

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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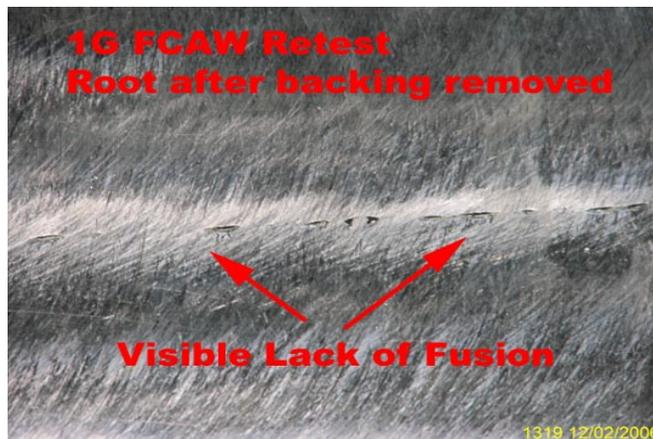
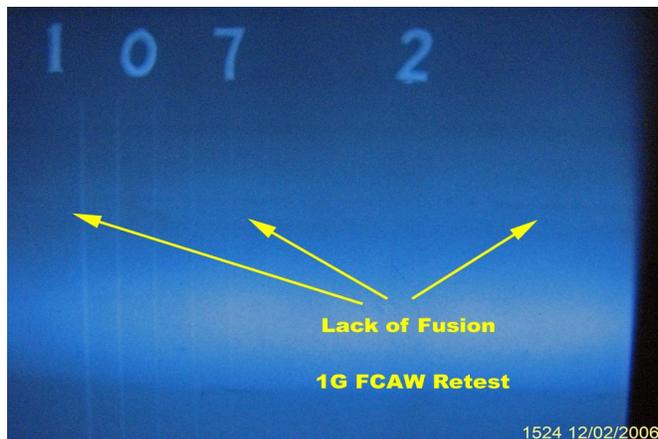
Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000068**Date Inspected:** 02-Dec-2006**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Liu Liu**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:** N/A**Summary of Items Observed:**

Office of Structural Materials Quality Assurance Inspector (QA) David McClary observed quality control functions related to procedure qualification (PQR) testing at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Item	Description	WBS	Dwg No.	Status
1	1G FCAW PQR #2 RT			Rejected
	The QA Inspector reviewed the Radiographic Testing (RT) film for 1G (flat) Flux Cored Arc Welding (FCAW) Procedure Qualification (PQR) identified as HP-2006107-1. The QA Inspector observed what appears to be lack of fusion at the root. ZPMC Quality Control (QC) thinks the indication is actually undercutting of the backing bar previously observed on another FCAW PQR. ZPMC machined off the backing. After the backing was machined off ZPMC performed RT testing again, which still showed lack of fusion at the root.			

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2 1G GMAW PQR #2 Welded

The QA Inspector observed welding of a Procedure Qualification (PQR) test plate identified as HP-2006119-1 (retest).

The test was conducted using Gas Metal Arc Welding (GMAW), Supertech SM-70, electrode in the 1G (flat) position to AWS D1.5, Section 5.13 (Production Procedure). The QA Inspector observed ZPMC Quality Control (QC) recording the essential variable (amps, volts, travel speed) for each pass and randomly verified the parameters using a Fluke® amperage / voltage meter and a stopwatch. The welding appeared to comply with the contract documents. Lot Number B60-027-06 was assigned for tracking purposes. See TL-6032 for additional details.



## Summary of Conversations:

The QA Inspector spoke ZPMC Quality Control (QC) director Mr. Liu Liu regarding the indications on the RT film of the 1G FCAW PQR. Mr. Liu Liu felt the indications were due to undercut of the backing as observed on a previous FCAW PQR. The QA Inspector agreed to allow ZPMC to remove the backing and RT again to confirm. After the backing was removed there was visible lack of fusion. ZPMC had already RTd the plate again and stated the film was acceptable. When QA review the new film the indications were still present. Mr. Liu Liu stated that indications would go away if they ground on the root more. QA informed Mr. Liu Liu that this was a different situation than on the previous PQR. The previous PQR had undercut in the backing, this PQR has obvious lack of fusion at the root which is cause for reject. Mr. Liu Liu stated they would perform another 1G FCAW PQR on Monday.

## Comments

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

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<b>Inspected By:</b>	McClary,David	Quality Assurance Inspector
<b>Reviewed By:</b>	Lowry,Patrick	QA Reviewer

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