

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-000169**Date Inspected:** 12-May-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Huang Wei**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:**

The CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the welding qualification testing pertinent for the welding qualification record PQR HP200779 scheduled for this project. ZPMC, welder operator Zhu Haiping was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-3114 for the PQR identified as HP200779 (Fillet welds test). Base metal was designated as HPS-485W/Z25 (Heat # 06103146N), fracture critical test. ZPMC followed AWS 5.10 fillet weld WPS qualification using the shielded metal arc welding (SMAW) process in the horizontal (2F) position with the 4.0 mm diameter E9018M-H4R electrode. The QA Inspector verified amperages, voltages, travel speeds, preheat and heat interpass temperatures. The QA inspectors recorded welding parameters on two sides for a total of 3 passes for the multiple beads test and a single pass test on the other side. The QA inspectors observed that the welding parameters taken by ZPMC QA inspector Huang Wei appeared to be accurate and in a general compliance with the contract documents. The QA inspector performed final visual inspection to the test coupon after completion. The QA inspector observed that welds appeared to be in general compliance with the contract documents. ZPMC QA (CWI) Huang Wei witnessed the testing and performed visual weld inspections. The PQR HP200779 was completed on this date. The QA inspector assigned the lot # B71-025-007 for this test.

The QA inspector was present for the welding qualification testing pertinent for the welding qualification record PQR HP200781 scheduled for this project. ZPMC, welder operator Zhu Haiping was observed by the QA Inspector performing welding operations following the preliminary welding procedure specification PWPS-B-T-3112 for the PQR identified as HP200781 (Fillet welds test). Base metal was designated as HPS-485W/Z25 (Heat # 06103146N), fracture critical test. ZPMC followed AWS 5.10 fillet weld WPS qualification using the shielded metal arc welding (SMAW) process in the overhead (4F) position with the 4.0 mm diameter E9018M-H4R electrode. The QA Inspector verified amperages, voltages, travel speeds, preheat and heat

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interpass temperatures. The QA inspectors recorded welding parameters on two sides for a total of 3 passes for the multiple beads test and a single pass test on the other side. The QA inspectors observed that the welding parameters taken by ZPMC QA inspector Huang Wei appeared to be accurate and in a general compliance with the contract documents. The QA inspector performed final visual inspection to the test coupon after completion. The QA inspector observed that welds appeared to be in general compliance with the contract documents. ZPMC QA (CWI) Huang Wei witnessed the testing and performed visual weld inspections. The PQR HP200779 was completed on this date. The QA inspector assigned the lot # B71-026-007 for this test. The digital photographs below show the test coupons (multipass side) for the PQR HP200779 (right side) and PQR HP200781(left side).



Summary of Conversations:

Mr. Huang presented to the QA inspector a preliminary WPS-B-T-3114 for the HPS 485W material. The QA inspector observed that the minimum heat input listed in the PWPS was 1.19 KJ/mm in lieu with 1.5 KJ/mm as per special provisions. The QA inspector brought to Mr. Huang attention that the minimum heat input listed in the PWPS was 1.19 KJ/mm in lieu with 1.5 KJ/mm as per special provisions. After, Mr. Huang confirmed with ZPMC technical department. Mr. Huang agreed that the minimum heat input have to be increased to 1.5 KJ/mm as per special provisions. ZPMC corrected heat input and welding parameters accordingly.

The QA inspector brought to Mr. Huang attention that after corrected the heat input to 1.5 KJ/mm minimum as per special provisions the range of qualification for production welding appeared to be narrow 1.5 thru 1.87 KJ/mm.

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:	McClary,David	QA Reviewer
