

AWS D1.8/D1.8M:2005
An American National Standard



Structural Welding Code— Seismic Supplement



American Welding Society



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An American National Standard**

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Structural Welding Code— Seismic Supplement

1st Edition

Prepared by the
American Welding Society (AWS) D1 Committee on Structural Welding

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This code supplements the requirements of AWS D1.1/D1.1M, *Structural Welding Code—Steel*. This code is intended to be applicable to welded joints in seismic load resisting systems designed in accordance with the AISC Seismic Provisions. Clauses 1–7 constitute a body of rules for the regulation of welding in seismic load resisting systems. There are seven mandatory annexes in this code. A commentary of the code is included with the document.



American Welding Society

550 N.W. LeJeune Road, Miami, FL 33126

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Structural Welding Code—Seismic Supplement

1. General Requirements

1.1 Applicability

The provisions of this code supplement the provisions of AWS D1.1/D1.1M, *Structural Welding Code—Steel*, and shall apply to the design, fabrication, quality control, and quality assurance of welded joints designed in accordance with the AISC *Seismic Provisions for Structural Steel Buildings*. All provisions of AWS D1.1/D1.1M for statically loaded structures shall apply to the designated welds, except as specifically modified herein.

1.2 Responsibilities

1.2.1 Engineer's Responsibilities. In addition to the items listed in AWS D1.1/D1.1M, the Engineer shall provide the following information in the Contract Documents:

- (1) Connection configuration, material specifications, and part sizes required to provide the needed seismic performance (see 1.3)
- (2) Identification of members that comprise the Seismic Load Resisting System (SLRS) and that are subject to the provisions of this code (see 3.1)
- (3) The location of the Protected Zone for members of the SLRS (see 3.3)
- (4) Welds designated as "Demand Critical" and subject to specific provisions of this code (see 3.2)
- (5) Locations where the removal of backing is required (see 6.7)
- (6) Locations where fillet welds are required when backing is permitted to remain (see 6.12)
- (7) Locations where the removal of weld tabs is required (see 6.10.3 and 6.10.4)
- (8) Locations where fillet welds are required to reinforce groove welds, or to improve connection geometry (see 6.8)
- (9) Locations of access holes and the required shape, whether standard AWS D1.1/D1.1M geometry (see 6.9.1.1), standard alternate geometry (see 6.9.1.2), or a special geometry designated by the Engineer (see 6.9.1.3)

(10) The Lowest Anticipated Service Temperature (LAST) of the steel structure for structures that are not normally enclosed and maintained at a temperature of 50°F [10°C] or higher (see 3.5 and 6.3.6)

(11) Butt joints subject to tension where tapered transitions are required (see AWS D1.1/D1.1M subclause 2.7.1)

(12) Those joints or groups of joints in which a specific assembly order, welding sequence, welding technique, or other special precautions are required (see AWS D1.1/D1.1M subclauses 2.2.3 and 5.21)

(13) Quality Assurance Plan (QAP) for the project (see 3.4, 7.1)

(14) Any additional provisions applicable to the specific project not governed by AWS D1.1/D1.1M or this code.

1.2.2 Contractor's Responsibility. When this code or the Quality Assurance Plan (QAP) requires the Contractor to retain documentation, the document(s) shall be retained for at least one year after substantial completion of construction. The documents shall be made available to the Engineer, Inspector, or both when requested. When the QAP requires submittal of document(s), submittals shall be made to the Engineer and copies of submittals shall be retained by the Contractor.

1.2.2.1 AWS A5 Certification. Certificates of Conformance for electrodes, fluxes, and shielding gases shall satisfy the applicable AWS A5 requirements.

1.2.2.2 Certification of Heat Input Envelope Testing. Certifications that filler metals meet the Heat Input Envelope Testing requirements of 6.3.5 and Annex A shall be provided by the filler metal manufacturer. Should the filler metal manufacturer not supply such certifications, the Contractor shall have the necessary testing performed and provide the test reports.

1.2.2.3 Product Data Sheets. For GMAW performed with composite (cored) electrodes and for all FCAW and SMAW electrodes, the filler metal manufacturer's data sheets or catalog data supplied with Welding Procedure