

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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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-001136**Date Inspected:** 26-Nov-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:** Lu Jian Ping**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:** Tower Mock-up and OBG**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Item Description	WBS	Dwg No.	Status
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## 1 Floor Beams SPCM Tack Welding

The QA inspector observed ZPMC setting up the welding machine before starting the tack welding operations on a Seismic Performance Critical Member (SPCM) with the shielded metal arc welding with 4.0 diameter brand name TL-508 electrode using the Welding Procedure Specification WPS-B-P-2211-B-U2 as shown on the photograph below. The QA inspector had a conversation with ZPMC representative Lay Tao. The QA inspector asked Mr. Lay Tao if the electrodes (TL-508) that ZPMC were going to use were transported, delivered and stored in hermetically sealed containers. Mr. Lay Tao informed to the QA inspector that he did not know at this time. Mr. Lay Tao and the QA inspector went to the electrode storage and verified that the welding consumable that ZPMC was going to use were not storage in hermetically sealed containers. The QA inspector asked Mr. Lay Tao if ZPMC had already used these electrodes to perform tack welding operations on another locations. After Mr. Lay Tao inquired to the ZPMC welding supervisors on the Bay 7 shop, Mr. Lay Tao said to the QA inspector that ZPMC had already tack welded two plates with the TL-508 electrodes. The floor beams joints designations FB026-02-080 and FB26-01-080 as shown on the photographs below.

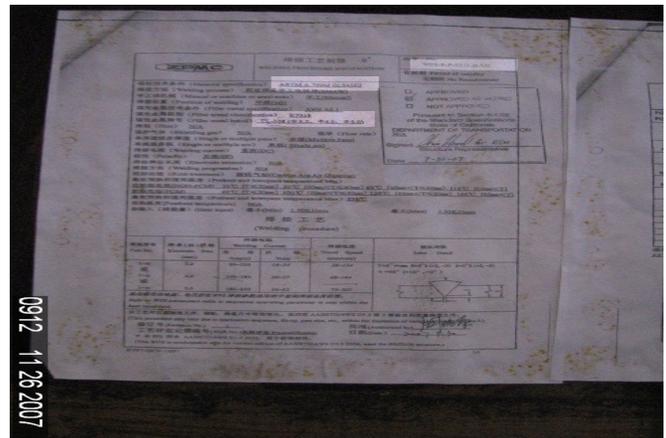
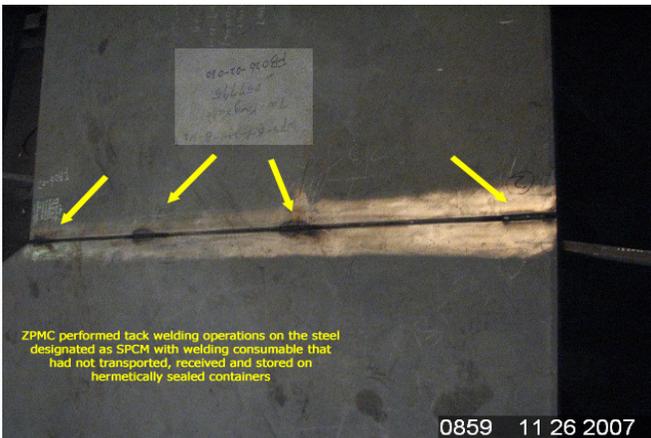
The QA inspector had a conversation with the Senior Task Leader Mr. Dave McClary. The QA inspector informed Mr. Dave McClary that ZPMC had welded SPCM steel with welding consumables that were not in compliance with the contract documents. The QA inspector had a conversation at bay 7 with ABF representatives Peter Ferguson and Dave

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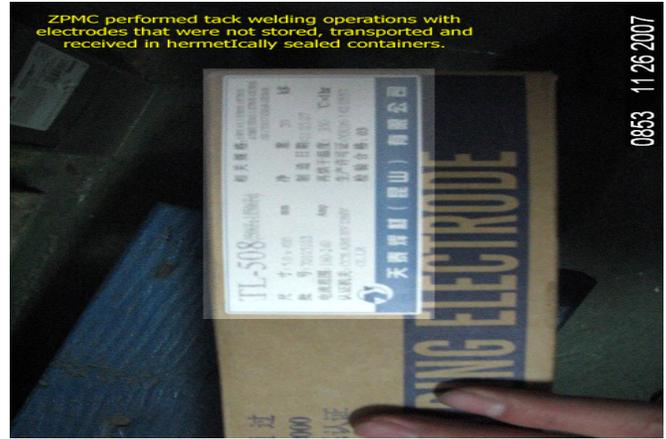
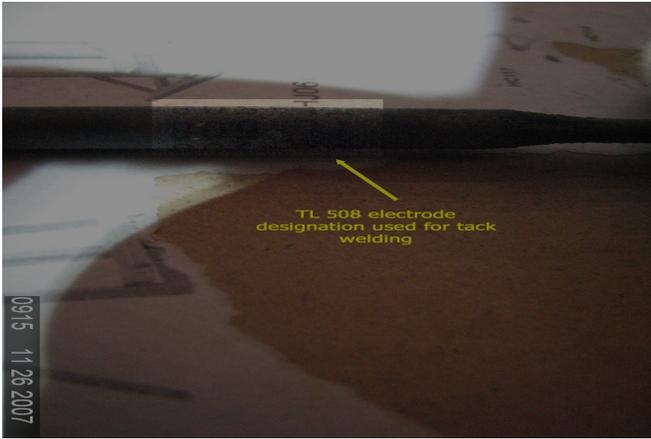
Smith. The QA inspector brought to the attention of ABF representatives that ZPMC tack welded SPCM material with electrodes that were not transported, delivered and stored in hermetically sealed containers. The QA inspector added that ZPMC had other electrodes with AWS designation E-7018-1 TL-506 that ZPMC could use for tack welding SPCM material.

ZPMC representative, ABF representatives and the QA inspector went to the ZPMC electrode storage. ABF representative agreed that ZPMC was using electrodes(TL-508) that were transported, delivered and had stored the electrode directly on carton boxes in lieu of hermetically sealed containers. ABF representatives said that the tack welds were going to be removed and the tacks would be rewelded. The QA inspector had a conversation with Task Leader Jimmy Cochran. The QA inspector brought to the attention of the resolution of ABF representatives. The photos below shows the electrode use and the locations were ZPMC performed tack welding operations.



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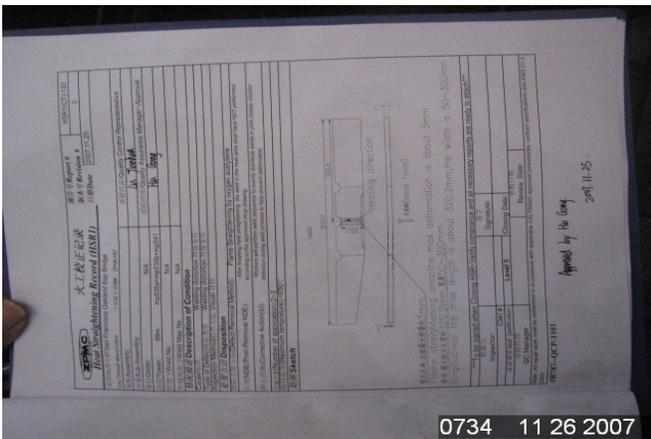
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2 Tower Mock-up 89 M Heat straightening

The QA inspector observed ZPMC performing heat straightening operation on the longitudinal stiffeners from the skin panel D. ZPMC was applying heat by the weld area while ZPMC set a 5.5 Tons at the other side. ZPMC was heat straightening at the junction of the plate mp535a and 535b, weld joint # 16. The QA inspector arrived when ZPMC was completing the heat straightening operations at approximately 0734 hours. The QA inspector touch the steel on other longitudinal stiffener and found that the longitudinal stiffener was warm even though the atmosphere temperature was approximately below 50 degrees Fahrenheit temperature. The QA inspector asked to ZPMC supervisor on the shop, what time ZPMC had performed the heat straightening operations because the steel was still warm. ZPMC said that ZPMC did not heat straightened the steel. ZPMC just removed the moisture of the steel before tack welding. The QA inspector had a conversation with the Caltrans Task Leader Jimmy Cochran. The QA inspector informed Mr. Jimmy Cochran that ZPMC was performing heat straightening operations on the longitudinal stiffener that was not per the Heat straightening request and that it was questionable when ZPMC started the heat straightening operations.

Note: Caltrans did not have any coverage at the third shift because ZPMC canceled it.



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## Summary of Conversations:

As noted above.

## 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 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>	Acuna,Alfredo	Quality Assurance Inspector
<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer

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