

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-000622**Date Inspected:** 14-Sep-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:** Tower Mock-up 77 M**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication of the Mock-up 77 meter elevation and ZPMC ultrasonic test (UT) demonstration scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

UT Demonstration

ZPMC scheduled a demonstration that will display that a sound weld could be achieved in compliance with the contract documents at a intersection of two different complete joint penetration (CJP) groove welds. The CJP weld intersection welded by ZPMC replicated a box girder connection. See digital photograph below of this intersecting CJP groove weld demonstration.

The UT demonstration was held at the ZPMC steel shop # 5, third bay at 0900 hours. ABF representative Peter Ferguson, Caltrans Senior Level III John Kinsey, Task Leaders Jimmy Cochran and Robert Cuellar, and the QA inspector were present during the demonstration. The QA inspector observed UT technician ASNT level II Li Li Ming performing UT examination to the test plate. After ZPMC completed the demonstration, Caltrans representatives noted the following discrepancies:

1. ZPMC did not perform the required lamination scan.
2. ZPMC used scanning levels lower than the required on AWS D1.5 table 6.3 tensile stress (18 dB in lieu of 25 dB).
3. ZPMC did not have the last revision of the ZPMC approved ultrasonic testing procedure available. ZPMC UT Procedure on site was dated 4/29/07.
4. ZPMC did not have a rejection acceptance criteria table 6.3 AWS D1.5 2002 available at the demonstration site.

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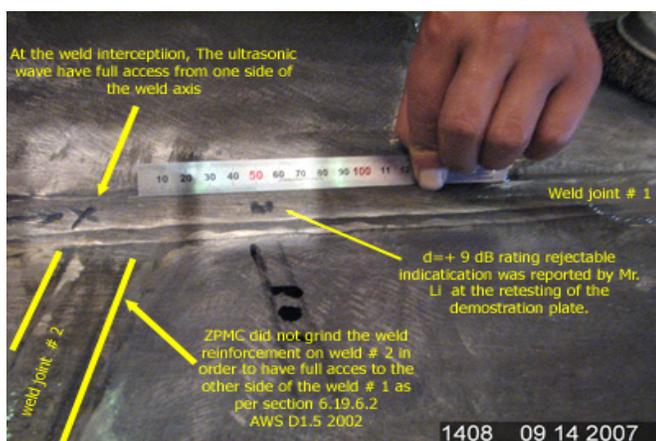
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5.ZPMC did not have access to both sides of the X-X weld axis at the weld intersection in accordance with 6.19.6.2.

6.ZPMC was not observed verifying the index point on the IIW block in accordance with AWS D1.5.

The QA inspector brought the listed discrepancies to the attention of ABF representative Mr. Pete Ferguson. Mr. Pete Ferguson relayed to ZPMC and Caltrans representatives that ZPMC needed to comply with the contract documents. ZPMC rescheduled another UT demonstration on this date.

At 1330 hours, the QA inspector witnessed a second UT demonstration performed by Mr. Li. The QA inspector observed that Mr. Li appeared to follow the ZPMC UT procedure. However, ZPMC did not grind both sides of the X-X axis to have full access to the weld intersection as shown on the digital photograph below. Also, the QA inspector observed that Mr. Li found a rejectable indication that was not recorded or detected on the earlier test. The QA inspector had a conversation with Mr. Ferguson. The QA inspector brought it to the attention of Mr. Pete Ferguson that ZPMC appeared to comply with the contract documents with the exception that the weld intersection did not have full accessibility on both sides of the weld axis as required on contract documents. Included below are digital pictures of these observations.



Item	Description	WBS	Dwg No.	Status
1	<p>Tower Mock-up 77 Meter Elevation Skin panel B, stiffener mp10</p> <p>The QA inspector had a conversation with ZPMC QA Inspector Shen Xue Jun. The QA inspector requested the documentation for the heat straightening performed at the stiffener mp10, skin panel B. Mr. Shen provided the heat straightening report HSR1 (CT)-65. After reviewing ZPMC's reports the QA inspector observed that ZPMC performed heat straightening operations that exceeded the 3 in 1000 ratio without Engineer approval at the 70 mm thick longitudinal stiffener plate mp10, MA3 subassembly Skin panel B, Tower Mock-up 77 meters elevation. The actual correction made by thermal straightening was approximately 2 in 386 measured at the free end of the stiffener which exceeded the allowable heat straightening deformation performed on a member greater than 16 mm thick without Engineer approval. The QA inspector brought this discrepancy to the attention of the Assistant Structures Material representative Mr. Ady Velasco that the skin B, stiffener mp10 was heat straightened without Engineer approval. Mr. Ady Velasco relayed to the QA inspector that the QA inspector needed to issue a non conformance report to address this discrepancy.</p> <p>Included below are digital pictures of the ZPMC's Heat Straightening Records for the observed condition.</p>		MUSA-MA3	NCR issue

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ZPMC 美国物产/物产钢板平整度大工校正报告记录卡 # 787-QCR-202-1022

The report of steel plate heat straightening process checking

工程名称: 787-787 项目: MUSA-MA3 规格: B200x1200x2
 图号: A707-S07-2 校正部位: 06100604A 校正日期: 2007.07.13
 校正位置: 787 校正方法: 火焰校正 校正设备: 火焰校正器

校正前平整度: 2.5mm

加热区	加热温度	加热时间	冷却速度	冷却时间
1	150	20	10	10
2	150	20	10	10
3	150	20	10	10
4	150	20	10	10
5	150	20	10	10

校正前平整度 Flattness checking before heat straightening (mm)

位置	平整度
A	2.5
E	2.5

校正后平整度 Flattness checking after heat straightening (mm)

位置	平整度
A	0.5
E	0.5

大工校正时间 Total time: (1/2) 小时 Hours

校正员 (Inspector): Jeyangjun 日期 (Date): 2007.07.13

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校正前平整度: 2.5mm

校正后平整度: 0.5mm

校正员 (Inspector): Jeyangjun 日期 (Date): 2007.07.13

2 Tower Mock-up 77 Skin plate A and E.

The QA inspector had a conversation with Senior Task Leader Dave McClary. Mr McClary relayed to the QA inspector that a non conformance report needed to be issued because ZPMC found after UT examination at the skin panel A and E rejectable indications that exceeded 10 % of the cumulative length of any weld.

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.

Inspected By: Acuna, Alfredo

Quality Assurance Inspector

Reviewed By: Cuellar, Robert

QA Reviewer