

STAINLESS STEEL REINFORCING BAR - Item No.
STAINLESS STEEL MECHANICAL CONNECTORS - Item No.

Special Provision No. 905S04

May 2008

OPSS 905, May 1994, Construction Specification for Steel Reinforcement for Concrete is amended as follows:

905.02 REFERENCES

Section 905.02 of OPSS 905 is amended as follows:

Canadian Standard Association Standards:

This list is amended to include the addition of the following:

CAN/CSA G30.18-M92 - Billet Steel Bars for Concrete Reinforcement
CAN/CSA-S6-06 Canadian Highway Bridge Design Code

American Society for Testing and Materials Standards:

This list is amended to include the addition of the following:

ASTM A955M-96 - Deformed and Plain Stainless Steel Bars for Concrete Reinforcement

Section 905.02 is amended by the addition of the following:

Ministry of Transportation Publications

Structural Manual - Division 1, Exceptions to the Canadian Highway Bridge Design Code CAN/CSA-S6-06 for Ontario

Designated Sources for Materials

905.05 MATERIALS

905.05.01 Steel Reinforcement

Subsection 905.05.01 of OPSS 905 is amended by the addition of the following clauses:

905.05.01.01 Stainless Steel Reinforcement

Stainless steel reinforcement shall conform to OPSS 1440 except as modified herein.

Stainless steel reinforcing bars, stainless steel spirals, and stainless steel spiral spacers shall be of a stainless steel type specified in Table 1 of this special provision.

TABLE 1: Type of Stainless Steel

COMMON OR TRADE NAME	AISI TYPE	UNS DESIGNATION
Type 316 LN	316 LN	S31653
Type 2205 Duplex	2205	S31803
Type XM - 28	XM - 28	S24100

NOTES:

1. Condition/Finish: reinforcing stainless steel bars and shapes shall be hot rolled and pickled, or hot rolled and descaled, to the required mechanical properties and dimensions.

The following Imperial and soft-converted metric bar size substitutions for Metric bar sizes shown in Table 2 will be permitted on a one-for-one basis without adjustment:

TABLE 2: Size Conversions

METRIC BAR SIZE	IMPERIAL BAR SIZE	BAR DESIGNATION NO.
15M	# 5	16
25M	# 8	25
35M	# 11	36

Other Imperial and soft-converted metric stainless steel reinforcing bar sizes may be substituted for Metric bar sizes, subject to the following:

- a. The area of substituted steel reinforcement for the concrete component per linear metre or per gross cross-section area, as applicable, shall not be less than that shown for the concrete component on the Contract Drawings; and,
- b. The spacing of substituted steel reinforcement for the concrete component shall be in accordance with CAN/CSA-S6 and the Structural Manual, Division 1.

Nominal cross-sectional areas of Metric and Imperial bar sizes used for determining substitutions shall be in accordance with ASTM A955M and CAN/CSA G30.18, respectively.

905.05.01.02 Manufacture and Fabrication of Stainless Steel Reinforcement

The manufacture of stainless steel reinforcing bars shall be by a manufacturer listed under "Mills" in the Designated Sources for Materials listing DSM # 9.65.76 "Reinforcing Steel, Stainless, Mills and Fabricators."

Fabrication of stainless steel reinforcing bars shall be by a fabricator listed under "Fabricators" in the Designated Sources for Materials listing DSM # 9.65.76 "Reinforcing Steel, Stainless, Mills and Fabricators."

905.05.05.02 Reinforcing Steel Bars

Clause 905.05.05.02 of OPSS 905 is amended by the addition of the following:

Stainless steel mechanical connectors and splice bars shall be of a type specified in Table 1 of this special provision.

905.05.06 Associated Hardware

Subsection 905.05.06 of OPSS 905 is amended by the addition of the following:

Tie wire used to tie stainless steel reinforcing bars to stainless steel reinforcing bars, reinforcing steel bars and shear studs, shall be Type 316 LN, or Type 316L, stainless steel wire, 1.2 or 1.6 mm in diameter. Tie wire used to tie stainless steel reinforcing bars to coated reinforcing steel bars shall be coated wire.

Bar chairs for supporting stainless steel reinforcing bars shall be non-metallic. Concrete chairs shall not be used to support stainless steel reinforcing bars.

905.07 CONSTRUCTION

Clause 905.07.02.01 of OPSS 905 is deleted and replaced with the following:

905.07.02.01 Handling, Storage and Protection of Stainless Steel Reinforcing Bars

The bars shall be stored clear of the ground on timbers or other suitable protective cribbing spaced to prevent sags in the bundles.

Stacks of bundles of straight bars shall have adequate blocking to prevent contact between the layers of bundles.

Stainless steel reinforcing bars shall be stored separately from reinforcing steel bars, with the bar tags maintained and clearly visible until ready for placing.

905.07.02.03 Surface Condition of Steel Reinforcement

The contents of clause 905.07.02.03 of OPSS 905 are deleted and replaced with the following:

Stainless steel reinforcing bars at the time the concrete is placed shall be free of mud, oil, other contaminants that adversely affect bonding strength, and deposits of iron and non-stainless steels.

905.07.02.06 Welding

Clause 905.07.02.06 of OPSS 905 is amended by the addition of the following:

Except for splicing of stainless spirals, welding of stainless steel reinforcing bars will not be permitted.

905.08 QUALITY ASSURANCE

905.08.01 Sampling

Subsection 905.08.01 is amended by the addition of the following clauses:

905.08.01.03 Stainless Steel Reinforcing Bar

Three 1.5 m long randomly selected samples of each bar size supplied in a lot of stainless steel reinforcing bars shall be submitted to the Contract Administrator with the mill certificates for that lot.

905.08.01.04 Delivery of Samples

The Contractor shall deliver the samples to the Ministry (Head, Concrete Section, Room 15, Building C, 1201 Wilson Avenue, Downsview, Ontario, M3M 1J8).

905.09 MEASUREMENT FOR PAYMENT

Section 905.09 of OPSS 905 is amended by the addition of the following subsection:

905.09.04 Stainless Steel Mechanical Connectors

905.09.04.01 Actual Measurement

Measurement is by the number of connectors installed. The unit of measure is each.

905.09.04.02 Plan Quantity

Measurement is by Plan Quantity as may be revised by Adjusted Plan Quantity of the number of connectors installed. The unit of measure is each.

905.10 BASIS OF PAYMENT

Subsection 905.10.01 of OPSS 905 is amended by the addition of the following:

905.10.01 Stainless Steel Reinforcing Bar - Item

Section 905.10 of OPSS 905 is further amended by the addition of the following subsection:

905.10.03 Stainless Steel Mechanical Connectors - Item

Payment at the contract price shall be full compensation for all labour, equipment and materials to do the work, including stainless steel splice bars when they are part of the connectors.