

**Part 1            General**

**1.1            RELATED SECTIONS**

- .1      Section 01 33 00 - Submittal Procedures.
- .2      Section 01 74 19 - Construction/Demolition Waste Management and Disposal.
- .3      Section 05 21 00 - Steel Joist Framing.

**1.2            REFERENCES**

- .1      American Society for Testing and Materials International, (ASTM)
  - .1      ASTM A653/A653M-10, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2      Canadian General Standards Board (CGSB)
  - .1      CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
- .3      Canadian Standards Association (CSA International)
  - .1      CAN/CSA-S16.09, Limit States Design of Steel Structures.
  - .2      CSA-S136-07, Cold Formed Steel Structural Members.
  - .3      CSA W47.1-09, Certification of Companies for Fusion Welding of Steel Structures.
  - .4      CSA W55.3-08, Resistance Welding Qualification Code for Fabricators of Structural Members Used in Buildings.
  - .5      CSA W59-03 (R2008), Welded Steel Construction, (Metal Arc Welding).
- .4      Canadian Sheet Steel Building Institute (CSSBI)
  - .1      CSSBI 10M-08, Standard for Steel Roof Deck.

**1.3            DESIGN REQUIREMENTS**

- .1      Design steel deck using limit states design in accordance with CSA S136 and CSSBI 10M.
- .2      Steel deck and connections to steel framing to carry dead, live and other loads including lateral loads, diaphragm action, and uplift as indicated.
- .3      Deflection under specified live load not to exceed 1/240 of span, except that when gypsum board ceilings are hung directly from deck, live load deflection not to exceed 1/360 of span.

**1.4            SHOP DRAWINGS**

- .1      Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.

- .2 Submit drawings stamped and signed by qualified professional engineer registered or licensed in the Province of Alberta, Canada.
- .3 Submit design calculations if requested by Departmental Representative.
- .4 Indicate deck plan, profile, dimensions, base steel thickness, metallic coating designation, connections to supports and spacings, projections, openings, reinforcement details and accessories.

## **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 19 - Construction/Demolition Waste Management and Disposal.
- .2 Divert unused metal from landfill to metal recycling facility.
- .3 Dispose of unused paint material and caulking in onsite collection bins.
- .4 Do not dispose of unused paint material into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Closures: in accordance with manufacturer's recommendations.
- .2 Cover plates, cell closures and flashings: steel sheet with minimum base steel thickness of 0.76 mm. Metallic coating same as deck material.
- .3 Primer: zinc rich, ready mix to CAN/CGSB-1.181.
- .4 Caulking: to Section 07 92 10 Joint Sealing.

### **2.2 TYPES OF DECKING**

- .1 Steel roof deck: .76 mm minimum base steel thickness, 38 mm maximum deep profile, interlocking side laps.

## **Part 3 Execution**

### **3.1 GENERAL**

- .1 Structural steel work: in accordance with CAN/CSA-S136 and CSSBI 10M.
- .2 Welding: in accordance with CSA W59, except where specified otherwise.
- .3 Companies to be certified under Division 1 or 2.1 of CSA W47.1 for fusion welding of steel and/or CSA W55.3 for resistance welding.

### **3.2 ERECTION**

- .1 Erect steel deck as indicated and in accordance with CSA S136 and CSSBI 10M and in accordance with reviewed erection drawings.
- .2 Permission of the Departmental Representative is required prior to field cutting or altering of deck or hanging ducts, pipes, mechanical equipment, etc. from deck.
- .3 Install decking according to design sheet widths and depths. Correct sheet spread during installation. Lap deck minimum 50 mm at ends of sheets.

### **3.3 CLOSURES**

- .1 Install closures in accordance with approved details.
- .2 Attach metal cell closures at locations required to contain poured concrete, roof boundaries, and around openings in deck.

### **3.4 OPENINGS AND AREAS OF CONCENTRATED LOADS**

- .1 No reinforcement required for openings cut in deck which are smaller than 150 mm square.
- .2 Frame deck openings with any one dimension between 150 to 300 mm with L50x50x6 perpendicular to flutes, welded to minimum of two flutes each side of opening.
- .3 For deck openings with any one dimension greater than 300 mm and for areas of concentrated load, reinforce in accordance with structural framing details, except as otherwise indicated.

### **3.5 CONNECTIONS**

- .1 Install connections in accordance with CSSBI recommendations as indicated.
- .2 Unless shown otherwise, button clinch sidelaps of adjacent sections at not greater than 300 mm on centre and at each end of units, 25 mm clear of the lip ends.
- .3 Connect steel deck to supporting member by 20 mm diameter plug welds at 300 mm on centre unless shown otherwise. End of sheets to be welded every flute.
- .4 Make connection welds by burning through deck with welding electrode and follow by puddling in the burned hole.
- .5 Weld steel decking side sections running parallel to a framing or supporting member with 20 mm diameter plug welds at not greater than 600 mm on centre with a weld at each end of the sections, 25 mm clear of the section end.

**END OF SECTION**