

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000550**Date Inspected:** 29-Oct-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Ye Yongjun**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Welder Performance Qualifications/Mock Up**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding being performed for welder qualification. The QA Inspector observed the Flux Cored Arc Welding (FCAW) Process being used in the 1G position with ceramic backing strips attached. The QA Inspector observed 2 welders placing root passes in their test pieces utilizing the above FCAW process with ZPMC approved weld procedure specification WPS-B-T-2231-T. The QA Inspector observed QA/QC Engineer Jiang Weifeng of 3rd party inspection agency Moody International, inspecting the root passes of the test pieces. Mr. Weifeng rejected 2 of the test samples for cracks and porosity in the face side of the root passes. The QA Inspector observed elongated porosity 5 millimeters (mm) in length by 2 mm wide at the start of the weld on test piece number 070907105 which, was followed by a crack 10 mm long. The QA Inspector also observed wormhole porosity at the start of the weld in test piece 070907104 followed by a crack of 12 mm in length. The attached photographs provide additional detail of the test piece with the worm hole porosity.

Elevation 77:

Caltrans Quality Assurance (QA) Inspector Charlie Franco was present at the time requested to randomly observe welding being performed for the fabrication of the Mock Up at elevation 77. The QA Inspector randomly observed ZPMC qualified welder Zhang Binghua utilizing the Flux Cored Arc Welding process to perform a 2nd time repair to the weld attaching longitudinal stiffener piece mark mp2-2 to Skin Plate A Sub-Assembly (SA) MUSA-MA2, in Weld Joint (WJ) Number 3 inside. Mr. Zhang was utilizing ZPMC approved Weld Procedure Specification (WPS) WPS-345-FCAW-2G(2F)-Repair. The QA Inspector observed ZPMC CWI Ye Yongjun monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and

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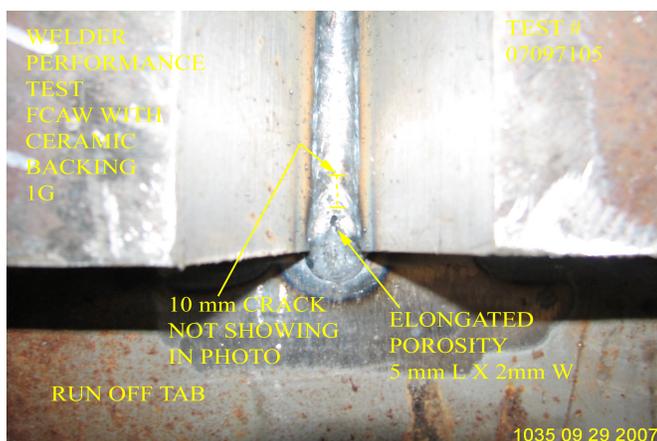
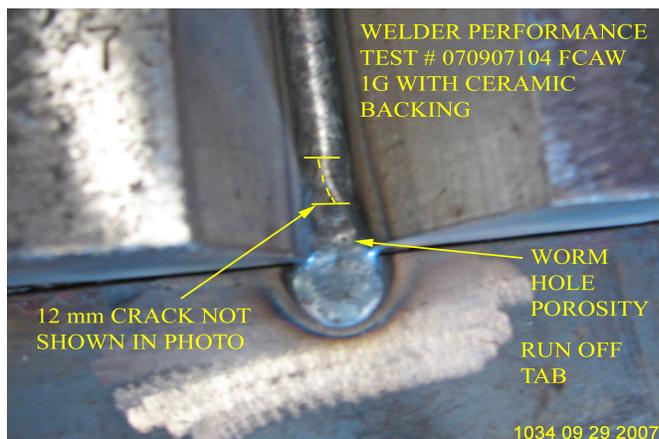
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documented them as follows: welding amperage 305 amps, welding voltage 30 volts with a travel speed of 300 millimeters per minute. Weld parameters appeared to comply with the above approved ZPMC WPS.

Elevation 114:

The QA Inspector observed a ZPMC helper blending welds on the concave side of Interior Corner Splice Assembly MUC-A116. The following photograph provides additional detail.

The QA Inspector observed ZPMC qualified welders Gou Dengyun and Li Dong utilizing the Shielded Metal Arc Welding (SMAW) process, to attach lifting lugs to Interior Splice Assembly MUC-A75. Mr. Guo and Mr. Li were utilizing ZPMC weld procedure specification WPS-B-P-2112 with 4 millimeter diameter welding rod. The QA Inspector observed ZPMC CWI Xu Bing monitoring weld parameters. The QA Inspector also performed random verification of the weld parameters and documented them as follows: welding amperage 175 amps for Mr. Guo and 168 amps for Mr. Li. Weld parameters appeared to comply with the above approved ZPMC WPS.



Summary of Conversations:

There were no relevant conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or

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remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Franco,Charlie	Quality Assurance Inspector
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Reviewed By:	Cochran,Jim	QA Reviewer
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