



AMERICAN NATIONAL STANDARDS INSTITUTE/ STEEL DECK INSTITUTE

QA/QC - 2022 Standard for

# Quality Control and Quality Assurance for Installation of Steel Deck

Approved American National Standard

**ANSI**

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Since hazards may be associated with the handling, installation, or use of steel deck and its accessories, prudent construction practices should always be followed. The Steel Deck Institute recommends that parties involved in the handling, installation or use of steel deck and its accessories review all applicable manufacturers' material safety data sheets, applicable rules and regulations of the Occupational Safety and Health Administration and other government agencies having jurisdiction over such handling, installation or use, and other relevant construction practice publications.

## Preface

(This Preface is not part of the ANSI/SDI QA/QC-2022, *Standard for Quality Control and Quality Assurance for Installation of Steel Deck*, but is included for informational purposes only.)

This Specification is based upon past successful usage, advances in the state of knowledge and changes in the installation of steel deck. This 2022 Edition of the Standard is a reformatting of the previous ANSI/SDI QA/QC-2017 Standard, with changes to update reference standards and to coordinate with the ANSI/SDI SD-2022, *Standard for Steel Deck*.

This Standard has been developed as a consensus document to provide a uniform practice for ensuring quality in the installation of steel deck used for roof and floor applications. The intention is to provide criteria for routine use and not to provide specific criteria for infrequently encountered problems, which require special consideration by the *Designer*.

The Appendix to this Standard is an integral part of the Standard. A non-mandatory Commentary has been prepared to provide background for the Standard provisions and the user is encouraged to consult it. Additionally, non-mandatory User Notes are interspersed throughout the Standard to provide concise and practical guidance in the application of the provisions.

The user is cautioned that professional judgment must be exercised when data or recommendations in the Standard are applied, as described more fully in the disclaimer notice preceding this Preface.

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## Section A - General Provisions

### A1 Scope and Applicability

#### A1.1 Scope

This Standard for Quality Control and Quality Assurance for Installation of Steel Deck, hereinafter referred to as the Standard, shall govern the minimum requirements for *quality control* and *quality assurance* for material control and installation of cold-formed steel deck and deck accessories used for floor and roof applications in buildings and similar structures, where similar structures are defined as structures designed, fabricated and erected in a manner similar to buildings, with building-like vertical and lateral load-resisting elements.

The Appendix shall be part of the Standard.

The User Notes and Commentary shall not be part of the Standard.

**User Note:** User Notes and Commentary are intended to provide practical guidance in the use and application of this Standard.

#### A1.2 Units of Symbols and Terms

Equations that appear in this Standard are compatible with the US Customary System (USCS) of units. However, any consistent system of units shall be permitted to be used. SI units or equations shown in parentheses in this Standard are for information only and are not part of this Standard.

**User Note:** The USCS is also referred to as English Units or the inch-pound system.

### A2 Reference Codes, Standards, and Documents

The following documents or portions thereof are referenced in this Standard and shall be considered part of the requirements of this Standard. Where these documents conflict with this Standard, the requirements of this Standard shall control:

1. American Iron and Steel Institute (AISI)
  - a. AISI S100-16 w/S2-20 (2020), North American Specification for the Design of Cold-Formed Steel Structural Members
2. American Welding Society (AWS)
  - a. AWS B5.1:2013, Specification for the Qualification of Welding Inspectors
  - b. AWS D1.1:2020, Structural Welding Code-Steel
  - c. AWS D1.3:2018, Structural Welding Code-Sheet Steel
3. Steel Deck Institute (SDI)
  - a. SDI SD-2022, Standard for Steel Deck

### A3 Responsibility

*Quality control (QC)* as specified in this Standard shall be provided by the installer. *Quality assurance (QA)* as specified in this Standard shall be provided by others when required by the *Authority Having Jurisdiction (AHJ)*, the applicable building code, *ORC* or *Designer*.

### A4 Definitions

Terms which are not defined in this Standard, but are defined in SDI SD or AISI S100, shall have the meaning as defined in SDI SD or AISI S100. Terms not defined in this Standard nor SDI SD nor AISI S100 shall have the ordinary accepted meaning for the context for which they are intended.

***Authority Having Jurisdiction (AHJ):*** Organization, political subdivision, office or individual charged with the responsibility of administering and enforcing the provisions of the applicable building code.

***Construction Documents:*** Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit, which have been approved in accordance with the requirements of the applicable building code.

***Design Documents:*** *Design drawings, design model* or a combination of drawings and models, and the *specifications*.

***Design Drawings:*** Graphic and pictorial documents prepared by the *Designer*, showing the design, location and dimensions of the steel deck and accessories. These documents generally include, but are not limited to, plans, sections, details, schedules, diagrams and notes.

***Design Model:*** Digital model of the structure that conveys the steel deck and accessory requirements.

***Designer:*** The licensed professional responsible for the content of the drawings and *specifications* from which the steel deck is to be constructed.

***User Note:*** The *Designer* is usually the structural engineer-of-record; however, it may be the architect or other licensed professional acting within the scope of their license.

***Installation Documents:*** *Installation drawings, installation model* or a combination of drawings and models.

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

**Installation Model:** Digital model produced to convey the information necessary to install the steel deck and accessories. This may be the same digital model as the production model, but it is not required to be.

**Inspect:** When used in conjunction with *quality control* and *quality assurance*, it shall mean the systematic examination and review of the work for compliance with the appropriate documents, with appropriate subsequent documentation.

**Owner's Designated 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:** The *Owner's Designated Representative for Construction (ORC)* is usually the general contractor, the construction manager or similar authority at the job site.

**Production Documents:** Digital models, drawings, diagrams or schedules depicting the steel deck and accessories produced for the specific project.

**Quality Assurance (QA):** Inspection as herein required of the materials, installation, fabrication, erection or placement of components and connections, performed by an agency, individual or firm other than the installer, requiring special expertise to confirm compliance with *construction documents* and referenced standards.

**Quality Assurance Inspector (QAI):** Individual or agency designated to provide *quality assurance* inspection for the work being performed.

**User Note:** When Special Inspection is required by the applicable building code, *QA* is understood to be the Special Inspection required by that code, and the *QAI* is the Special Inspector qualified under that code.

**Quality Control (QC):** Controls and inspections implemented by the installer to confirm that the material provided and work performed meet the requirements of the *construction documents*, *installation drawings*, *production documents*, *design documents* and referenced standards.

**Quality Control Inspector (QCI):** Individual or agency designated to perform *quality control* inspection tasks for the work being performed.

**Quality Control Program (QCP):** A written practice describing the material controls and inspection procedures used by the installer to confirm conformance with the *construction documents* and referenced standards.

**Specifications:** Written documents prepared by the *Designer*, containing the requirements for materials, standards and workmanship from which the steel deck and accessories are to be produced and installed.

## Section B - Required Submittals

### B1 Submittals Required for Approval

The following documents shall be submitted to the *Designer* and *ORC* for approval prior to the installation of the steel deck:

1. *Installation documents* showing deck layout and all accessories, including installation details.
2. Catalog data or independent evaluation reports on deck(s), including profile, thickness, physical properties and finish.

**User Note:** Deck profile, thickness, physical properties and finish may be shown in the *installation documents* or *production documents* instead of on submitted catalog sheets.

### B2 Submittals Required for Review

The following documents, as applicable, shall be made available in electronic or printed form to the *Designer* and the *ORC* for review prior to installation of the steel deck, unless otherwise required by the *Designer* for these documents to be submitted.

1. Manufacturer's installation instructions and product data sheets, catalog data or independent evaluation reports for mechanical fasteners.
2. Manufacturer's product data sheets or catalog data for welding consumables to be used. The data sheets or catalog data shall describe the product, limitations of use, recommended or typical welding parameters and storage and exposure requirements, including baking, if applicable.
3. Mill certification of sheet steel used for deck.
4. Welding procedure specifications (WPS).
5. Procedure qualification records (PQR) for WPS that are not prequalified in accordance with AWS D1.1 or AWS D1.3, as applicable.
6. Welding personnel performance qualification records (WPQR).
7. Installer's written *QCP*.
8. Installer's *QCI* qualifications.

**User Note:** Documents related to mechanical fasteners are required only when mechanical fasteners are being installed. Documents related to welding are required only when welding of steel deck is being performed. At the time of initial submittals, the specific steel coil to be used is not known, therefore the mill certification should not be expected to be made available until after delivery of the deck to the job site. While it is possible to track a coil to a specific deck bundle, once bundles are broken, it is usually not possible to track a coil to a specific deck sheet with absolute certainty. Specific welders may not be known until deck installation begins, therefore WPQRs may not be made available until immediately before deck installation begins. Specific *QCIs* may not be known until deck installation begins; therefore, *QCI* qualifications may not be made available until immediately before deck installation begins.



## Section C - Inspection and Testing Personnel

### C1 Quality Control Inspector Qualifications

*QCI* personnel shall be qualified to the satisfaction of the installer's *QCP*.

#### C1.1 Quality Control Welding Inspection Personnel

*QC* welding inspection personnel shall be qualified to the satisfaction of the installer's *QCP* and in accordance with one of the following:

1. Associate Welding Inspector (AWI) or higher as defined in AWS B5.1; or
2. Qualified by training or experience, or both, in deck installation, inspection or testing and competent to perform inspection of the work.

**User Note:** Qualification by training or experience is permitted by AWS D1.1, Section 8.1.4.2(5) and AISC 360, Section N4.1(b).

#### C1.2 Quality Control Mechanical Fastener Inspection Personnel

*QC* mechanical fastener inspection personnel shall be qualified to the satisfaction of the installer's *QCP* on the basis of training and experience in installation of like or similar fasteners and shall be competent to perform inspection of the work.

### C2 Quality Assurance Inspector Qualifications

The *QAI* shall be a qualified person who shall demonstrate competence to the satisfaction of the *AHJ* and satisfy the *QAI* qualifications contained in Section C2.1 and Section C2.2.

#### C2.1 Quality Assurance Welding Inspection Personnel

*QA* welding inspection personnel shall be qualified in accordance with the *QA* agency's written practice and with one of the following:

1. Welding Inspector (WI) or higher as defined in AWS B5.1, except Associate Welding Inspectors (AWI) shall be permitted to be used under the direct supervision of WIs or higher who are on the premises and available when weld inspection is being conducted; or
2. Qualified by training or experience, or both, in deck installation, inspection or testing and competent to perform inspection of the work.

**User Note:** Qualification by training or experience is permitted by AWS D1.1, Section 8.1.4.2(5) and AISC 360, Section N4.2(b).

#### C2.2 Quality Assurance Mechanical Fastener Inspection Personnel

*QA* mechanical fastener inspection personnel shall be qualified in accordance with the *QA* agency's written practice on the basis of training and experience in inspection of like or similar fasteners and shall be competent to perform inspection of the work.

## Section D - Requirements for Inspection of Steel Deck Installation

### D1 Quality Control

#### D1.1 Quality Control Scope

1. QC tasks shall be performed by the installer's *QCI*.
2. For QC inspection, the *construction documents*, *installation documents*, *production documents*, *design documents* and the applicable referenced standards shall be utilized.

**User Note:** QC documentation is an internal record for the installer to record that the work has been performed and that the work is in accordance with the *construction documents*. Depending upon the installer's *QCP*, the method of documentation may vary.

#### D1.2 Installer's Quality Control Program

1. The installer shall produce and maintain QC procedures and perform inspection to confirm that their work is performed in accordance with this Standard, *construction documents*, *installation documents*, *production documents*, *design documents* and the applicable referenced standards. All material control and installation procedures shall be monitored by the installer's *QCI*.
2. The installer's *QCI* shall *inspect* the following, as applicable:
  - a. Field welding of deck in accordance with AWS D1.3 and SDI SD.
  - b. Installation of mechanical fasteners in accordance with SDI SD and manufacturer's instructions.
  - c. Steel deck installation in accordance with the *construction documents*, *installation documents*, *production documents*, *design documents* and applicable referenced standards.
  - d. Scope of inspections shall comply with Appendix 1 and the requirements of the *AHJ*.

**User Note:** SDI-MOC is a useful guide to appropriate deck placement and installation practice.

### D2 Quality Assurance

#### D2.1 Quality Assurance Scope

1. QA inspection of the deck shall be made at the project site. The *ORC* shall schedule this work with the *QAI* and the installer to minimize interruptions to the work of the installer.
2. The *QAI* shall review the submittals listed in Section B2 for compliance with the *construction documents*.
3. QA tasks shall be performed by the *QAI*.
4. The *QAI* shall submit lists of nonconforming items to the *ORC* and the installer concurrently with the submittal of reports to the *AHJ*, *Designer* or *ORC*.

## D2.2 Quality Assurance Tasks

The *QAI* shall perform the following verifications and inspections, as applicable. Acceptance shall be based on conformance with the *construction documents*.

1. Verify deck materials are represented by appropriate mill certifications.
2. Field welding of deck in accordance with AWS D1.3 and SDI SD.
3. Installation of mechanical fasteners in accordance with SDI SD and manufacturer's instructions.
4. Steel deck installation in accordance with the *construction documents*, *installation documents*, *production documents*, *design documents* and applicable referenced standards.
5. Scope of inspections shall comply with Appendix 1 and the requirements of the *AHJ*.

**User Note:** SDI-MOC is a useful guide to appropriate deck placement and installation practice.

## D3 Coordinated Inspections

Where a task is to be performed by both *QA* and *QC*, it shall be permitted to coordinate inspection functions between the *QAI* and *QCI* so that the inspections are performed by only one party when approved in advance by the *ORC*, *Designer* and *AHJ*. When *QA* tasks are performed only by the *QCI*, each inspection is to be documented in a report and the *QAI* shall periodically review the work of the *QCI* at an interval acceptable to the *ORC*, *Designer* and the *AHJ*.

## D4 Conflicts

In the event that the requirements of the *construction documents* conflict with the *installation documents* or *production documents*, the requirements of the *construction documents* shall govern.

**User Note:** It is not normally accepted practice for the *Designer* to change the requirements of the *construction documents* through the *production documents* or *installation documents* without modifying the *construction documents* through a method acceptable to the *AHJ*.

## Section E - Nonconforming Material and Workmanship

### E1 Processing of Nonconforming Material or Workmanship

Identification and rejection of materials and workmanship not in conformance with the *construction documents* shall be permitted at any time during progress of or following completion of the work. However, this provision shall not relieve the *ORC* or the inspector of the obligation for timely, in-sequence inspections. Nonconforming material and workmanship shall be brought to the immediate attention of the *ORC* and the deck installer. Nonconforming material or workmanship shall be brought into conformance or made suitable for its intended purpose as determined by the *Designer*.

## Appendix 1 - Tables of Inspection or Execution Tasks

“Observe” shall mean to *inspect* these items on an intermittent basis. Operations need not be delayed pending these inspections. Frequency of observations shall be adequate to confirm that the work has been performed in accordance with the applicable documents. In the event that observations determine that the materials and/or workmanship are not in conformance with the applicable documents, additional inspections shall be performed to determine the extent of nonconformance.

“Perform” shall mean to perform these tasks prior to final acceptance for each item or element.

“Document”, within the listed tasks, shall mean the inspector shall prepare reports or other appropriate written documentation indicating that the work has or has not been performed in accordance with the *construction documents*.

**User Note:** The scope of inspections contained in Appendix 1 is considered to be adequate for most installations. At the option of the *Designer* or *AHJ*, the scope of inspections may be increased for specific structures or conditions.

**Table 1.1**  
**Inspection or Execution Tasks Prior to Deck Placement**

	Task	QC	QA
A	Verify compliance of materials (deck and all deck accessories) with <i>construction documents</i> , including profiles, material properties and base metal thickness	Perform	Perform
B	Document acceptance or rejection of deck and deck accessories	Perform	Perform

**Table 1.2**  
**Inspection or Execution Tasks After Deck Placement**

	Task	QC	QA
A	Verify compliance of deck and all deck accessories’ installation with <i>construction documents</i>	Perform	Perform
B	Verify deck materials are represented by mill certifications that comply with the <i>construction documents</i>	N/A	Perform
C	Document acceptance or rejection of installation of deck and deck accessories	Perform	Perform

**Table 1.3**  
**Inspection or Execution Tasks Prior to Welding**

	Task	QC	QA
A	Welding procedure specifications (WPS) available	Observe	Observe
B	Manufacturer certifications for welding consumables available	Observe	Observe
C	Material identification (type/grade)	Observe	Observe
D	Check welding equipment	Observe	Observe

**Table 1.4**  
**Inspection or Execution Tasks During Welding**

	Task	QC	QA
A	Use of qualified welders	Observe	Observe
B	Control and handling of welding consumables	Observe	Observe
C	Environmental conditions (wind speed, moisture, temperature)	Observe	Observe
D	WPS followed	Observe	Observe

**Table 1.5**  
**Inspection or Execution Tasks After Welding**

	Task	QC	QA
A	Verify size and location of welds, including support, side-lap and perimeter welds	Perform	Perform
B	Welds meet visual acceptance criteria	Perform	Perform
C	Verify repair activities	Perform	Perform
D	Document acceptance or rejection of welds	Perform	Perform

**Table 1.6**  
**Inspection or Execution Tasks Prior to Mechanical Fastening**

	Task	QC	QA
A	Manufacturer installation instructions available for mechanical fasteners	Observe	Observe
B	Proper tools available for fastener installation	Observe	Observe
C	Proper storage for mechanical fasteners	Observe	Observe

**Table 1.7**  
**Inspection or Execution Tasks During Mechanical Fastening**

	Task	QC	QA
A	Fasteners are positioned as required	Observe	Observe
B	Fasteners are installed in accordance with manufacturer's instructions	Observe	Observe

**Table 1.8**  
**Inspection or Execution Tasks After Mechanical Fastening**

	Task	QC	QA
A	Check spacing, type and installation of support fasteners	Perform	Perform
B	Check spacing, type and installation of side-lap fasteners	Perform	Perform
C	Check spacing, type and installation of perimeter fasteners	Perform	Perform
D	Verify repair activities	Perform	Perform
E	Document acceptance or rejection of mechanical fasteners	Perform	Perform

# COMMENTARY

(The Commentary is not a part of ANSI/SDI QA/QC-2022, *Standard for Quality Control and Quality Assurance for Installation of Steel Deck*, but is included for informational purposes only.)

## Introduction

The Standard is intended to be complete for normal usage.

The Commentary furnishes background information and references for the benefit of the user seeking further understanding of the basis, derivations and limits of the Standard.

The Standard and Commentary are intended for use by users with demonstrated engineering competence.

## Section A - General Provisions

### A1 Scope and Applicability

#### A1.1 Scope

This Standard provides minimum requirements for *quality control (QC)* and *quality assurance (QA)* for the installation of steel deck and accessories for buildings and other structures. Minimum observation and inspection tasks deemed necessary to ensure quality steel deck installation are defined.

This Standard does not apply to the manufacture of steel deck or accessories by the deck manufacturer, other than material control, nor to manufacture of mechanical fasteners or welding consumables. This Standard does not address *quality control* or *quality assurance* for concrete, concrete reinforcing steel, welded wire reinforcing, discontinuous fiber reinforcement for concrete, steel anchors or placement of concrete.

This Standard is not intended to apply to metal panel roof or wall systems constructed of cold-formed steel where the roof or wall panel acts as the roof or wall covering providing both weather protection and support for structural loads. These panels are commonly used as roof or wall panels over open framing in pre-engineered buildings, post frame buildings and canopy structures.

QC/QA provisions for structural steel and headed steel anchors are found in Section N of AISC 360 and Section J of AISC 341.

This Standard also defines a comprehensive system of “*quality control*” requirements on the part of the deck installer and similar requirements for “*quality assurance*” on the part of the *ORC* when such is deemed necessary to complement the installer’s *quality control* function. These requirements exemplify recognized principles of developing involvement of all levels of management and the workforce in the *quality control* process as the most effective method of achieving quality in the constructed product. The Standard supplements these *quality control* requirements with *quality assurance* responsibilities as are deemed suitable for a specific task.

The terminology adopted is intended to provide a clear distinction between deck installer requirements and the requirements of others. The definitions of *QC* and *QA* used here are consistent with usage in related industries, such as the structural steel industry, and they are used for the purposes of this Standard. It is recognized that these definitions are not the only definitions in use.



### Use of this Standard for Purposes Other Than Special Inspection

This Standard has been prepared specifically for providing requirements for Special Inspections as required by Chapter 17 of the International Building Code or other governing building code. However, this Standard may also be used for setting forth requirements for *quality control* and *quality assurance* for cases where Special Inspections are not required by the Code. In this instance, if a *Designer* wishes to incorporate this standard into project *specifications* as a contractual requirement, the following modifications to this specification are recommended:

**Table C-A1.1**  
**Modifications to ANSI/SDI QA/QC-2022**

Section B2.3:	Delete this section.
Section C2:	Change “ <i>AHJ</i> ” to “ <i>Designer</i> ”
Section D1.2.2.d:	Delete “and the requirements of the <i>AHJ</i> .”
Section D2.1.4:	Delete reference to “ <i>AHJ</i> ”
Section D2.2.1:	Delete this section.
Section D2.2.5:	Delete “and the requirements of the <i>AHJ</i> .”
Section D3:	Delete references to “ <i>AHJ</i> ”
Appendix 1:	Delete task 1.2.B

A *Designer* may incorporate this Standard into the project *specifications* in a manner similar to the following:

“*Quality control* and *quality assurance* for steel deck installation shall be in accordance with ANSI/SDI QA/QC-2022, “Standard for Quality Control and Quality Assurance for the Installation of Steel Deck”, as modified by Table C-A1.1 contained in the Commentary to that Standard.”

Alternately, the *Designer* may list any applicable changes to this Standard individually within the project specification.

## **A2 Reference Codes, Standards, and Documents:**

The following Standards and documents are referenced within the Commentary or in the User Notes:

1. American Institute of Steel Construction (AISC)
  - a. AISC 341-22, Seismic Provisions for Structural Steel Buildings
  - b. AISC 360-22, Specification for Structural Steel Buildings
2. American Iron and Steel Institute (AISI)
  - a. AISI S100-16 w/S2-20 (2020), North American Specification for the Design of Cold-Formed Steel Structural Members.
3. International Code Council (ICC)
  - a. International Building Code
4. National Fire Protection Association (NFPA)
  - a. NFPA 5000, Building Construction and Safety Code
5. Steel Deck Institute (SDI)
  - a. SDI-MOC, Manual of Construction with Steel Deck, 3<sup>rd</sup> Edition

### A3 Responsibility

For the purposes of this Standard, *QC* includes those tasks performed by the deck installer that have an effect on quality or are performed to measure or confirm quality. *QA* tasks performed by organizations other than the deck installer are intended to provide a level of assurance that the installed deck meets the project requirements.

The terms *quality control* and *quality assurance* are used throughout this Standard to describe inspection tasks required to be performed by the deck installer and *ORC*, respectively. The *QA* tasks are inspections often performed when required by the applicable building code or *AHJ*, and designated as “Special Inspections,” or as otherwise required by the *ORC* or *Designer*.

## Section B - Required Submittals

### B1 Submittals Required for Approval

The documents listed must be submitted so that the *Designer* or the *Designer's* designee can evaluate that the items prepared by the manufacturer or installer meet the *Designer's* design intent. This is usually done through the submittal of production and *installation documents*.

The listed submittals are considered adequate for most common deck installations. The *Designer* should review the listed submittals for applicability and required submittals may be increased for specific structures or conditions.

### B2 Submittals Required for Review

The listed submittals are considered adequate for most common deck installations. The *Designer* should review the listed submittals for applicability and required submittals may be increased for specific structures or conditions.

## Section C - Inspection and Testing Personnel

### C1 Quality Control Inspector Qualifications

The installer determines the qualifications, training and experience required for personnel conducting the specified inspections. Qualifications should be based on the actual work to be performed and should be incorporated into the installer's *QCP*. Inspection of welding should be performed by an individual who, by training and/or experience in deck installation, inspection and testing, is competent to perform inspection of the work. This is in compliance with AWS D1.1/D1.1M Clause 8.1.4.2(5). Recognized certification programs are a method of demonstrating some qualifications, but they are not the only method nor are they required by Section C1 for *QCIs*.

### C2 Quality Assurance Inspector Qualifications

The *QA* agency determines the qualifications, training and experience required for personnel conducting the specified *QA* inspections. This may be based on the actual work to be performed on any particular project. AWS D1.1/D1.1M clause 8.1.4.2(5) states "An individual who, by training or experience, or both, in metals fabrication, inspection and testing, is competent to perform inspection of the work." Qualification for the *QAI* may include experience, knowledge and physical requirements.

These qualification requirements are documented in the *QA* agency's written practice. AWS B5.1 is a resource for qualification of a welding inspector.

The use of assistant welding inspectors under direct supervision is as permitted in AWS D1.1/D1.1M Clause 8.4.4.4.

## Section D - Requirements for Inspection of Steel Deck Installation

### D1 Quality Control

Typical model building codes, such as the International Building Code (IBC) or NFPA 5000, make specific statements about inspecting to “Approved Construction Documents”—the original and revised *construction documents* as approved by the building official or *AHJ*.

Relevant items in the approved *construction documents* that must be followed in production and installation should be placed on the *production documents* and *installation documents* or in typical notes issued for the project. When this is done, *QC* inspection may be performed using *production documents* and *installation documents*, not the original *design documents*.

### D2 Quality Assurance

Model building codes, such as the IBC or NFPA 5000, make specific statements about inspecting to “Approved Construction Documents” and the original and revised *construction documents* as approved by the building official or the *AHJ*. Because of these IBC or NFPA 5000 provisions, the *QAI* should *inspect* using the original and revised *construction documents*. The *QAI* may also use the *production documents* and *installation documents* to assist in the inspection process.

### D3 Coordinated Inspections

Coordination of inspection tasks may be used where tasks are redundant. The approval of both the *AHJ* and *Designer* is required for *QA* to rely upon *QC*, so there must be a level of assurance provided by the quality activities that are accepted.

## Appendix 1. Tables of Inspection or Execution Tasks

This Standard defines two inspection levels for required inspection tasks and labels them as either “observe” or “perform.” The choice in terminology reflects the multi-task nature of welding and mechanical fastening operations, and the required inspections during each specific phase.

The following information is provided to assist field inspectors in checking base metal thickness:

1. Allowable minimum base metal thickness is 95% of the design thickness, per AISI S-100, Section B7.1. Lesser thicknesses are permitted at bends and corners. Design thickness is as specified by the manufacturer.
2. Primer paint thickness is usually on the order of 0.30 to 0.40 mils per side (0.0003 to 0.0004 inches)
3. Galvanizing thicknesses (measured as the total of both sides of the sheet) are typically as follows:

G40	0.50 mils (0.0005 inches)
G60	0.90 mils (0.0009 inches)
G90	1.40 mils (0.0014 inches)