

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 03 10 00 – Concrete forming and Accessories.
- .2 Section 03 30 00 – Cast-in-place Concrete.

1.2 PRICE AND PAYMENT PROCEDURES

- .1 Measurement and Payment
 - .1 No measurement will be made under this Section.
 - .1 Include reinforcement costs in items of concrete work in Section 03 30 00 - Cast-In-Place Concrete.

1.3 REFERENCES

- .1 ASTM International
 - .1 ASTM A123/A123M, latest edition, Standard specification for zinc (Hot-Dip Galvanized) coating on Iron and Steel product.
 - .2 ASTM A497/A497M, latest edition, Standard specification for Steel welded wire reinforcement, for concrete.
 - .3 ASTM A185/A 185M, latest edition, Standard specification for steel welded wire reinforcement, deformed, for concrete.
- .2 CSA International
 - .1 CSA-A23.1/A23.2, latest edition, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
 - .2 CAN/CSA-A23.3, latest edition, Design of Concrete Structures.
 - .3 CSA-G30.18, latest edition, Carbon Steel Bars for Concrete Reinforcement.
 - .4 CAN/CSA-G164, latest edition, Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .5 CSA W186, latest edition, Welding of Reinforcing Bars in Reinforced Concrete Construction.
- .3 Reinforcing Steel Institute of Canada (RSIC)
 - .1 RSIC-latest edition, Reinforcing Steel Manual of Standard Practice.
- .4 CAN/CSA S6, latest edition, Canadian High Bridge Design Code.
- .5 Ministry of Transportation of Quebec : Standard 5101 « Armature pour les ouvrages en béton ».

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare reinforcement drawings in accordance with RSIC Manual of Standard Practice.

- .3 Shop Drawings
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec.
 - .1 Indicate placing of reinforcement and :
 - .1 Bar bending details.
 - .2 Lists.
 - .3 Quantities of reinforcement.
 - .4 Sizes, spacings, locations of reinforcement with identifying code marks to permit correct placement without reference to structural drawings.
 - .5 Indicate sizes, spacings and locations of chairs, spacers and hangers.
 - .2 Detail lap lengths and bar development lengths to CAN/CSA-A23.3, unless otherwise indicated.

1.5 QUALITY ASSURANCE

- .1 Not used.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Storage and Handling Requirements
 - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

Part 2 Products

2.1 MATERIALS

- .1 Substitute different size bars only if permitted in writing by the Departmental representative.
- .2 Reinforcing steel: billet steel, grade 400, deformed bars to CSA-G30.18, unless indicated otherwise.
- .3 Reinforcing steel: weldable low alloy steel deformed bars to CSA-G30.18.
- .4 Welded steel wire fabric: to ASTM A 185/A 185M.
 - .1 Provide in flat sheets only.
- .5 Galvanizing of non-prestressed reinforcement: to CAN/CSA-G164, minimum zinc coating 610 g/m².
- .6 Chairs, bolsters, bars supports, spacers: to CSA-A23.1/A23.2.

2.2 FABRICATION

- .1 Fabricate reinforcing steel in accordance with CSA-A23.1/A23.2 and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Canada.
- .2 Obtain the Departmental representative written approval for locations of reinforcement splices other than those shown on placing drawings.
- .3 Ship bundles of bar reinforcement clearly identified in accordance with bar bending details and lists.

2.3 SOURCE QUALITY CONTROL

- .1 Provide to the Departmental representative a certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 4 weeks prior to beginning reinforcing work.
- .2 Upon request inform the Departmental representative of proposed source of material to be supplied.

Part 3 Execution

3.1 PREPARATION

- .1 Galvanizing to include chromate treatment.
 - .1 Duration of treatment to be 1 hour per 25 mm of bar diameter.
- .2 Conduct bending tests to verify galvanized bar fragility in accordance with ASTM A 143/A 143M.

3.2 FIELD BENDING

- .1 Do not field bend or field weld reinforcement except where indicated or authorized by the Departmental representative.
- .2 When field bending is authorized, bend without heat, applying slow and steady pressure.
- .3 Replace bars, which develop cracks or splits.

3.3 PLACING REINFORCEMENT

- .1 Place reinforcing steel as indicated on placing drawings and in accordance with CSA-A23.1/A23.2.
- .2 Prior to placing concrete, obtain the Departmental representative approval of reinforcing material and placement.
- .3 Ensure cover to reinforcement is maintained during concrete pour.

3.4 FIELD TOUCH-UP

- .1 Touch up damaged and cut ends of galvanized reinforcing steel with compatible finish to provide continuous coating.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

END OF SECTION