

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.

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

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.

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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| <u>2.3 TYPES OF
DECKING</u> | <ul style="list-style-type: none">.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. |
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PART 3 - EXECUTION

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| <u>3.1 EXAMINATION</u> | <ul style="list-style-type: none">.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.<ul style="list-style-type: none">.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. |
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| <u>3.2 INSTALLATION</u> | <ul style="list-style-type: none">.1 Structural steel work: in accordance with CSA S136, CSSBI 10M and CSSBI 12M. |
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| <u>3.3 ERECTION</u> | <ul style="list-style-type: none">.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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| <u>3.3 ERECTION
(Cont'd)</u> | <p>.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.</p> <p>.6 Place and support reinforcing steel as indicated.</p> |
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| <u>3.4 CLOSURES</u> | <p>.1 Install closures in accordance with approved details.</p> |
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| <u>3.5 OPENINGS AND
AREAS OF
CONCENTRATED LOADS</u> | <p>.1 No reinforcement required for openings cut in deck which are smaller than 150 mm square.</p> <p>.2 Frame deck openings with any one dimension between 150 to 300 mm as recommended by manufacturer, except as otherwise indicated.</p> <p>.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.</p> |
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| <u>3.6 CONNECTIONS</u> | <p>.1 Install connections in accordance with CSSBI recommendations as indicated.</p> |
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| <u>3.7 CLEANING</u> | <p>.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.</p> <p>.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.</p> <p>.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition</p> |
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- 3.7 CLEANING
(Cont'd)
- .3 Waste Management: (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.