

## **Section 11    Welding**

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### Section 11 Welding

#### 4-1101 General

Section 11, “Welding,” of the *Standard Specifications* describes the requirements for welding where welding is specified to comply with an American Welding Society welding code. A primary purpose of this section is to assure quality control for welding items of work. Other sections also cover welding requirements such as Sections 48, “Temporary Structures”; 49, “Piling”; 52, “Reinforcement”; 55, “Steel Structures”; 56, “Overhead Sign Structures, Standards, and Poles”; and 60, “Existing Structures,” of the *Standard Specifications*.

This manual section provides guidance for inspecting and monitoring the contractor’s quality control activities involving welding that must meet the requirements of Section 11 of the *Standard Specifications*. The activities include handling correspondence, submittals, reports, quality control plans and records, and certificates of compliance, along with sampling, testing, and inspection of work in progress.

For details about welding, refer to Engineering Service’s *Bridge Construction Records and Procedures* manual at:

<https://dot.ca.gov/programs/engineering-services/manuals>

#### 4-1102 Before Work Begins

Before work begins, take the following steps:

- Verify that the contractor has assigned a qualified quality control manager and inspection personnel.
- Meet with the welding quality control personnel to discuss the requirements for submitting welding quality control plans.
- Inform the welding quality control personnel that their quality control activities may at times need to be coordinated with Caltrans’ ongoing quality verification activities, as described throughout this manual.

#### 4-1103 During the Course of Work

During the course of work do the following:

- Verify that the required quality control personnel perform duties as specified. Check that correspondence, submittals, reports, quality control plans and records, and certificates of compliance are handled as specified.
- Until the engineer, typically the structures representative, authorizes the proper submittals, do not permit welding of any type on materials permanently incorporated in the work. Refer to the Section 11, “Welding,” and Bridge Construction Memo 60-4.06, “Existing Structures – Modifying Structures – Steel

Column Casings,” of the *Bridge Construction Records and Procedures Manual, Vol. 2*, for guidelines.

- Make sure the contractor submits the time and location of quality control sampling and testing with sufficient notice to allow Caltrans staff to witness quality control sampling and testing.
- Make sure welding follows the authorized Welding Quality Control Plan and verify that it is carried out by certified welders.
- Verify that appropriate nondestructive testing is done by certified welding inspectors and testing inspectors to Caltrans’ standards and in a timely manner.
- Refer to Chapter 6, “Sampling and Testing,” of this manual for additional guidance in assuring that materials and work quality comply with specifications.

#### **4-1104 Level of Inspection**

Level of inspection for welding work activities is as described in Chapter 1, Section 7, “Inspection and Testing,” of the *Construction Quality Assurance Program Manual*, at:

<https://dot.ca.gov/programs/construction/publications>

#### **4-1105 Payment**

For measurement and payment details, review contract specifications.