

PART 1 - GENERAL

1.1 REFERENCES

- .1 ASTM International
    - .1 ASTM A 653/A 653M-2015(R2016), Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
    - .2 ASTM A 792/A 792M-10(R2015), Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
  - .2 Canada Green Building Council (CaGBC)
    - .1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
  - .3 Canadian General Standards Board (CGSB)
    - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
  - .4 CSA International
    - .1 CSA C22.2 No.79-16, Cellular Metal and Cellular Concrete Floor Raceways and Fittings.
    - .2 CSA S16-14, Design of Steel Structures.
    - .3 CSA S136-12, North American Specification for the Design of Cold Formed Steel Structural Members.
    - .4 CSA W47.1-09(R2014), Certification of Companies for Fusion Welding of Steel Structures.
    - .5 CSA W55.3-08, Certification of Companies for Resistance Welding of Steel and Aluminum.
    - .6 CSA W59-13, Welded Steel Construction, (Metal Arc Welding).
  - .5 Canadian Sheet Steel Building Institute (CSSBI)
    - .1 CSSBI 10M-08, Standard for Steel Roof Deck.
    - .2 CSSBI 12M-08, Standard for Composite Steel Deck.
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1.2 ACTION AND  
INFORMATIONAL  
SUBMITTALS

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- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Product Data:
    - .1 Submit manufacturer's instructions, printed product literature and data sheets for steel decking and include product characteristics, performance criteria, physical size, finish and limitations.
  - .3 Shop Drawings:
    - .1 Submit drawings stamped and signed by professional engineer registered or licensed in the Province of Newfoundland and Labrador.
    - .2 Submit design calculations if requested by Departmental Representative.
    - .3 Indicate deck plan, profile, dimensions, base steel thickness, metallic coating designation, connections to supports and spacings, projections, openings, reinforcement details and accessories.
    - .4 Indicate details of temporary shoring of steel deck, such as location, time and duration of placement and removal of shoring for concrete fill decks.
  - .4 Sustainable Design Submittals:
    - .1 LEED Canada-NC Version 1.0 Submittals: in accordance with Section 01 35 21 - LEED Requirements.
    - .2 Construction Waste Management:
      - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
      - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.
    - .3 Recycled Content:
      - .1 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
      - .4 Regional Materials: submit evidence that project incorporates required percentage 20 % of regional materials and products, showing
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PART 2 - PRODUCTS

- 2.1 DESIGN CRITERIA
- .1 Design steel deck to CSA S136 and CSSBI 10M and CSSBI 12M.
  - .2 Steel deck and connections to steel framing to carry dead, live and other loads including lateral loads, diaphragm action, composite deck action, and uplift as indicated.
  - .3 Deflection under specified live load not to exceed:
    - .1 1/300 of Span for Roofs.
    - .2 1/360 of Span for Floors.
- 2.2 MATERIALS
- .1 Zinc-iron Alloy (ZF) coated steel sheet: to ASTM A 653/A 653M structural quality Grade 230 or 255, with ZF75 coating, for interior surfaces not exposed to weather, minimum base steel thickness as indicated on the drawings.
  - .2 Decks to be painted: zinc-iron alloy coated decks suitable for finish painting.
  - .3 Closures: as indicated in accordance with manufacturer's recommendations.
  - .4 Cover plates, cell closures and flashings: steel sheet with minimum base steel thickness of 0.76 mm minimum. Metallic coating same as deck material.
  - .5 Primer: zinc rich, ready mix to CAN/CGSB-1.181.
    - .1 VOC limit 250 or 350 g/L maximum to GS-11 SCAQMD Rule 1113.
  - .6 Deck Fasteners: HILTI X-HSN24 and #10 Screws for side laps.
  - .7 Caulking: to Section 07 92 00 - Joint Sealants.
    - .1 Sealants: VOC limit 250 g/L maximum to SCAQMD Rule 1168.
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- 2.3 TYPES OF DECKING
- .1 Steel roof deck: non-cellular. Minimum base steel thickness and depth as indicated on the drawings.
  - .2 Composite steel deck: non-cellular. Upright embossed fluted profile, interlocking side lap. Minimum base steel thickness and depth as indicated on the drawings.

PART 3 - EXECUTION

- 3.1 EXAMINATION
- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for steel decking installation in accordance with manufacturer's written instructions.
    - .1 Visually inspect substrate in presence of Departmental Representative.
    - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
    - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

- 3.2 INSTALLATION
- .1 Structural steel work: in accordance with CSA S136, CSSBI 10M and CSSBI 12M.

- 3.3 ERECTION
- .1 Erect steel deck as indicated and in accordance with CSA S136, CSSBI 10M, CSSBI 12M and in accordance with reviewed erection drawings.
  - .2 Lap ends: to 50 mm minimum.
  - .3 Immediately after deck is permanently secured in place, touch up metallic coated top surface with compatible primer where damaged.
  - .4 Prior to concrete placement, steel deck to be free of soil, debris, standing water, loose mil scale and other foreign matter.

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- 3.3 ERECTION  
(Cont'd)
- .5 Temporary shoring, if required, to be designed to support construction loads, wet concrete and other construction equipment. Do not remove temporary shoring until concrete attains 75% of its specified 28 day compression strength.
  - .6 Place and support reinforcing steel as indicated.
- 3.4 CLOSURES
- .1 Install closures in accordance with approved details.
- 3.5 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 as recommended by manufacturer, except as otherwise indicated.
  - .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.
- 3.6 CONNECTIONS
- .1 Install connections in accordance with CSSBI recommendations as indicated.
- 3.7 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.
  - .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition
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- 3.7 CLEANING                    .3    Waste Management: (Cont'd)  
(Cont'd)                            Waste Management and Disposal and Section  
   01 35 21 - LEED Requirements.  
   .1    Remove recycling containers and bins  
   from site and dispose of materials at  
   appropriate facility.
- 3.8 PROTECTION                .1    Protect installed products and components  
   from damage during construction.
- .2    Repair damage to adjacent materials caused by  
   steel decking installation.