

**DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF ENGINEERING SERVICES  
 Office of Structural Materials  
 Quality Assurance and Source Inspection



Bay Area Branch  
 690 Walnut Ave. St. 150  
 Vallejo, CA 94592-1133  
 (707) 649-5453  
 (707) 649-5493

Contract #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
 File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

**Location:** Changxing Island, Shanghai, PRC

**Report No:** NCR-000352

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 03-Aug-2009

**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

**NCR #:** ZPMC-0326

### Type of problem:

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> West Tower
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> West Tower, Lift 4, Skin C	

**Reference Description:** Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds

### Description of Non-Conformance:

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.



### Applicable reference:

Welding Procedure Specification WPS-B-T-3212-TC-U5b-1 specifies a minimum preheat of 180 degrees Celcius.

**Who discovered the problem:** Dilip Chakrabarti

**Name of individual from Contractor notified:** Wong Jiong Hua

**Time and method of notification:** 8-3-09, 01:00; Verbal

**Name of Caltrans Engineer notified:** Ken Lee

**Time and method of notification:** 8-3-09, 10:30; Verbal

---

---

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

---

---

**QC Inspector's Name:** Fu Wei Min

**Was QC Inspector aware of the problem:** Yes No

**Contractor's proposal to correct the problem:**

**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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

---

---

**Inspected By:** Sinevod,Serge

ASMR

---

---

**Reviewed By:** Wahbeh,Mazen

SMR



**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
 333 Burma Road  
 Oakland CA 94607  
 Tel: 510-808-4618 Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

**To:** AMERICAN BRIDGE/FLUOR, A JV  
 375 BURMA ROAD  
 OAKLAND CA 95607

**Date:** 05-Aug-2009

**Contract No:** 04-0120F4  
 04-SF-80-13.2 / 13.9

**Dear:** Mr. Charles Kanapicki  
**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Document No:** 05.03.06-000311

**Subject:** NCR No. ZPMC-0326

**Reference Description:** Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

**Material Location:** Tower **Lift:** 04

**Remarks:**

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celsius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.

**Action Required and/or Action Taken:**

Propose a resolution for this systematic non-conformance including documentation that the welds placed are in compliance with the contract requirements. In addition to addressing Production’s failure to perform the required preheat of the material, address the failure of Quality Control to identify the inadequate preheat. Provide documentation of the steps/ actions taken by Production and Quality Control to prevent future occurrences. Also detail what steps/ actions are being taken by ABFJV to address the quality control failures of ABFJV’s fabricator/ ZPMC.

**Transmitted by:** Ken Lee Transportation Engineer

**Attachments:** ZPMC-0326

**cc:** Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000311

**Subject:** NCR No. ZPMC-0326

**Dated:** 14-Aug-2009

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000296 **Rev:** 00

---

### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC has provided a response identifying timelines of occurrence of this NCR. ZPMC requests closure of this NCR.

ZPMC has provided a response identifying timelines of occurrence of this NCR. ZPMC requests closure of this NCR.

### Submitted by:

**Attachment(s):** ABF-NPR-000296R00;

---

### Caltrans' comments:

**Status:** AAP

**Date:** 21-Aug-2009

The response is acceptable, but the Non-Conformance is not closed.

Please provide documentation that the weld in question acceptable. The Department will review the Contractor's proposal to close Non-Conformance ZPMC-0326 at that time.

**Submitted by:** Wright, Doug

**Date:** 21-Aug-2009

**Attachment(s):**



No. T-048

## LETTER OF RESPONSE

**TO:** American Bridge/Flour JV

**DATE:** 2009-8-10

**REGARDING:** NCR-000352, ZPMC-0326

ZPMC received a NCR it mentioned that During in-process visual inspection, QA Dilip Chakrabarti observed that welder#053916 was performing SMAW on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved welding procedure specification WPS-B-T-3212-TC-U5b-1.

About this situation at that evening It is the truth that when CT people check the preheat temperature is not enough ,but at that time our welder didn't weld. When our welder ready to weld the preheat temperature is enough.

So ZPMC hope CT people close this NCR.

**ATTACHMENT:**

NCR-00352(ZPMC-0326)

*Li Xinyang*

*09. 8. 10*



**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
333 Burma Road  
Oakland CA 94607  
Tel: 510-808-4618 Fax:

### NON-CONFORMANCE REPORT TRANSMITTAL

**To:** AMERICAN BRIDGE/FLUOR, A JV  
375 BURMA ROAD  
OAKLAND CA 95607

**Date:** 05-Aug-2009

**Contract No:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Dear:** Mr. Charles Kanapicki  
**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Document No:** 05.03.06-000311

**Subject:** NCR No. ZPMC-0326

**Reference Description:** Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

**Material Location:** Tower

**Lift:** 04

**Remarks:**

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celsius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.

**Action Required and/or Action Taken:**

Propose a resolution for this systematic non-conformance including documentation that the welds placed are in compliance with the contract requirements. In addition to addressing Production's failure to perform the required preheat of the material, address the failure of Quality Control to identify the inadequate preheat. Provide documentation of the steps/ actions taken by Production and Quality Control to prevent future occurrences. Also detail what steps/ actions are being taken by ABFJV to address the quality control failures of ABFJV's fabricator/ ZPMC.

**Transmitted by:** Ken Lee Transportation Engineer

**Attachments:** ZPMC-0326

**cc:** Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

**File:** 05.03.06

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection

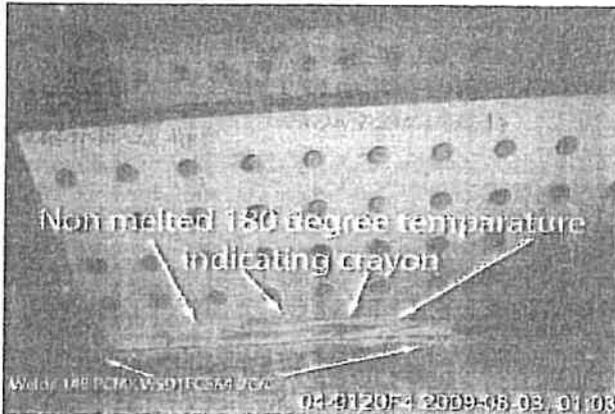


Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4  
Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
File #: 69.25B

**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, PRC**Report No:** NCR-000352**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 03-Aug-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0326**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** West TowerProcedural  **Procedural**  **Description:** West Tower, Lift 4, Skin C**Reference Description:** Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds**Description of Non-Conformance:**

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.

**Applicable reference:**

Welding Procedure Specification WPS-B-T-3212-TC-U5b-1 specifies a minimum preheat of 180 degrees Celcius.

**Who discovered the problem:** Dilip Chakrabarti**Name of individual from Contractor notified:** Wong Jiong Hua**Time and method of notification:** 8-3-09, 01:00; Verbal**Name of Caltrans Engineer notified:** Ken Lee**Time and method of notification:** 8-3-09, 10:30; Verbal

---

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

---

**QC Inspector's Name:** Fu Wei Min

**Was QC Inspector aware of the problem:**  Yes  No

**Contractor's proposal to correct the problem:**

**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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

---

**Inspected By:** Sinevod,Serge

ASMR

**Reviewed By:** Wahbeh,Mazen

SMR

---

## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000311

**Subject:** NCR No. ZPMC-0326

**Dated:** 15-Dec-2009

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000296 Rev: 01

---

### Contractor's Proposed Resolution:

**Reference Resolution:** Attached is the QC inspector's in process inspection paperwork which verifies that the required pre heat was maintained during welding. Based on this ZPMC requests closure of this NCR.

At the time the pre heat temperature was tested by the inspector the sub assembly was not at the proper pre heat temperature so ZPMC did not weld at that time. ZPMC later preheated the sub assembly to the proper temperature and welded it. Attached is the QC inspector's in process inspection paperwork which verifies that the required pre heat was maintained during welding. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000296R01;

---

### Caltrans' comments:

**Status:** REJ

**Date:** 20-Dec-2009

In its transmittal letter for this NCR, the Department specifically pointed out that welder #053916 was performing Shield Metal Arc Welding (SMAW) without proper preheat. However, ZPMC's response states that the referenced welder was not welding. It is difficult to resolve this issue after months have gone by. The Department recommends that in the future any disputes/ protests should be immediately brought up to the task leader's attention so that conflicts such as this could be prevented. However, in order to close this NCR, the Department would like to see the evidence of acceptability. Please provide NDT results for this weld.

**Submitted by:** Lee, Ken

**Attachment(s):**

**Date:** 20-Dec-2009



No. T-101

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2009-12-15**

**REGARDING: NCR-000352, ZPMC-0326**

ZPMC received a NCR it mentioned that During in-process visual inspection, QA Dilip Chakrabarti observed that welder#053916 was performing SMAW on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved welding procedure specification WPS-B-T-3212-TC-U5b-1.

About this situation at that evening It is the truth that when CT people check the preheat temperature is not enough ,but at that time our welder didn't weld. When our welder ready to weld the preheat temperature is enough.

So ZPMC hope CT people close this NCR.

\

**ATTACHMENT:**

NCR-00352(ZPMC-0326)

CONTINUOUS VISUAL INSPECTION REPORT

Li Xinyang

09. 12. 15

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge

333 Burma Road  
Oakland CA 94607  
Tel: 510-808-4618 Fax:

*Billings*

NON-CONFORMANCE REPORT TRANSMITTAL

To: AMERICAN BRIDGE/FLUOR, A JV  
 375 BURMA ROAD  
 OAKLAND CA 95607

Date: 05-Aug-2009

Contract No: 04-0120F4

Job Name: SAS Superstructure

Document No: 05.03.06-000311

Subject: NCR No. ZPMC-0326

Attention: Mr. Thomas Nilsson  
 Project/Fabrication Manager

Dear: Mr. Charles Kanapicki

Reference Description: Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

Material Location: Tower

Lift: 04

Remarks:

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celsius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.

Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance including documentation that the welds placed are in compliance with the contract requirements. In addition to addressing Production's failure to perform the required preheat of the material, address the failure of Quality Control to identify the inadequate preheat. Provide documentation of the steps/ actions taken by Production and Quality Control to prevent future occurrences. Also detail what steps/ actions are being taken by ABFJV to address the quality control failures of ABFJV's fabricator/ ZPMC.

Transmitted by: Ken Lee  
 Transportation Engineer

Attachments: ZPMC-0326

cc: Rick Morrow, Gary Pursell, Mark Woods, Doug Coe  
 File: 05.03.06

DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES  
Office of Structural Materials  
Quality Assurance and Source Inspection

Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4  
Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

Location: Changxing Island, Shanghai, PRC

Report No: NCR-000352

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 03-Aug-2009

Submitting Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

NCR #: ZPMC-0326

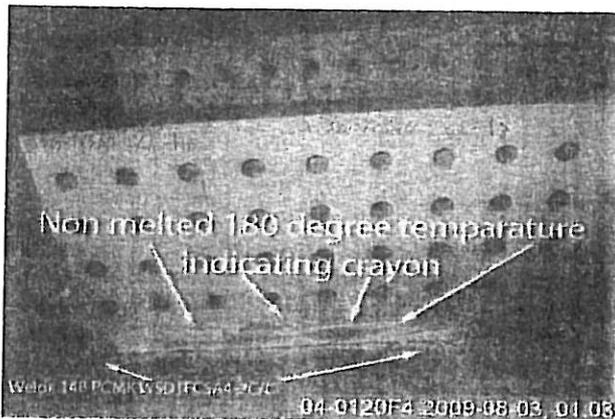
### Type of problem:

Welding  Concrete  Other   
Welding  Curing  Procedural  Bridge No: 34-0006  
Joint fit-up  Coating  Other  Component: West Tower  
Procedural  Procedural  Description: West Tower, Lift 4, Skin C

Reference Description: Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds

### Description of Non-Conformance:

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.



### Applicable reference:

Welding Procedure Specification WPS-B-T-3212-TC-U5b-1 specifies a minimum preheat of 180 degrees Celcius.

Who discovered the problem: Dilip Chakrabarti

Name of individual from Contractor notified: Wong Jiong Hua

Time and method of notification: 8-3-09, 01:00; Verbal

Name of Caltrans Engineer notified: Ken Lee

Time and method of notification: 8-3-09, 10:30; Verbal

---

## QUALITY ASSURANCE --- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

---

QC Inspector's Name: Fu Wei Min

Was QC Inspector aware of the problem:  Yes  No

Contractor's proposal to correct the problem:

**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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

---

Inspected By:	Sinevod,Serge	ASMR
Reviewed By:	Wahbeh,Mazen	SMR

---

19545  
 1500 C 面板 + 丝从何筋!



CONTINUOUS VISUAL  
 INSPECTION REPORT  
 焊缝目检报告

WELDING AREA  
 焊接地点

Checking Time: 检查时间:	17:20			17:25		
Weld No.: 焊缝编号:	WSD1-FCSA4-2B/C-14B			WSD1-FCSA4-2C/C-23A		
Welder ID No.: 焊工编号:	049099			040611		
WPS No.: WPS编号:	WPS-B-T-3212-Tc-45b-1			WPS-B-T-3212-Tc-45b-1		
Weld Process: 焊接方法:	SMAW			SMAW		
Position (F,H,V): 焊接位置:	2F			2F		
Member ID No.: 构件编号:	西面C面板+丝从何筋"123"			西面C面板+丝从何筋"121"		
Base Metal & Grade: 母材金属级别:	485x485			485x485		
Thickness: 厚度:	60x90			60x90		
Preheat Temperature: 预热温度:	187°C			185°C		
Volts: 电压:	24.5			25.6		
Amps: 电流:	265			270		
Travel Speed: 焊接速度:	146			148		
Polarity (EN/EP): 极性:	2P			2P		
Weld Metal: 填充金属:	E9018M-H4R			E9018M-H4R		
Electrode: 焊条/焊丝:	E9018M-MR C48			E9018M-MR C48		
Fillet Size: 角焊缝尺寸:	N/A			N/A		
Inspector: 检验员签字:	[Signature]			[Signature]		
Date: 日期:	09.08.02			09.08.02		
Acceptable (Yes/No): 是否接受:	ACC			ACC		

100%  
 100%

100%  
 100%

## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000311

**Subject:** NCR No. ZPMC-0326

**Dated:** 28-Jun-2010

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000296 **Rev:** 02

---

### Contractor's Proposed Resolution:

**Reference Resolution:** Per the Department's previous comments, ZPMC is providing the NDT reports to show that the welds are acceptable. Based on that, ZPMC requests closure of this NCR.

Per the Department's previous comments, ZPMC is providing the NDT reports to show that the welds are acceptable. Based on that, ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000296R02;

---

### Caltrans' comments:

**Status:** CLO

**Date:** 28-Jun-2010

The documentation received is sufficient and the Department concurs that Non-Conformance ZPMC-0326 is closed.

**Submitted by:** Rizzardo, Gina

**Attachment(s):**

**Date:** 28-Jun-2010



No. T-146

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2010-06-28**

**REGARDING: NCR-000352, ZPMC-0326**

ZPMC received a NCR it mentioned that During in-process visual inspection, QA Dilip Chakrabarti observed that welder#053916 was performing SMAW on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved welding procedure specification WPS-B-T-3212-TC-U5b-1.

About this situation at that evening It is the truth that when CT people check the plate, the preheat temperature is not enough ,but at that time our welder didn't weld. Our welder got ready to weld until the preheat temperature is enough.

Anyway, to show the weld sound well, here attached the NDT report.

So ZPMC hope CT can take a review and close this NCR.

**ATTACHMENT:**

NCR-00352(ZPMC-0326)

T787-UT-2087R2

T787-MT-9762

*Zhao Jie neng*  
2010-06-28



DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge  
333 Burma Road  
Oakland CA 94607  
Tel: 510-808-4618 Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

**To:** AMERICAN BRIDGE/FLUOR, A JV  
375 BURMA ROAD  
OAKLAND CA 95607

**Date:** 05-Aug-2009

**Contract No:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Dear:** Mr. Charles Kanapicki  
**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Document No:** 05.03.06-000311

**Subject:** NCR No. ZPMC-0326

**Reference Description:** Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

**Material Location:** Tower **Lift:** 04

### Remarks:

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celsius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.

### Action Required and/or Action Taken:

Propose a resolution for this systematic non-conformance including documentation that the welds placed are in compliance with the contract requirements. In addition to addressing Production's failure to perform the required preheat of the material, address the failure of Quality Control to identify the inadequate preheat. Provide documentation of the steps/ actions taken by Production and Quality Control to prevent future occurrences. Also detail what steps/ actions are being taken by ABFJV to address the quality control failures of ABFJV's fabricator/ ZPMC.

**Transmitted by:** Ken Lee Transportation Engineer

**Attachments:** ZPMC-0326

**cc:** Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

**File:** 05.03.06

---

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

---

QC Inspector's Name: Fu Wei Min

Was QC Inspector aware of the problem:  Yes  No

Contractor's proposal to correct the problem:

**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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

---

Inspected By: Sinevod,Serge

ASMR

Reviewed By: Wahbeh,Mazen

SMR

---

**DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF ENGINEERING SERVICES  
 Office of Structural Materials  
 Quality Assurance and Source Inspection



Bay Area Branch  
 690 Walnut Ave. St. 150  
 Vallejo, CA 94592-1133  
 (707) 649-5453  
 (707) 649-5493

Contract #: 04-0120F4  
 Cty: SF/ALA Rte: 80 PM: 13.2/13.9  
 File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

**Location:** Changxing Island, Shanghai, PRC

**Report No:** NCR-000352

**Prime Contractor:** American Bridge/Fluor Enterprises, a JV

**Date:** 03-Aug-2009

**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

**NCR #:** ZPMC-0326

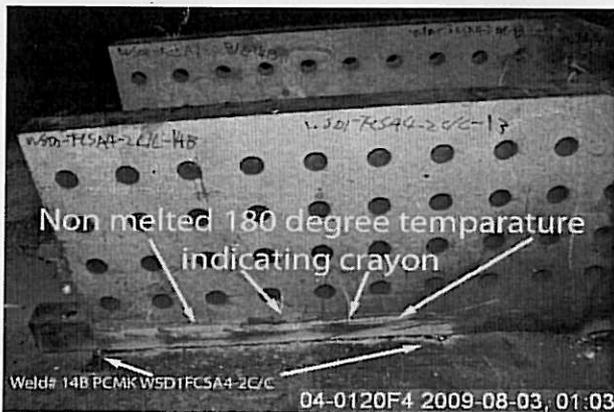
### Type of problem:

Welding  Concrete  Other   
 Welding  Curing  Procedural  **Bridge No:** 34-0006  
 Joint fit-up  Coating  Other  **Component:** West Tower  
 Procedural  Procedural  **Description:** West Tower, Lift 4, Skin C

**Reference Description:** Inadequate preheat on West Tower, Lift 4, Skin C longitudinal stiffener welds

### Description of Non-Conformance:

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.



### Applicable reference:

Welding Procedure Specification WPS-B-T-3212-TC-U5b-1 specifies a minimum preheat of 180 degrees Celcius.

**Who discovered the problem:** Dilip Chakrabarti

**Name of individual from Contractor notified:** Wong Jiong Hua

**Time and method of notification:** 8-3-09, 01:00; Verbal

**Name of Caltrans Engineer notified:** Ken Lee

**Time and method of notification:** 8-3-09, 10:30; Verbal



# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-9762      DATE日期 2009.08.20      PAGE OF页码 1/1      Revision No: 0

PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用户: CALTRANS	
DRAWING NO. 图号: WSD1-FCSA4-2C/C TOWER(W) FOURTH LIFTING SKIN C		CALTRANS CONTRACT NO.: 加州工程编号: 04-0120F4	
REFERENCING CODE 参考规范编码 AWS D1.5-2002	ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002	PROCEDURE NO. 程序编号 ZPQC-MT-01	CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</sup> , 2009
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 PARKER	MODEL NO. 样式编号 B310S	SERIAL NO. 连续编号 5620 5395 5617
MAGNETIZING METHOD 磁化方法	Continuous magnetic yoke 磁轭式连续法	CURRENT 电流	AC
PARTICLE TYPE 磁粉类型	Dry magnet powder 干磁粉	YOKE SPACING 磁轭间距	70~150mm
MATERIAL TO BE EXAMINED 检测材料	<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造	Material & thickness 母材, 厚度	A709M-345T2-Z/A709M-HPS-485T2-Z 70/60/90mm
WELDING PROCESS 焊接方法	FCAW SMAW	TYPE OF JOINT 焊缝类型	70/60/90mm

WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度			
WSD1-FCSA4-2C/C-1A				ACC.		100%MT
WSD1-FCSA4-2C/C-1B				ACC.		100%MT
WSD1-FCSA4-2C/C-14A				ACC.		100%MT
WSD1-FCSA4-2C/C-14B				ACC.		100%MT
WSD1-FCSA4-2C/C-15A				ACC.		100%MT
WSD1-FCSA4-2C/C-15B				ACC.		100%MT
WSD1-FCSA4-2C/C-28A				ACC.		100%MT
WSD1-FCSA4-2C/C-28B				ACC.		100%MT
BLANK						

EXAMINED BY 主探 <i>Jin Bing</i> 09.28.20	REVIEWED BY 审核 <i>Cai Jianjun</i> 09.28.20
LEVEL - II SIGN 签名 / DATE日期 <i>Li Jianhua</i> 09.28.20	LEVEL-II SIGN / DATE日期 用户CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



# REPORT OF ULTRASONIC EXAMINATION

## UT探伤报告

REPORT NO. 报告编号 T787-UT-2087R2      DATE 2009.08.21      PAGE 1 OF 1      Revision No: 0

PROJECT NO.: 工程编号 ZP06-787      CONTRACTOR: CALTRANS

ITEMS NAME: FOURTH LIFTING TOWER(W) SKIN C AND STIFFENER C1      DRAWING NO.: WSD1-FCSA4-2B/C,2C/C      CALTRANS CONTRACT NO.: 04-0120F4  
 部件名称      图号      加州工程编号

REFERENCING CODE 参考规范      ACCEPTANCE STANDARD 接受标准      PROCEDURE NO. 程序编号  
 AWS D1.5-2002      AWS D1.5-2002(Table 6.4)      ZPQC-UT-01

WELDING PROCESS 焊接方法      JOINT TYPE 焊缝类型      CALIBRATION DUE DATE 仪器校正有效期  
 FCAW SMAW      T-JOINT      Dec. 28<sup>ST</sup>, 2009

EQUIPMENT 设备      MANUFACTURER 制造商      MODEL NO. 样式编号      SERIAL NO. 序列编号  
 UT SCOPE      PANAMETRICS      EPOCH-4B      071565311, 061488510, 061495811, 070152011,

CALIBRATION BLOCK 试块      COUPLANT 耦合剂      MATERIAL/THICKNESS 材料厚度  
 AWS IIV BLOCK TYPE II      C.M.C      A709M-345T2-Z/A709M-HPS-485WT2-Z      70/60/90mm

### TRANSDUCER 探头

MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸	MANUFACTURER 制造商	ANGLE 角度	FREQUENCY 频率	SIZE 尺寸
Changchao	70°	2.5MHz	18×18mm	Changchao	60°	2.5MHz	18×18mm
Changchao	0°	2.5MHz	20mm	Changchao	45°	2.5MHz	18×18mm
Reference Level 参考灵敏度						20dB	

Base metal inspected per AWS D1.5-2002 Section 6.19.5      0° UT OK.

WELD IDENTIFICATION 焊缝部件编号	INDICATION NO. 指示号	PROBE ANGLE 探测角度	FROM FACE 检测面	LEG (次数)	DECIBELS分贝				DISCONTINUITY 不连续性					Discontinuity Evaluation 缺陷估计	Remark 备注
					Indication Level	Reference Level	Attenuation Factor	Indication Rating	LOCATION OF DISCONTINUITY 不连续位置(mm)						
					a	b	c	d	Length 长度	Sound Path 声程	Depth from Surface 距表面深度	From'X 距X	From'Y 距Y		
WSD1-FCSA4-2C/C-1A/B	1R2	70												ACC.	100%
	2R1	45												ACC.	100%
	3R1	45												ACC.	100%
	4R1	70												ACC.	100%
WSD1-FCSA4-2C/C-14A/B	1R2	60												ACC.	100%
	2R1	60												ACC.	100%

AFTER T-WR1963, T-CWR194REV1

BLANK

EXAMINED BY 主探 <i>Dai Jeng sheng</i>	REVIEWED BY 审核 <i>Xu Longgang</i>
LEVEL - II SIGN / DATE <i>09.8.21</i>	LEVEL - II SIGN / DATE <i>2009.8.21</i>
质量经理 / QCM <i>Lu Jianhua</i>	用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, PRC**Report No:** NCS-000300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 23-Sep-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0326**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b>	

**Date the Non-Conformance Report was written:** 03-Aug-2009**Description of Non-Conformance:**

During in-process visual inspection, QA observed that welder #053916 was performing Shield Metal Arc Welding (SMAW) on weld joint WSD1-FCSA4-2C/C-14B without proper preheat. The recorded temperature of the adjacent base material was less than the 180 degrees Celcius required by approved Welding Procedure Specification WPS-B-T-3212-TC-U5b-1.

**Contractor's proposal to correct the problem:**

ZPMC stated that pre-heat will be monitored more closely.

**Corrective action taken:**

The affected weld has been verified with NDT and subsequently green tagged. ABF QCM has informed ZPMC QC to educate the persons performing the pre-heat of the WPS requirements to pre-heat based on material thickness and that tack welding has the same requirements as the balance of the welding. ABF QCM has explained the consequences of hydrogen embrittlement and that thicker materials should be heated from the opposite side to ensure through thickness heat distribution.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?** Yes No**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 Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

**Inspected By:** Sinevod, Serge

Quality Assurance Inspector

**Reviewed By:** Wahbeh, Mazen

QA Reviewer