

AASHTO/AWS D1.5M/D1.5:2002
An American National Standard

Bridge Welding Code

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American Association of State Highway
and Transportation Officials



American Welding Society

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An American National Standard**

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Bridge Welding Code

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Prepared by
AWS D1 Committee on Structural Welding
AASHTO Highway Subcommittee on Bridges and Structures

Under the Direction of
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Approved by
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Abstract

This code covers the welding requirements for AASHTO welded highway bridges made from carbon and low-alloy constructional steels. This 2002 edition contains dimensions in metric SI Units and U.S. Customary Units. Sections 1 through 7 constitute a body of rules for the regulation of welding in steel construction. Section 9 of the previous edition has had its provisions distributed throughout the 2002 edition. Sections 8, 10, and 11 do not contain provisions, as their analogue D1.1 sections are not applicable to the D1.5 Code. Section 12 contains the requirements for fabricating fracture critical members.

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Bridge Welding Code

1. General Provisions

1.1 Application

1.1.1 This code covers welding fabrication requirements applicable to welded highway bridges. It is to be used in conjunction with the *AASHTO Standard Specification for Highway Bridges* or the *AASHTO LRFD Bridge Design Specifications*.

The code is not intended to be used for the following:

- (1) Steels with a minimum specified yield strength greater than 690 MPa [100 ksi]
- (2) Pressure vessels or pressure piping
- (3) Base metals other than carbon or low alloy steels
- (4) Structures composed of structural tubing

Fabrication of structures or components not specifically addressed by this code shall be performed in conformance with the special provisions of the contract or in conformance with the written directives of the Engineer who may choose to reference an alternate applicable welding standard.

1.1.2 The fundamental premise of the code is to provide general stipulations applicable to any routine bridge situation. Acceptance criteria for production welds different from those described in the code may be used for a particular application, provided they are suitably documented by the proposer and approved by the Engineer.

Such alternate acceptance criteria may be based upon evaluation of suitability for service using past experience, experimental evidence, or engineering analysis considering material type, service load effects, and environmental factors.

1.1.3 The term *Engineer* as used in this code shall mean the State Bridge Engineer, or the Bridge Engineer's designated representative. The Engineer acts on behalf of the State or Owner and unless otherwise specified, shall be the Owner's official representative. All references to

acceptance or approval shall mean acceptance or approval by the Engineer.

1.1.4 The term *Contractor* as used in this code indicates the party responsible for performing the work as required by the contract documents. The term Contractor is used collectively to mean contractor, manufacturer, fabricator, erector, or other party performing the work.

1.2 Base Metal

1.2.1 Specified Base Metal. The contract documents shall designate the specification and classification of base metals to be used.

1.2.2 Approved Base Metals. Unless otherwise specified, base metals to be welded under this code shall meet the requirements of the latest edition of AASHTO M270M (M270) (ASTM A 709M [A 709]) for the grade of steel shown on the plans or described in the specifications. All Grade 345 (50) steel that is to be welded shall be Type 1, 2, or 3. Other steels may be approved by the Engineer. Thickness limitations shall not apply to bearing components.

M270M (M270) steels of a designated grade are essentially the same as ASTM A 709M (A 709) steels of the same grade. A 709M (A 709) may be used as a reference and a guide to other ASTM "referenced documents;" however, when there is a difference, the provisions of M270M (M270), including the documents referenced in M270M (M270), shall govern. The provisions of this code are not intended for use with steels having a minimum specified yield strength over 690 MPa [100 ksi].

1.2.3 Thickness Limitations. The provisions of this code do not apply to welding base metals less than 3 mm [1/8 in.] thick. Where base metals thinner than 3 mm