Kentucky Method 64-109-06
Revised 10/6/06
Supersedes 64-109-05
Dated 1/05/05

QUALIFICATION OF STEEL REINFORCEMENT TACK WELDERS

1. SCOPE: This method, based on modifications of the AWS (American Welding Society) Bridge Welding Code A5.1, A5.5, A5.18, or D1.4, current edition, outlines the procedures for qualifying tack welders for welding steel reinforcement. Information herein is taken from Section 605 of the Standard Specifications For Road and Bridge Construction.

2. PROCEDURE:

   2.1. Use the bar stock and welding equipment that is required for fabrication of the steel at the precast or prestress producer's facility. Acceptable electrodes and welding processes are listed in Section 3.

   2.2. Prepare 3 sample tack welds of the following 4 combinations: #4 (13 mm) to #6T (19T mm), #6 (19 mm) to #4T (13T mm), #4 (13 mm) epoxy to #5T (16T mm), and #5 (16 mm) epoxy to #4T (13T mm) where T is the short bar of the welded intersection. Samples do not necessarily need to be cut from a cage but the long bar should be in the vertical position when tack welded, thereby simulating actual welding conditions.

   2.3. The bar to be tested shall be approximately 24 inches long. The 'T' cross bar shall be 6-8 inches long. The weld shall join the bars at mid point $\pm$1" of each long bar.

   2.4. Prepare the bars in the presence of the KYTC inspector. Securely tape the 3 bars of each combination together. The inspector will deliver the test bars (and the appropriate forms) to the Division of Materials for evaluation.

   2.5. The Division of Materials' Physical Section will evaluate each bar to determine if the physical properties of the bar have been degraded by the weld. Each bar must meet the minimum requirements for TENSILE and YIELD strength of the bar stock as well as % ELONGATION and BEND. If any bar fails, the 3 bar combination fails. If any combination fails, the welder fails to qualify.

3. ELECTRODES:

   3.1. Shielded Metal-arc Process: Use only electrodes with low hydrogen classifications E7015, E7016, E7018, E7028, E9015, E9016, E9018, or E9028 according to AWS A5.1 or A5.5 as applicable.

   3.2. Gas Metal-arc Process: Use electrode classification ER70S according to AWS A5.18.

4. QUALIFIED STATUS:

4.1. If the welder fails to qualify, he or she may take a re-test provided double the number of bars are welded for each combination that failed. If any of the re-test bars fail, the welder must wait 90 days before he or she can take the test again.

4.2. Qualified status shall be limited to two years from the date of completion of testing. If the welder is not engaged in the welding process for which he/she is qualified for a period exceeding 6 months, qualification status may be revoked within that two year period. Or in the judgment of the Engineer there is reason to question the welder's ability, qualification status may be revoked within that two year period.

5. COST OF TESTING:

5.1. The cost of the materials is the responsibility of the welder or fabricator.

5.2. The cost of testing weld specimens shall be the responsibility of the welder or fabricator. Contact the Physical Section in the Division of Materials to schedule testing and to obtain test cost information.

APPROVED _____

Director
DIVISION OF MATERIALS

DATE _____10/6/06_____

Attachment

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Supersedes 64-109-05
Dated 1/05/05

km10906.doc

KENTUCKY TRANSPORTATION CABINET TC 64-752
Division of Materials Rev. 10/6/06

TACK WELDERS
Section 605.03.04

ID NUMBER_____Date Sampled_____

INSPECTOR ID_____INSPECTOR NAME_____

COMPANY NAME_____ LOCATION_____

TYPE OF INSPECTION_____

MATERIAL CODE_____7069_____

Welder SSN_____ Expiration Date_____

Welder Name_____Previously Approved for KY (Yes)_____ (No)____

Route or Street_____

City_____ State_____Zip Code_____

PCN #_____Project Number_____

Date Received_____Pass/Fail_____Date Complete_____

CHECK APPROVED TACK WELDS

4 + 6T_____ 4E + 5T_____

Carbon Equivalent_____ Carbon Equivalent _____

6 + 4T_____ 5E + 4T_____

Carbon Equivalent_____ Carbon Equivalent _____

WELDING PROCESS TYPE: Shielded Metal-Arc_____ Gas Metal-Arc_____

Electrode or Wire Classification_____ Electrode Size_____Preheat Temperature_____

VISUAL INSPECTION: Appearance _____Rod Oven Temp ^{o}F_____

Undercut _____ Porosity _____

Inspector Observing Welding_____

Title_____District_____

REMARKS: COPIES:

km10906.doc