



AMERICAN NATIONAL STANDARDS INSTITUTE/ STEEL DECK INSTITUTE  
RD1.0 - 2006 Standard for  
**Steel Roof Deck**



## 1. General

### 1.1 Scope:

A. This Specification for Steel Roof Deck shall govern the materials, design, and erection of cold formed steel deck used for the support of roofing materials, design live loads and SDI construction loads.

B. Commentary shall not be considered part of the mandatory document.

### 1.2 Reference Codes, Standards and Documents:

A. Codes and Standards: For purposes of this Standard, comply with applicable provisions of the following Codes and Standards:

1. American Iron and Steel Institute (AISI) Standard - *North American Specification for the Design of Cold-Formed Steel Structural Members*, 2001 Edition with Supplement 2004
2. American Welding Society - ANSI/AWS D1.3 Structural Welding Code/Sheet Steel - 98 Structural Welding Code - Sheet Steel
3. American Society for Testing and Materials (ASTM) A653 (A653M)-06, A924 (A924M)-06, A1008 (A1008M)-06
4. American Society of Civil Engineering (ASCE) – SEI/ASCE7-05
5. Underwriters Laboratories (UL) Fire Resistance Directory - <http://www.ul.com/database> 2006

B. Reference Documents: Refer to the following documents:

1. SDI Manual of Construction with Steel Deck - MOC2-2006
2. SDI Standard Practice Details - SPD2-2001
3. SDI Position Statement - Field Painting of Steel Deck-2004
4. SDI Diaphragm Design Manual - DDM03-2004

## 2. Products

### 2.1 Material:

- A. Sheet steel for galvanized deck shall conform to ASTM A653 (A653M) Structural Quality, with a minimum yield strength of 33 ksi (230 MPa).
- B. Sheet steel for cold rolled plus painted deck shall conform to ASTM A1008 (A1008M) with a minimum yield strength of 33 ksi (230 MPa). Other structural sheet steels or high strength low alloy steels are acceptable, and shall be selected from the *North American Specification for the Design of Cold-Formed Steel Structural Members*.
- C. Sheet steel for accessories shall conform to ASTM A653 (A653M) Structural Quality for structural accessories, ASTM A653 (A653M) Commercial Quality for non-structural accessories, or ASTM A1008 (A1008M) for either structural or non-structural accessories. Other structural sheet steels or high strength low alloy steels are acceptable, and shall be selected from the *North American Specification for the Design of Cold-Formed Steel Structural Members*.

D. The deck type (profile) and thickness (gage) shall be as shown on the plans.

### 2.2 Tolerance:

A. Uncoated thickness shall not be less than 95% of the design thickness as listed in Table 2.2.1:

Table 2.2.1

| Gage No. | Design Thickness |      | Minimum Thickness |      |
|----------|------------------|------|-------------------|------|
|          | in.              | mm.  | in.               | mm.  |
| 22       | 0.0295           | 0.75 | 0.028             | 0.71 |
| 21       | 0.0329           | 0.84 | 0.031             | 0.79 |
| 20       | 0.0358           | 0.91 | 0.034             | 0.86 |
| 19       | 0.0418           | 1.06 | 0.040             | 1.01 |
| 18       | 0.0474           | 1.20 | 0.045             | 1.14 |
| 17       | 0.0538           | 1.37 | 0.051             | 1.30 |
| 16       | 0.0598           | 1.52 | 0.057             | 1.44 |

- B. Panel length shall be within plus or minus 1/2 inch (12 mm) of specified length.
- C. Panel cover width shall be no greater than minus 3/8 inch (10 mm), plus 3/4 inch (20 mm).
- D. Panel camber and/or sweep shall be no greater than 1/4 inch in 10 foot length (6 mm in 3 m).
- E. Panel end out of square shall not be greater than 1/8 inch per foot of panel width (10 mm per m).

### 2.3 Finish:

- A. Galvanizing shall conform to ASTM A653 (A653M).
- B. Painted with a shop coat of primer shall be applied to steel sheet conforming to ASTM A1008 (A1008M).
- C. The finish of the steel roof deck shall be suitable for the environment of the structure.