

**STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENT 1011  
ODOT REVISION TO AASHTO/AWS  
BRIDGE WELDING CODE D1.5 - 2002 and Interims**

**July 30, 2004**

Conformance with AASHTO/AWS D1.5 Bridge Welding Code is required by the Ohio Department of Transportation's Item 513 of the Construction and Material Specifications (CMS). The purpose of this supplement is to list the exceptions and additions to that Code which will be required by the Department that have not been addressed by Construction and Material Specification 513.

**PART A      Exceptions and Additions**

**1.3.6 Replace the existing section with the following:** Welding of fabricated material, payment for which is based upon Construction and Material Specification (C&MS) Items 513 (Unique fabrication level only), 515, 516, 517, and 518, may be fabricated without performing the procedure qualification test as described in Section 5 subject to the following restrictions:

(1) SMAW, SAW, FCAW, and GMAW welding shall be considered prequalified and exempt from the qualification tests described in Section 5, provided that welding is performed in accordance with all other provisions of the code.

(2) All welding performed in accordance with the provisions of this subsection shall be conducted within the limitations of welding variables recommended by the filler metal manufacturer. Welds attaching the items described by 1.3.6 to main members shall meet all requirements of the code.

(3) The Office of Material Management may also require fabricators which weld miscellaneous items to perform the procedure qualification test if they fail to meet AWS Section 9.21 requirements for acceptable welds.

**3.2.1 Add the Following sentence:** All mill scale shall be removed from the surface to which moment plate welds are attached.

**3.3.7.3 Replace the existing section with the following:** No tack welding is permitted in areas that are not incorporated into the final weld.

**3.5.1.4 Add the following sentence:** Permissible difference in horizontal curvature of top and bottom flange at any point on centerline of member, when measured as specified in 3.5.1.4, shall not exceed 3/8 inch (10 mm).

**3.5.1.10 Replace the existing section with the following:** The provisions of 513.13 must apply.

**3.10 Replace the existing section with the following:**

Care shall be taken to avoid arc strikes outside the area of permanent welds on any base metal. Cracks or blemishes caused by arc strikes shall be ground to remove all defects. Magnetic Particle tests, with the aluminum prod method, shall be used to determine that no cracks are present in the structure. Hardness tests shall be employed as stated in section 3.3.7.4

**4.14.3 Add the following sentence:** The Contractor/Fabricator shall be responsible for furnishing equipment to verify the wind velocity is less than 5 mph (8 km/h).

**5.2.3 Add the following sentence:** An independent third party acceptable to the state is defined as those which are described in Part B of this Supplement.

**5.21.4 Replace the existing section with the following:** The field welder's, welding operator's and tacker's qualification, as specified in this code, shall be considered as effective for a period of five years unless: (1) the field welder, welding operator and tacker is not engaged in a given process of welding for which the field welder, welding operator and tacker is qualified for a period exceeding six months; or (2) there is some specific reason to question a field welder's, welding operator's and tacker's ability.

The shop welder, welding operator, and tacker's Period of Effectiveness shall be as stated in Section 5.21.4 of the AWS Bridge Welding Code D1.5 with the exception of part (1) as specified in PART B, Administrative Procedures as listed above.

**5.21.7 Replace the existing section with the following:** Records of the field welder's, welding operator's and tacker's test results and test specimens shall be kept by the Contractor/ Erector and shall be submitted to the Department for their review and approval.

Test specimens and test data reports from shop welders are the responsibility of the Manufacturer's or Fabricator's Quality Control Department(QCD) and shall be kept on file and made available to those authorized to examine them.

**5.23.1.2 Add the following sentence:** Qualification by Radiography of the welder is not an acceptable alternative.

**5.23.1.3 Add the following sentence:** Qualification by Radiography of the welder is not an acceptable alternative.

**5.23.2.1 Add the following sentence:** Qualification by Radiography of the welder is not an acceptable alternative.

**5.25.1 Add the following sentence:** Qualification by Radiography of the welder is not an acceptable alternative.

**5.26.1 Delete this section**

**5.27.2 Delete this section**

**6.1.3.4 Add the following sentence:** Direct supervision is defined as the NDT Level II at the same physical location as the NDT Level I.

**7.8.1 Add the following paragraph:** After studs have been welded, each stud shall be given a light blow with a hammer. The stud, when tapped with a hammer, should emit a ringing sound. Any stud that doesn't emit this ringing sound shall be bend tested as per this section. Any stud, bend tested per this section, that cracks in the weld or shank shall be replaced.

**11 Strengthening and Repairing Existing Structures:** The requirements of the Code and of this supplement shall apply to the strengthening and repair of existing structures.

## **PART B Administrative Procedures**

Qualification tests required for welders, welding operators and tackers shall be made, except as otherwise authorized below, by witnessing and supervision by an accredited independent testing laboratory engaged by the employer (manufacturer, fabricator or contractor) of the welder, welding operator or tacker; an accredited testing laboratory shall be one which conforms to the requirements of ASTM E 329. A field welder may engage an accredited testing laboratory to attempt to qualify himself. Other independent agencies may be acceptable for witnessing of the weld test if approved by the Office of Material Management and witnessing is performed by a Certified Welding Inspector as described in section 6.1.3.1.1. The welder, welding operator, and tacker must perform the entire operation of welding the test plates, without assistance, including setting of amperage and voltage controls, starting the machine and performing the welding.

### **FIELD WELDERS**

Test specimens and test data reports from field welders shall be submitted to the:

**ODOT Office of Materials Management  
1600 West Broad Street  
Columbus, Ohio 43223**

so as to be received at least seven days before field welding is to begin. The test specimens shall be properly identified by steel stamp, paint or waterproof crayon. A Sample Test Data Report is shown in this welding code, Annex III, Form III-4.

Test specimens will be returned to the sender, at his expense, if so requested at the time of submittal.

Field welders, welding operators, and tackers are not permitted to perform welding until the ODOT Office of Materials Management has approved the welder, welding operator, and tacker as qualified.

In order that the qualification of a field welder, welding operator, and tacker may be kept in effect, the field welder, welding operator, and tacker shall submit an accurate record of his employment at metal arc welding to the Department's Office of Materials Management, (see address above) at intervals of not more than six months. The "Welding Employment Form" attached to this supplement may be used or a letter with the required information may be submitted. Additional forms may be obtained from the Office of Materials Management. It is the responsibility of the field welder, welding operator, and tacker doing field welding to keep the Office advised of his or her correct mailing address.

The field welder's, welding operator's and tacker's qualification, as specified in this code, shall be considered as effective for a period of five years unless: (1) the field welder, welding operator and tacker is not engaged in a given process of welding for which the welder, welding operator and tacker is qualified for a period exceeding six months; or (2) there is some specific reason to question a field welder's, welding operator's and tacker's ability.

## **SHOP WELDERS**

Test specimens and test data reports from shop welders are the responsibility of the Manufacturer's or Fabricator's Quality Control Department (QCD) and shall be kept on file and made available to those authorized to examine them. A Sample Test Data Report is shown in this welding code, Annex III, Form III-4.

Shop welders, welding operators, and tackers are not permitted to perform welding until the QCD has on file a Test Data Report that meets the requirements of Part B of the AWS Bridge Welding Code D1.5 and has been approved by an independent third party acceptable to the State as stated above.

The qualification of shop welders, welding operators, and tackers shall be maintained in effect by a letter of employment experience issued by the employer and shall be updated at intervals of not more than six months. It shall include data similar to that required by the "Welding Employment Form" attached to this supplement. These records shall be the responsibility of the QCD and shall be kept on file and made available to those authorized to examine them. In the case of the work record updates not being

maintained, the shop welder, welding operator, and tackers qualification shall be deemed null and void and shall require re-qualification.