

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
- .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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- 1.2 ACTION AND INFORMATIONAL SUBMITTALS (Cont'd)
- .4 Sustainable Design Submittals:(Cont'd)
- .4 Regional Materials:(Cont'd)
their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
- .5 Low-Emitting Materials:
- .1 Submit listing of adhesives and sealants and paints and coatings used in building, comply with VOC and chemical component limits or restrictions requirements.
- 1.3 DELIVERY, STORAGE AND HANDLING
- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
- .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Store and protect decking from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section and in accordance with Section 01 35 21 - LEED Requirements.
- .5 Packaging Waste Management: remove for reuse or return of pallets, crates, padding, banding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
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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.