL**

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1504.01	SCOPE
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This specification covers the requirements for steel beam guide rail, terminal sections, fabricated bases, and installation hardware.

1504.01.01 Specification Significance and Use

This specification is written as a municipal-oriented specification. Municipal-oriented specifications are developed to reflect the administration, testing, and payment policies, procedures, and practices of many municipalities in Ontario.

Use of this specification or any other specification shall be according to the Contract Documents.

1504.01.02 Appendices Significance and Use

Appendices are not for use in provincial contracts as they are developed for municipal use, and then, only when invoked by the Owner.

Appendices are developed for the Owner's use only.

Inclusion of an appendix as part of the Contract Documents is solely at the discretion of the Owner. Appendices are not a mandatory part of this specification and only become part of the Contract Documents as the Owner invokes them.

Invoking a particular appendix does not obligate an Owner to use all available appendices. Only invoked appendices form part of the Contract Documents.

The decision to use any appendix is determined by an Owner after considering their contract requirements and their administrative, payment, and testing procedures, policies, and practices. Depending on these considerations, an Owner may not wish to invoke some or any of the available appendices.

1504.02 REFERENCES

When the Contract Documents indicate that municipal-oriented specifications are to be used and there is a municipal-oriented specification of the same number as those listed below, references within this specification to an OPSS shall be deemed to mean OPSS.MUNI, unless use of a provincial-oriented specification is specified in the Contract Documents. When there is not a corresponding municipal-oriented specification, the references below shall be considered to be the OPSS listed, unless use of a provincial-oriented specification is specified in the Contract Documents.

This specification refers to the following standards, specifications, or publications:

CSA Standards

G40.20-13/G40.21-13 (R2018)	General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel
G164-18	Hot Dip Galvanizing of Irregularly Shaped Articles
W59-18	Welded Steel Construction

ASTM International

A307-21 Carbon Steel Bolts, Studs, and Threaded Rod 60,000 PSI Tensile Strength

1504.05 MATERIALS

1504.05.01 Rail and Terminal Sections

Rail elements shall have a minimum yield strength of 345 MPa.

After fabrication, all rail elements and terminal sections shall be hot dip galvanized according to CSA G164.

1504.05.02 Fabricated Steel Bases

Steel bases shall be fabricated according to CSA G40.20/G40.21. After fabrication, steel bases shall be hot dip galvanized according to CSA G164.

1504.05.03 Installation Hardware

All bolts, nuts, and washers shall be according to ASTM A307 and hot dip galvanized according to CSA G164.

1504.07 PRODUCTION

1504.07.01 Steel Beam Guide Rail and Terminal Sections

Steel beam guide rail shall consist of rail elements fabricated to develop continuous beam strength with a cross-section as specified in the Contract Documents.

Bolt holes in rail elements, terminal sections, and fabricated bases shall be perpendicular to the surface and shall not deviate more than 1.0 mm in any direction from the true location. Rail element and terminal section ends shall be cut square.

After fabrication, prefabricated curved steel rail elements shall be galvanized according to CSA G164.

Steel beam guide rail components furnished under this specification shall be interchangeable with similar components regardless of the source or manufacturer.

1504.07.02 Marking

As a minimum, each rail element shall be marked with the following information:

- a) Name, trademark, or brand of the manufacturer.
- b) Standard designation 1504. M180A2 will be accepted as an equivalent standard designation.
- c) Identification symbols or code for heat.
- d) Week number and year of production.

Markings shall be clearly and permanently stamped in the valley of the centre corrugation, placed at a location clear of the splice overlap, and shall not be obscured after installation. The height of the letters and numerals shall be within the range of 19 to 32 mm.

1504.07.03 Welding

All welds shall be according to CSA W59 and shall be continuous.

1504.09 OWNER PURCHASE OF MATERIAL

1504.09.01 Measurement and Payment

For measurement purposes, a count shall be made of the number of steel beam guide rail elements delivered and accepted.

For measurement purposes, a count shall be made of the number of terminal sections delivered and accepted.

For measurement purposes, a count shall be made of the number of fabricated steel bases for guide rail posts delivered and accepted.

Installation hardware shall be measured in the units specified in the purchasing order, delivered and accepted.

Payment at the price specified in the purchasing order shall be for the supply of steel beam guide rail elements, terminal sections, fabricated steel bases, and installation hardware delivered to the destination or destinations at the dates and times specified.

The cost of all testing, except that performed in the Owner's laboratory, shall be included in the price.

**Appendix 1504-A, November 2022
FOR USE WHILE DESIGNING MUNICIPAL CONTRACTS**

Note: This is a non-mandatory Commentary Appendix intended to provide information to a designer, during the design stage of a contract, on the use of the OPS specification in a municipal contract. This appendix does not form part of the standard specification. Actions and considerations discussed in this appendix are for information purposes only and do not supersede an Owner's design decisions and methodology.

Designer Action/Considerations

The designer should ensure that the General Conditions of Contract and the 100 Series General Specifications are included in the Contract Documents.

Related Ontario Provincial Standard Drawings

OPSD 912.101	Guide Rail System, Steel Beam, Rail, Component
OPSD 912.104	Guide Rail System, Steel Beam, Steel Post with Wooden Offset Block, Component
OPSD 912.105	Guide Rail System, Steel Beam, Base Plate, Component