



CANADIAN
Sheet Steel Building
INSTITUTE

**standard
specification
for**

**steel roof
deck**

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STEEL ROOF DECK, GUIDE SPECIFICATION

Crestview Plaza, South Service Road, Port Credit, Ontario

*This Standard Specification is Issued as a Guide in the
Preparation of Contract Documents*

1 GENERAL CONDITIONS

The General Conditions shall be and are hereby made a part of this division.

2 SCOPE

(a) **Work Included**—This contractor shall:

- (i) Furnish all labour, materials and equipment necessary to fabricate, hoist into position, and erect the steel roof deck where shown or called for on the tender drawings;
- (ii) Supply and install, where necessary, to complete the work, and as shown or called for on the tender drawings, such accessories as cell closures, cover plates and steel cant strips; and,
- (iii) Cut and reinforce holes and openings up to 18-in. diameter or square, and the cutting only of holes and openings larger than 18-in. diameter or square as shown with tender drawings. Location of these openings shall be marked by the General Contractor or by the trade involved prior to completion of the erection of the deck.

(b) **Work Excluded**

- (i) Reinforcing of openings larger than 18-in. diameter or square.

(ii) Field painting of the steel roof deck.

(iii) Mechanical clips or adhesive for securing insulation to steel roof deck.

(iv) Cutting and drilling of holes for the attachment of suspended ceiling hangers, or for any other purpose of attachment of the work of other trades.

(v) Bearing plates, shelf angles, and other structural steel required to support the deck.

3 MATERIALS

The steel roof deck shall be formed of zinc coated (galvanized) steel to ASTM Specification A446-64T, "Specification for Zinc Coated (Galvanized) Steel Sheets of Structural Quality, Coils, and Cut Lengths", Grade A with a steel core thickness of (See Table I) and a Zinc Coating Class of ounces per square foot total both sides (See Table II).

4 DESIGN

(a) **General**

All steel roof deck shall be as manufactured by, or approved equal, and shall comply with the requirements of this Specification in all respects.

(b) Sectional Properties

The sectional properties of the steel roof deck shall be determined strictly in accordance with all requirements of the National Building Code of Canada and CSA Standard S 136-1963 for "Design of Light Gauge Steel Structural Members".

(c) Design Stress

The steel roof deck shall safely carry all specified dead and live loadings without exceeding a maximum working stress of 20,000 psi.

(d) Deflection Limitations

The deflection under live load only shall be not more than 1/240th of the span except that when plaster ceilings are hung directly from the steel deck, this live load deflection shall not exceed 1/360th of the span.

(e) Continuity

Wherever structural steel layout permits, and subject to reasonable limitations for handling, the steel roof deck shall be designed and fabricated to span continuously over at least three spans.

5 SHOP DRAWINGS

This Contractor shall submit copies of shop drawings for approval before proceeding with fabrication.

6 EXAMINATION

Before commencing erection, the structure will be carefully examined and if any defects are

found, the general contractor will be notified at once, and work will not commence until corrective measures are taken.

7 STORAGE OF MATERIALS ON SITE

Steel roof deck shall normally be delivered to the jobsite as required for erection, but if site storage becomes necessary, the bundles of deck shall be stacked on wood blocking clear of the ground and tilted slightly to insure that no water lies on the material. Area for storage shall be as close to the building as is practical. Protection against damage shall be provided by the General Contractor.

8 ERECTION

All erection work shall be carried out by the manufacturer's trained erection staff and in accordance with the manufacturer's specifications unless specifically authorized otherwise by the Architect. The deck shall be welded to the supporting steel by means of 3/4" diameter arc welds at 12" maximum centres at all bearing points. Endlaps must be not less than 2" and must be formed over supports. Between supports, the sidelapping deck ribs shall be mechanically fastened or welded together at not more than 36" centres. Immediately the deck is welded in place, the steel deck surface shall be inspected and all areas where zinc coating has been burned by welding shall be covered by a suitable paint, applied according to the paint manufacturer's instruction. All openings indicated on the approved drawings shall be cut and reinforced where necessary.

NOTE:

- (i) For openings up to 6" diameter or square, no reinforcement is necessary provided that not more than two vertical webs are removed.

(ii) For openings 6" to 18" diameter or square, provide not less than 2" x 2" x 1/4" angle reinforcing to frame across the hole in a direction perpendicular to the flutes and be welded to at least two flutes on either side of the hole.

(iii) If additional openings are required they shall be cut and reinforced under the work of this division, but the cost of such extra work shall be charged to the division requiring the openings.

9 CLEAN UP

Remove all debris of this trade and leave work ready for other trades.

NOTE TO SPECIFICATION WRITER

(i) It is recommended that a reference be included in the roofing and sheet metal trade specification requiring that trade to plank over the deck before hoisting roofing materials in order to avoid denting the pans of the steel deck.

(ii) For installations where the deck is to be left exposed to the weather, without cover, or where the use of welding apparatus is hazardous the roof deck should be fastened to the supporting steel as outlined in clause 8, but #12 self tapping screws be used in lieu of 3/4" arc welds.

TABLE I

| Manufacturer's Standard Gauge Number | Nominal Thickness |
|--------------------------------------|-------------------|
| 12..... | 0.1046 |
| 13..... | 0.0897 |
| 14..... | 0.0747 |
| 15..... | 0.0673 |
| 16..... | 0.0598 |
| 17..... | 0.0538 |
| 18..... | 0.0478 |
| 19..... | 0.0418 |
| 20..... | 0.0359 |
| 21..... | 0.0329 |
| 22..... | 0.0299 |
| 23..... | 0.0269 |
| 24..... | 0.0239 |
| 25..... | 0.0209 |
| 26..... | 0.0179 |

TABLE II

Thickness to be Deducted from Coated Material to Determine Thickness of Base Metal

| Coating Class, oz. per sq. ft. | Thickness to be Deducted from Coated Material, in. |
|---|--|
| 2.75..... | 0.0041 |
| 2.50..... | 0.0037 |
| 2.25..... | 0.0033 |
| 2.00..... | 0.0030 |
| 1.75..... | 0.0026 |
| 1.50..... | 0.0022 |
| 1.25 commercial..... | 0.0019 |
| Wiped coated (Colourbond or Satincoat—In Canada only) | 0.0005 |