

PART I – GENERAL**WORK SPECIFIED HEREIN**

All labor, materials, equipment and design services necessary to furnish, transport and install all steel joists and joist girders as indicated or specified.

This Specification is based on the design and fabrication of joists and joist girders by XYZ Joist Company.

- Contractor shall purchase all joists and joist girders under a National Account agreement with XYZ Joist Company
- General Contractor is to use standard purchase agreement as shown in Section 01010.

SUBSTITUTIONS

No substitutions.

SUBMITTALS

- Submit five white prints of the shop drawings in accordance with Section 01340 for all work under this Section. Shop drawings shall clearly show all chord and web member sizes, panel point spacing, bearing plate sizes and details, extended end sizes and details and bridging angle connections and length and size of weld at all panel points. Show type of paint and all accessories and details as may be required for proper installation of joists and joist girders. Include the mark, number, type, location and spacing of all joists and bridging.
- Submit five prints of the design calculations for steel joists bearing the seal and signature of a Professional Engineer licensed in the province of Ontario. Total load deflection shall not exceed 1/240th of the span and live load deflection 1/360th of the span. Centre reaction point of joists on centroid of supporting beam or wall. Joist shop drawings shall carry the seal of a Professional Engineer licensed in the province of Ontario who shall be responsible for design, fabrication and erection of all joists.

PART II – PRODUCTS**MATERIALS**

- Steel for joists and joist girders shall comply with CSA-G40.20/G.40.21M & CSA-S136.
- Unless otherwise shown or specified, structural steel work shall conform to the following standards:
 - CSA Standards CAN/CSA-S16-01, CAN/CSA-S136-01, W47.1-03, W48-01, W55.3-1965(R2003), W59-03 & CAN/CSA G40.20-04.
 - Work shall be carried out by a member of the Canadian Institute of Steel Construction.
 - Welding shall be performed by firms fully approved by the Canadian Welding Bureau under the requirements of CSA Standard W47.1-03, certification of companies for fusion welding.

- Structural steel shall conform to CSA Standard G40.20/G40.21M, latest edition.
 - (a) Channels, plates, angles, and rolled shapes grade M350W.
 - (b) HSS shall have minimum yield of 350 MPa (class H).
- Shop paint shall comply with CISC/CPMA 1-73a specifications except asphalt type paint will not be permitted. Colour to be gray.

DESIGN

- Steel joists and joist girders shall be designed by the manufacturer. The manufacturer's engineer shall be responsible for the design, adequacy and safety of all steel joists and joist girders. The design shall be in accordance with CAN/CSA-S16.1.
- Joists/Joist Girders: See Drawings for Design Information.

FABRICATION

- Steel joists and joist girders shall be fabricated in accordance with SJI Specifications, except as otherwise indicated.
- Joists
 - Provide extended ends, special depth ends, etc. where indicated on the drawings and as job conditions require.
 - Camber all steel joists in accordance with SJI specifications.
- Joist Girders
 - Provide strutted ends of the bottom chord of sufficient strength and rigidity to restrain the lateral movement of the bottom chord.
 - Camber all steel joist girders in accordance with SJI specifications.
- Shop paint all joists and joist girders. Remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories before application of shop paint in accordance with SSPC SP-2, SP-3, or SP-7. Remove oil, grease, and similar contaminants in accordance with SSPC SP-1. Apply shop coat by spray, dipping or other method to provide a continuous dry paint film not less than 0.75 mil thick.

PART III – EXECUTION**APPLICATION, HANDLING AND ERECTION**

- Steel joists and joist girders shall be erected in strict accordance with the "Standard Specifications for Open-Web Steel Joists and Joist Girders".
- The contractor shall provide means for the adequate distribution of all loads during the construction period so that the carrying capacity of any joists or joist girders is not exceeded.
- No other loads shall be placed on the joist girders until the steel joists bearing on the girder are in place and attached thereto.

- All bridging and bridging anchors shall be placed and joist ends fixed prior to the application of any loads.
- Repair or replace all damaged joists or joist girders.
- After installation, paint all field bolt heads and nuts, and abraded or rusty surfaces on joists and joist girders using the same paint as used for shop coat.
- Install bridging so that it will not interfere with mechanical, electrical or other installations.

END OF SECTION