STEEL DECK INSTITUTE

SDI COSP - 2014

Code of Standard Practice

(Approved by Steel Deck Institute on May 6, 2014)

Section 1 General

1.1 Scope: In the absence of specific instructions to the contrary in the Contract Documents or the Sales Contract, the trade practices that are defined in the Steel Deck Institute Code of Standard Practice (herein referred to as the Code) shall govern the sale, manufacture and installation of steel deck. This Code shall govern where building codes, designer's plans and specifications or contracts are incomplete or unclear. There shall be no conflict between this Code and any legal building regulation; it shall only supplement and amplify such laws. Unless specific provisions to the contrary are made in a contract for the purchase of steel deck, this code is understood to govern the interpretation of such a contract.

User Note: The practices defined in this Code are the commonly accepted standards of custom and usage for steel deck, which generally represent the most efficient approach. This Code is not intended to define a professional standard of care for the designer, change the duties and responsibilities of the owner, owner's representative for construction, or designer, from those set forth in the contract documents, or assign to the owner or designer any duty or authority to undertake responsibility inconsistent with the provisions of the contract documents.

User Note: The User Notes provide brief clarification of the requirements of this Code. This Code is supplemented by a Commentary, which should be referred to for additional information.

1.2 Reference Specifications, Codes, and Standards: The following documents or portions thereof are referenced in this standard and shall be considered part of the requirements of this Code, unless otherwise required.

1.2.1 Steel Deck Institute (SDI)

A. SDI C-2011, Standard for Composite Steel Floor Deck-Slabs
B. SDI NC-2010, Standard for Non-Composite Steel Floor Deck
C. SDI RD-2010, Standard for Steel Roof Deck

1.3 Definitions:

Accessories: Cold-formed steel components of the steel deck system other than the steel deck, which may include, but are not limited to; gage metal pour stops, girder fillers, ridge and valley plates, and sump plates.

Buyer: The entity that purchases the steel deck from the seller.

Contract Documents: The documents that define the responsibilities of the parties that are involved in bidding, manufacturing, and installing steel deck. These documents normally include the design drawings, specifications and the sales contract.

Design Drawings: The graphic and pictorial portions of the contract documents showing the design, location and dimensions of the work. These documents generally include plans, elevations, sections, details, schedules, diagrams and notes.

Deck: Roof deck, non-composite floor deck, and composite floor deck, cold-formed from sheet steel.

Designer: The licensed professional responsible for the content of the contract documents from which the project, including the steel deck, is to be built.

Installation Drawings: Field-installation or deck-placement drawings that are prepared to show the location and attachment of the deck and accessories.

Installer: The entity engaged in the installation of the steel deck and accessories.

Manufacturer: The entity engaged in the production (manufacture) of steel deck from sheet steel.

Owner: The entity that is identified as such in the Contract Documents.

Owner's Representative for Construction (ORC): The Owner or the entity that is responsible to the Owner for the overall construction of the project, including its planning, quality, and completion.

User Note: This is usually the general contractor, the construction manager, or similar authority at the job site.

Sales Contract: The agreement by which the seller sells the deck and accessories to the buyer.

Seller: The entity engaged in the sale of steel deck to the buyer.

User Note: The seller in most instances is also the manufacturer, but it may be another entity, such as a broker.

Specifications: The portion of the contract documents that consists of the written requirements for materials, standards and workmanship.

1.4 Design:

1.4.1 Controlling Standards: In the absence of ordinances, specifications, or contracts to the contrary, design shall be in accordance with the current Standards of the Steel Deck Institute listed in Section 1.2.1. Where other specifications or standards are specified by the contract documents, the requirements set forth in the current Standards of the Steel Deck Institute shall be followed to the extent that they do not conflict with other requirements of the contract documents.

1.4.2 Responsibility for Design: The seller and manufacturer shall assume no responsibility other than to furnish materials as specified.

1.4.3 Responsibility for Shear Connectors: The design, layout, numbering, and sizing of shear connectors are not the responsibility of the seller or manufacturer.

1.4.4 Responsibility for Fire Rating Design: The designer is responsible for determining fire-rating requirements and for selecting floor and roof systems that comply with these requirements.

1.4.5 Responsibility for Temporary Shoring Design: Neither the seller, the manufacturer, nor the installer shall be responsible for the design of any temporary shoring required for deck erection or concrete placement.

Section 2 Materials

2.1 Steel: Steel shall be provided in accordance with the applicable SDI Standard.

2.1.1 Lubrication: Steel deck panels shall be shipped to the jobsite without visible liquid lubricants, or for those shipped with such lubricants, shall have warning labels indicating that a slipping hazard may be present and instructing those who may walk on the surface to wear appropriate fall protection.

2.1.2. Thickness: It shall be permitted to specify deck base steel thickness either by dimensional thickness, or by gage when the manufacturer has defined the relationship of base steel thickness to gage.

2.2 Paint: When required by the contract documents, a shop coat of primer shall be provided by the manufacturer. The primer shall be permitted to be shop applied or provided as prepainted steel coils, at the manufacturer's option.

Section 3 Quality and Scope of Responsibility

3.1 Product Quality: The following shall not be cause for rejection of steel deck or accessories:

3.1.1 Oil canning

3.1.2 Denting or crushing due to shipping, storage, or installation, that does not adversely affect the structural performance of the deck or accessory

3.1.3 Damage to primer or other surface coating that can be repaired in accordance with Section 3.5.

3.2 Corrosive Materials in Contact with Steel Deck: Steel deck shall be protected against contact with materials that cause, or can be shown to cause, corrosion or other deterioration of the deck and accessories. Neither the seller, the manufacturer, nor the installer shall be responsible for compliance with this requirement.

3.3 Acoustical Elements:

When open rib fluted type acoustical deck is provided, sound absorbing acoustical elements (manufacturers standard type) shall be provided by the seller unless specified otherwise by the buyer and shall be installed in the field by the ORC. Acoustical elements shall be stored at the jobsite by the ORC in such a manner as to ensure adequate protection prior to installation. If acoustical elements become wet, it shall be allowed to thoroughly dry without being compressed before installation. Wet elements shall not be installed in the deck and overlying roofing materials shall not be installed over wet acoustical elements.

When closed rib cellular type acoustical deck is provided, sound absorbing acoustical elements (manufacturers standard type) shall be provided by the seller and shall be factory installed by the manufacturer unless specified otherwise by the buyer. Cellular deck units with factory installed acoustical elements shall be stored at the jobsite by the ORC in such a manner as to ensure adequate protection of the deck and the acoustical elements prior to installation. Under normal weather conditions, it is not necessary to cover the ends of cellular deck units with factory installed acoustical elements if installation of overlying roofing materials is to be completed within a short period of time after installation of these units.

Acoustical elements that have been contaminated with any substance other than clean water shall be replaced. The cost of replacement shall not be the responsibility of the seller or manufacturer.

User Note: The manufacturers standard acoustical elements are usually fiberglass insulation.

3.4 Fireproofing: Neither the seller, manufacturer, nor installer shall be responsible for ensuring the bonding of fireproofing materials.

3.5 Field Painting: Neither the seller, the manufacturer, nor the installer shall be responsible for field painting, either as a full finish coat or as “touch-up.” Field painting is the sole responsibility of the ORC to assure that the surface is properly prepared and that the coating is properly applied. Neither the seller, the manufacturer nor the installer will accept responsibility for adhesion or compatibility of the field coating or for other causes leading to unsatisfactory painting results.

3.6 Repair of Deck Finish at Welds: Unless otherwise required by the contract documents, where deck welds are not directly exposed to a corrosive environment, it shall not be required to repair painted or galvanized finishes. Neither the seller, the manufacturer, nor the installer will accept responsibility for repair of deck finish at weld areas.

Section 4 Estimating and Bidding

4.1 Drawings and Specifications for Bidding or Quotation: Drawings and specifications provided for bidding or quotation shall clearly show details and shall be complete as to the extent of deck and accessories to be furnished by the seller. All dimensions necessary to perform an accurate estimate of the required quantity of materials shall be provided on the structural drawings. Accurately scaled drawings shall be permitted to be provided as an alternate to fully dimensioned ones. Acceptance of an estimate based on scaled drawings shall be the responsibility of the buyer. Incomplete drawings and specifications shall be bid on the basis that the seller shall provide material as shown in those drawings and specifications.

4.1.1 All deck which is exposed in the finished structure and for which the aesthetics of the erected product are an important consideration, shall be clearly indicated in the contract drawings. If not otherwise indicated it shall be assumed that aesthetics are not a consideration and the bid or quotation will be submitted using this assumption.

4.1.2 All deck to which sprayed fireproofing is to be field applied shall be clearly indicated in the contract drawings. Unless otherwise indicated, it shall be assumed that sprayed fireproofing is not being applied to the deck and the bid or quotation will be submitted using this assumption.

4.2 Base Bids: Unless otherwise specified, base bids shall be based on the following scopes:

4.2.1 Roof Deck: Base bids for roof deck shall include roof deck as shown in plan on the structural drawings. Base bid shall also include ridge, hip and valley plates which are not part of the vertical load resisting system, and sump pans per architectural drawings and specifications. No other deck or accessories shall be included unless specified.

4.2.2 Composite Floor Deck and Non-Composite Floor Deck: Base bids shall include deck as shown in plan on the structural drawings and only those accessories specifically designated on the structural drawings and called for in the appropriate division of the specifications. No other deck or accessories shall be included unless specified.

4.2.3 Special Details: Any material required to support the steel deck shall not be included. The design of deck supports shall be the responsibility of the designer. Deck shall be furnished in sheet lengths of 6 feet (2.0 m) or greater. Any deck sheets requiring lengths less than 6 feet (2.0 m) shall be field cut by others, unless specifically noted within the scope.

4.3 Excluded Materials: Unless otherwise specified, the following materials are excluded from the bid.

4.3.1 Sheet Metal Work: All closures, flashing, and other similar items, used in deck construction, unless otherwise specified, shall be detailed and furnished by others.

4.3.2 Shear Connectors: Shear connectors and related placement plans and details are not the responsibility of the seller or manufacturer.

4.3.3 Mechanical Fasteners: Mechanical fasteners, such as screws or power-actuated fasteners, and mechanical fastener installation tools, are not the responsibility of the seller or manufacturer, unless specifically noted in the sales contract.

4.3.4 Welding Materials: Consumables used for field welding of deck or accessories are not the responsibility of the seller or manufacturer.

4.3.5 Support Materials: Deck supporting members, including but not limited to ridges, hips, valleys, span direction changes and floor deck shoring.

4.3.6 Touch-up Paint: Paint used in field to touch-up painted or galvanized deck surfaces.

Section 5 Drawings and Specifications:

5.1 Discrepancies in Contract Documents

When discrepancies exist between the design drawings and specifications, the design drawings shall govern. When discrepancies exist between scale dimensions in the design drawings and the figures written in them, the figures shall govern. When discrepancies exist between the structural design drawings and the architectural, electrical or mechanical design drawings or design drawings for other trades, the structural design drawings shall govern. When a discrepancy is discovered in the contract documents in the course of the seller's work, the seller shall promptly notify the buyer so that the designer can resolve the discrepancy. Such resolution shall be timely so as not to delay neither the seller's, manufacturer's, nor installer's work.

User Note: While it is the seller's and manufacturer's responsibility to report any discrepancies that are discovered in the contract documents, it is not the seller's nor manufacturer's responsibility to discover discrepancies. The quality of the contract documents is the responsibility of the entities that produce those documents.

5.2 Installation Drawings Prepared by Seller

5.2.1 Furnished by the Buyer: The buyer shall furnish to the seller complete architectural and structural drawings and specifications prepared by the designer, all correctly dimensioned.

5.2.2 Furnished by the Seller: The seller shall furnish to the buyer installation drawings clearly showing the location of all deck sheets. Unless otherwise agreed to, the seller shall provide the buyer with one reproducible and three prints of drawings for "approval" and again for "field use". If additional copies are required or desired, they shall be provided at an additional cost at the discretion of the seller. Alternately, the seller shall be permitted to submit erection layouts and other required submittals as electronic files.

User Note: Methods of submission should be agreed upon as part of the sales contract.

5.2.3 Approval: The installation drawings shall be submitted by the seller to the buyer for approval, unless the buyer instructs the seller to submit same directly to the designer or waives his right of approval. Within 14 calendar days, the buyer (or designer) shall return to the seller one copy marked with noted approval or with such corrections as deemed necessary. Resubmission of approval drawings, if required, shall be made only after all requested dimensions and information are provided by the approving entity. The seller shall not be required to direct commencement of manufacture prior to final approval of the seller's drawings, unless such approval is waived. Once the seller has received final approval drawings or a waiver, distribution (field use) drawings will be prepared, and deck manufacture can commence.

Approval of the installation drawings, approval subject to corrections noted and similar approvals shall constitute the following:

(a) Confirmation that the seller has correctly interpreted the contract documents in the preparation of those submittals; and

(b) Release by the designer and ORC to begin manufacture using the approved submittals.

User Note: As used in this Code, the 14-day allotment for the return of shop and erection drawings is intended to represent the seller's door-to-door time. The intent in this Code is that, in the absence of information to the contrary in the contract documents, 14 days may be assumed for the purposes of bidding, contracting and scheduling. When additional time is desired, the modified allotment should be specified in the contract documents.

If installation drawings are approved subject to corrections noted, the ORC may or may not require that it be re-submitted for record purposes following correction. If an installation drawing is not approved, revisions must be made and the drawing re-submitted until approval is achieved.

5.3 Installation Drawings Prepared by Buyer

5.3.1 Furnished by the Buyer: The buyer shall furnish to the seller complete installation drawings and bill of material, all correctly dimensioned.

5.3.2 Discrepancies: The buyers's plans and bill of materials shall be assumed to be correct in the absence of written notice from the buyer to the contrary.

5.3.3 Approval: Responsibility for obtaining approval for installation drawings is the responsibility of the buyer.

5.4 Sign and Seal of Installation Drawings: Neither the seller, the manufacturer, nor the installer shall be responsible for putting a professional seal or signature on installation drawings.

5.5 Changes by Buyer After Agreement: When changes in the project scope as contracted are made via revised contract drawings, steel erection drawings, modified approval drawings, response to RFI's, or other modifications, an extra for material and/or redetailing costs shall be paid by the buyer at a cost agreed upon by the buyer and seller.

5.6 Calculations: Neither the seller nor the manufacturer shall be responsible for providing design calculations, test reports, or other acceptance reports, with or without a professional seal.

However, for each deck type and gage provided for the project by the manufacturer, the manufacturer shall be responsible to provide to the designer either A or B, when requested:

A. Design yield stress, deck sheet coverage, deck weight, positive and negative section property values, shear capacity, and web crippling capacity for interior and exterior bearing conditions.

B. Design yield stress, deck sheet coverage, positive and negative section property values, maximum allowable construction spans based on minimum SDI design criteria, and maximum allowable design loads for applicable project spans based on SDI design criteria. Steel deck design based on criteria or conditions not covered in the applicable ANSI/SDI specifications shall be the responsibility of the designer.

5.7 As Built Drawings: Neither the seller, the manufacturer, nor the installer shall be responsible for "as built" drawings.

Section 6 Handling and Protection

6.1 Site Storage: Neither the seller nor the manufacturer will assume responsibility for damage to steel deck resulting from improper storage protection in the field when the deck is no longer under either the seller or the manufacturer's control. Neither the seller nor the manufacturer will accept responsibility for surface corrosion or damage to deck finish for steel deck that is delivered to the site and stored for an excessive length of time. This applies whether the steel deck was stored properly or not.

6.2 **Protection After Erection:** Steel deck shall be protected by the ORC to avoid any damage to or deterioration of the deck. This protection shall include avoiding extended exposure to aggressive atmospheric conditions, protection from erection traffic and/or handling that might be abrasive to the deck finish, and protection against interior conditions that would cause excess moisture to form on the deck. Deck protection after erection and any cost associated therewith shall be the responsibility of the ORC and is not the responsibility of the seller, manufacturer or installer.

6.3 **Deck Exposed in the Finished Structure:** If aesthetics of the erected product is an important consideration, care shall be taken by the installer and ORC to protect the steel deck during the pre-erection storage as well as throughout the installation process.

Section 7 Installation of Deck and Accessories

7.1 All State and Federal OSHA rules for steel erection shall be followed by the installer and ORC.

7.2 Deck panels and accessories shall be installed in accordance with the contract documents, installation drawings, the requirements of this Code and installation requirements of SDI C, SDI NC, and SDI RD (as applicable).

7.3 Deck areas subject to heavy or repeated traffic, concentrated loads, impact loads, wheel loads, or other like loading, shall be adequately protected by planking or other means to avoid overloading or damage. Planking or any other means of protection is the responsibility of the ORC.

7.4 Neither the seller, manufacturer, nor installer shall be responsible for repairs or reinforcement of the deck required by unscheduled openings cut through the deck.

7.5 Temporary shoring of floor deck, if required, shall be designed to the loading indicated in SDI C or SDI NC, as appropriate, or for greater loads as may be required by Section 8.2. The shoring shall be designed by the designer or the designer's designee, and shall be left in place until the concrete attains 75% of its specified design strength.

7.6 Staggering deck end laps shall not be required

Section 8 Concrete Design and Placement

8.1 Concrete shall be designed in accordance with the requirements of SDI C or SDI NC, as applicable. The designer shall be responsible for concrete design.

8.2 The ORC shall be responsible for verifying the adequacy of the construction loads assumed in the design of the deck as a form for the intended concrete placement equipment being used and the concrete placement operations. Neither the seller, manufacturer, nor installer shall be responsible for performance of this task.

User Note: SDI C and SDI NC contain minimum construction live load requirements; however, bulk dumping of concrete using buckets, chutes, or handcarts, or the use of heavier motorized finishing equipment such as power screeds, may require heavier construction live loads than contained in those Standards. The designer typically has little control over means-and-methods of construction, and should include in the contract documents a requirement that the ORC verify the adequacy of the assumed construction live loads.

8.3 Planking or other protection shall be placed when buggies, wheeled laser screeding apparatus, or like equipment are utilized in the concreting operation. Planks or other protection shall be of adequate stiffness to transfer loads to the steel deck without damaging the deck. Planking or any other means of protection is the responsibility of the ORC.

8.4 Prior to concrete placement, the steel deck shall be free of soil, debris, oil, standing water and all other foreign matter. Neither the seller, manufacturer, nor installer shall be responsible for any required cleaning or debris removal.

8.5 Concrete shall be placed such that the deck will not be damaged by impact or overloading. The ORC retains responsibility for ensuring proper concrete placement methods are followed. Neither the seller, installer, nor manufacturer shall be responsible for specifying concrete placement methods.

8.6 Concrete construction joints shall be designed and location determined by the designer.

8.7 When an increase in local slab thickness is used to compensate for differential floor deflection, the ORC shall secure permission from the designer to exceed the slab thickness before construction. Neither the seller, the manufacturer, nor the installer shall be responsible for concrete volume overages beyond the theoretical volume required by an undeflected floor system. All deflections of the steel deck shall be measured relative to the deflected position of the floor framing.

COMMENTARY

Section 1 General

C-1.1 Scope:

The SDI Floor Deck Design Manual and the SDI Roof Deck Design Manual are sources of additional information regarding design and installation of floor deck and roof deck, respectively.

Structural steel decking is intended to be a structural member to resist vertical and horizontal loads and is not to be considered a water-tight membrane by itself. Neither interlocking nor nestable side laps or end laps are designed for the installation of sealant as it could negatively impact the installation and structural performance of sheet to structure or sheet to sheet connections. SDI therefore recommends that no sealant or other material be placed between the deck sheets at the deck end laps or side laps.

C-1.2 Reference Specifications, Codes, and Standards:

The following documents are referenced within the commentary:

1. Steel Deck Institute (SDI) – (All SDI Publications are available from SDI website)
   - A. SDI Floor Deck Design Manual, 1st Edition, 2014
   - B. SDI Roof Deck Design Manual, 1st Edition, 2013
   - C. SDI-MOC, Manual of Construction with Steel Deck, 2nd Edition
   - D. SDI White Paper, “A Rational Approach to Steel Deck Corrosion Protection”, 1997.
   - E. SDI White Paper, “Jobsite Storage Requirements for Steel Deck”, 2006.
   - F. SDI White Paper, “Damaged Composite Steel Deck”, 2008
   - G. SDI White Paper, “Deck Damage and Penetrations”, 2000
2. American Iron and Steel Institute (AISI)
   - A. AISI S100-07, North American Specification for the Design of Cold-Formed Steel Structural Members
3. Steel Coalition Lubricant Task Group
   - A. “Steel Coalition Lubricant Task Group – Final Report”, May 14, 2002 (Available through SDI website)
4. Underwriters Laboratories (UL)
   - A. Fire Resistance Directory
5. American Society for Testing and Materials (ASTM)
   - A. ASTM C1338 – 08, “Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings”
   - B. ASTM C1320 - 10, “Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction”
   - C. ASTM E119 - 12a, "Standard Test Methods for Fire Tests of Building Construction and Materials"

C-1.4.1 Controlling Standards

Steel roof deck and floor deck, both composite and non-composite, may be used in a variety of ways, some of which do not lend themselves to a standard "steel deck" analysis for span and loading. In these cases, other criteria must be considered in addition to those given by the Steel Deck Institute. Designers must make sure that this investigation starts with a review of the applicable codes and that any special conditions are included in the design.

C-1.4.2 Responsibility for Design

The designer is responsible for specifying deck types, gages, finishes and attachments to facilitate all loading, deflection, span and exposure conditions. The design drawings are to include any temporary floor deck shoring conditions.

C-1.4.3 Responsibility for Shear Connectors:

As a matter of practice, member companies of the Steel Deck Institute (SDI) do not manufacture or normally furnish shear studs. As manufacturers of steel deck, the SDI members are not in a position to properly design the shear connectors to meet the building designer's intent. Consequently, the layout, design, numbering or sizing of shear connectors is not the responsibility of the manufacturer.

C-1.4.4 Responsibility for Fire Rating Design

Fire rating requirements may dictate the concrete strength or density. Many fire rated assemblies that use composite or non-composite floor decks are available. In the Underwriters Laboratories *Fire Resistance Directory*, the deck constructions show hourly ratings for_restrained and unrestrained assemblies. ASTM E119 provides information in Appendix X3 called *Guide for Determining Conditions of Restraint for Floor and Roof Assemblies and for Individual Beams*, indicating that deck attached to steel or concrete framing, and interior spans of wall supported deck may be considered to be restrained, while end spans of wall supported deck should be considered to be unrestrained. However, for most practical applications, interior and exterior spans of multispan deck properly attached to bearing walls may be considered restrained, except perhaps a single span deck system which is unattached to framing or a wall in order to provide a removable slab. Designers should be aware that some fire rated assemblies set limits on load capacity and/or place restrictions on fastener type and spacing.

Section 2 Materials

C-2.1.1 Lubrication

The steel deck industry has adopted the Voluntary Lubricant Compliance Program (VLCP). This was developed for OSHA by the Steel Coalition, which consists of a

group of trade organizations representing manufacturers of various types of steel panels and other related industries. The "Steel Coalition Lubricant Task Group – Final Report" is posted on the SDI website.

Since the adoption of the VLCP and to minimize the slipping hazard during the construction process, most steel deck is now shipped to the jobsite without visible liquid lubricants, regardless of finish. Prior to the VLCP, it was common practice to order sheet steel coils with a light film of lubricant to protect the steel from moisture during coil storage and to provide lubrication during the roll-forming process. An inherent benefit of the light lubricant film was to provide protection of the deck finish while stored in bundles at the jobsite. With the removal of these lubricants from the deck surfaces, proper jobsite storage of steel deck has become even more critical than it was in the past.

C-2.1.2. Thickness

Traditionally gage thicknesses have varied depending upon the gage table utilized. Gage thicknesses listed in Table C-2.1 reflect industry consensus within SDI and SDI standard load tables are developed using these thicknesses in inches. Deck and accessories may be produced to other thicknesses as long as the thickness is properly identified. Availability of odd gages should be verified with individual manufacturers, as they are less readily available than even gages. In accordance with AISI S100, the minimum uncoated steel thickness as delivered to the job site shall not at any location be less than 95% of the design thickness, however lesser thicknesses shall be permitted at bends, such as corners, due to cold-forming effects.

Table C-2.1 – Gage to Thickness Equivalent

Gage No.	Design Thickness		Minimum Thickness	
	in.	mm	in.	mm
28	0.0149	0.38	0.0142	0.36
27	0.0164	0.42	0.0156	0.40
26	0.0179	0.45	0.0170	0.43
25	0.0209	0.53	0.0199	0.50
24	0.0238	0.60	0.0226	0.57
23	0.0269	0.68	0.0256	0.65
22	0.0295	0.75	0.0280	0.71
21	0.0329	0.84	0.0313	0.79
20	0.0358	0.91	0.0340	0.86
19	0.0418	1.06	0.0397	1.01
18	0.0474	1.20	0.0450	1.14
17	0.0538	1.37	0.0511	1.30
16	0.0598	1.52	0.0568	1.44
15	0.0673	1.71	0.0639	1.62
14	0.0747	1.90	0.0710	1.80
13	0.0897	2.28	0.0852	2.16
12	0.1046	2.66	0.0994	2.52
11	0.1196	3.04	0.1136	2.89
10	0.1345	3.42	0.1278	3.25

Section 3 Quality Assurance

C-3.1.1 Oil Canning

Steel sheets of thicknesses typically used in the manufacture of steel deck products may exhibit a degree of waviness in their flat surfaces. This is a condition commonly referred to as "oil canning." Oil canning is an inherent condition with light gage cold-formed steel products, and can result from residual stresses induced or redistributed during coil production, slitting, perforating, forming, or fabrication of steel deck. Improper deck handling, installation, or attachment to misaligned steel supports can also cause oil canning. In general, oil canning is an aesthetic condition with no effect on the structural integrity of the deck. Since many uncontrollable factors can lead to oil canning, the manufacturer assumes no responsibility for the cost of actions taken in response to an oil canning condition.

C-3.1.2 Denting or Crushing

Refer to SDI White Papers, "Damaged Composite Steel Deck" and "Deck Damage and Penetrations" for additional information,

C-3.2 Corrosive Materials in Contact with Steel Deck

Phenolic foam insulation in contact with steel deck can be very corrosive when water is present. Phenolic foam insulation is not recommended for use with steel deck. Polystyrene foam insulation applied directly to steel deck without a thermal barrier may require sprinklers to meet fire-rating requirements. Consult the local codes for this construction.

Fire retardant treated wood and pressure treated wood contain chemicals that can develop a corrosive environment when adequate moisture and heat are present. Precautionary measures should be taken by the designer to prevent such an environment when using treated wood with steel deck. Corrosion of steel deck products in direct contact with pressure treated lumber has become an issue due to the change in products used in producing pressure treated lumber. The pressure treated lumber industry now treats lumber with products referred to as ACQ (Alkaline Copper Quat) and CA-A or CA-B (Copper-azole). Pressure treated lumber with these products have shown to be highly corrosive when in direct contact with sheet steel. The Steel Deck Institute recommends a barrier of water and ice shield or equivalent be used between pressure treated lumber and steel deck products or accessories.

Other corrosive materials, include, but are not limited to, chlorides, acids and bases. Refer to SDI White Paper, "A Rational Approach to Steel Deck Corrosion Protection" for additional information.

C-3.3 Acoustical Elements

The ORC typically uses the roofing contractor to install the acoustical elements in open web deck.

Fiberglass used as an acoustical absorber does not breed or promote fungal growth. All fiberglass typically utilized by SDI member companies is resistant to fungal growth and complies with ASTM C1338. Since mold spores exist in almost every environment according to the Environmental Protection Agency, the key to mold control is moisture control. Proper care should be taken prior to installation. Acoustical elements should be kept dry, off the ground, and protected from water in accordance with ASTM C1320 recommendations.

C-3.4 Fireproofing

The adherence of fireproofing materials is dependent on many variables; neither the seller, the manufacturer, nor the installer can be responsible for the adhesion or adhesive ability of the fireproofing.

C-3.5 Field Painting

The ORC typically uses the painting subcontractor to perform the tasks listed in this section.

In some instances, field paint (applied by other than the manufacturer), either as a full finish coat or as a touch-up, may be a job requirement. If field painting is intended, it is recommended that the steel surface, whether galvanized or primer painted, be checked for compatibility by the painting contractor, following the recommendations of the field coating manufacturer, particularly with regard to ambient application temperatures and humidity, cleanliness, surface moisture and surface preparation if required.

C-3.6 Repair of Deck Finish at Welds

In most cases, deck welds are removed from a corrosive environment when the deck is installed and no weld touch up paint or cold galvanizing is necessary. In those instances where the welds are left exposed to a corrosive atmosphere, the weld should be wire brushed and coated with an approved substance.

Section 4 Estimating and Bidding

C-4.3.1 Sheet Metal Work

These items are most often detailed and furnished by the sheet metal subcontractor; however, this is determined by the ORC.

Section 5 Drawings and Specifications

C-5.4 Sign and Seal of Installation Drawings

Installation drawings are made to show the deck products as an overlay on the structural or architectural plans and as such the drawings interpret the job requirements set forth by the designer. If the manufacturer were to check and seal installation drawings, it would subvert that important function.

C-5.5 Changes by Buyer After Agreement

Changes should be clearly conveyed as such. Neither the seller nor manufacturer will be responsible for incorporating changes that are not specifically marked as changes to differentiate from unchanged portions of the contract.

C-5.6 Calculations

Steel deck is a manufactured product that is normally specified by reference to Steel Deck Institute publications and/or manufacturer's catalogues and load tables. Therefore, job specific calculations are redundant.

Section 6 Handling and Protection

C-6.1 Site Storage

The SDI Manual of Construction with Steel Deck (SDI-MOC) provides guidance regarding proper storage of steel deck. Steel deck shall be stored off the ground with one end elevated to provide drainage, and shall be protected from the elements with a waterproof covering, ventilated to avoid condensation. For more information on this issue, please see the SDI White Paper, "Jobsite Storage Requirements for Steel Deck."

C-6.2 Protection After Erection

Some steel decks are utilized as "finished ceiling" products and shall be protected from moisture and must never be subjected to corrosive substances such as salts, fertilizers or other chemicals or to prolonged contact with dissimilar materials. All steel decks must be protected from erection operations or during site storage that could distort the panel's configuration.

Acoustical steel decks utilize fiberglass insulation batts for sound absorption; hence, protection from moisture, rain, snow, dirt, mud, etc. is necessary. Do not install (field applied) loose insulation batts in the flutes of decking until just before roof system installation. Likewise, cellular acoustical deck with shop-installed insulation batts requires proper site storage and special protection after deck erection before installation of the roofing system.

Section 7 Installation of Deck and Accessories

C-7.6 Staggering deck end laps is not a recommended practice. The deck capacity is not increased by staggering the end laps, yet layout and erection costs are increased. Additionally, because the leading edge of the deck is not even, it creates a potential increased fall hazard.

Section 8 Concrete Design and Placement

C-8.7 Concrete Quantities

It has been shown that the vast majority of all floor system deflections are the result of framing deflections and not deck deflections. Refer to SDI Floor Deck Design Manual for additional information.