

**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  
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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-000448

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

**Date:** 17-Oct-2009

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

**NCR #:** ZPMC-0421

### 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> South Tower
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> South Tower, Lift 2	

**Reference Description:** No preheat on South Tower, Lift 2, 53m Diaphragm to Bracket weld

### Description of Non-Conformance:

During in-process visual inspection of South Tower, Lift 2, 53 m diaphragm to support platform bracket welds, QA observed ZPMC personnel performing tack welding without preheating the base metal. The Welding Procedure Specification (WPS) used requires a minimum preheat of 65 degrees C.



### Applicable reference:

AWS D1.5-2002, Section 3.3.7 - "Tack welds shall be subject to the same quality requirements as the final welds..."

Welding Procedure Specification WPS-B-P-2112 requires a minimum preheat of 65 degrees C.

**Who discovered the problem:** Baskar Govindarajan

**Name of individual from Contractor notified:** Mr. Kim

**Time and method of notification:** 10/17/2009, 9:15; Verbal

**Name of Caltrans Engineer notified:** Scott Kennedy

**Time and method of notification:** 10/19/2009, 7:00; Verbal

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**QC Inspector's Name:**        Zou Liu Hai

**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.

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<b>Inspected By:</b>	Sinevod,Serge	ASMR
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<b>Reviewed By:</b>	Wahbeh,Mazen	SMR
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**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:** 19-Oct-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:** 05.03.06-000410

**Subject:** NCR No. ZPMC-0421

**Reference Description:** No preheat on South Tower, Lift 2, 53m Diaphragm to Bracket weld

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:** 02

### Remarks:

During in-process visual inspection of South Tower, Lift 2, 53 m diaphragm to support platform bracket welds, QA observed ZPMC personnel performing tack welding without preheating the base metal. The Welding Procedure Specification (WPS) used requires a minimum preheat of 65 degrees C.

### Action Required and/or Action Taken:

Propose a resolution for this 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 lack of 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-0421

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

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000410

**Subject:** NCR No. ZPMC-0421

**Dated:** 23-Oct-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000408 Rev: 00

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### Contractor's Proposed Resolution:

**Reference Resolution:** ZPMC QA department has discussed the lack of preheat while tack welding with the Production department to avoid future occurrences.

ZPMC QA department has discussed the lack of preheat while tack welding with the Production department to avoid future occurrences. When NDT documentation is available ZPMC will submit it to show the soundness of the weld. ZPMC requests approval of this proposed resolution with action pending.

### Submitted by:

**Attachment(s):** ABF-NPR-000408R00

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### Caltrans' comments:

**Status:** REJ

**Date:** 27-Oct-2009

The proposal is not acceptable. Please address the failure of QC to identify the lack of preheat and steps taken to prevent the future occurrences. The Department will not consider closure of this NCR (ZPMC-421) until NDT documentation is submitted and reviewed.

**Submitted by:** Lee, Ken

**Date:** 27-Oct-2009

**Attachment(s):** NPR CT Comments

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000410

**Subject:** NCR No. ZPMC-0421

**Dated:** 01-Dec-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000408 Rev: 01

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**Contractor's Proposed Resolution:**

**Reference Resolution:** In this case the tacks were removed, the area preheated and welded again. Attached is the NDT documentation showing the weld is sound. Based on this ZPMC requests closure of this NCR.

ZPMC acknowledges the NCR and has discussed the issue with the foreman to ensure he understands the importance of oversight and control of preheating. The same topic was discussed with the QC inspector. In this case the tacks were removed, the area preheated and welded again. Attached is the NDT documentation showing the weld is sound. Based on this ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000408R01;

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**Caltrans' comments:**

**Status:** AAP

**Date:** 11-Dec-2009

The repair document is acceptable. However, it did not address the failure of Quality Control to identify the lack of preheat. In addition, please also address what steps/ actions are being taken by ABFJV to address the quality control failure of ABFJV's fabricator, ZPMC.

**Submitted by:** Lee, Ken

**Attachment(s):**

**Date:** 11-Dec-2009



No. T-096

## LETTER OF RESPONSE

TO: American Bridge/Flour JV

DATE: 2009-11-30

REGARDING: NCR-000448(ZPMC-0421)

ZPMC received NCR-000448(ZPMC-0421), it mentioned that QA observed ZPMC personnel performing tack welding without preheating the base metal on South Tower, Lift 2, 53m diaphragm to support platform bracket weld.

ZPMC had already acknowledged this problem when CT inspector reminded it. ZPMC inculcated the foreman to enhance the management and control of preheating, and it must be checked by QC before welding in compliance with proper. As a result, the weld was and preheated and welded again according to the WPS under the witness of both ZPMC and AB/F site inspectors, finally the weld was accepted and green tagged by CT. Here attached the NDT report to show the weld is sound.

So ZPMC hope Caltrans could take a review and close this NCR.

ATTACHMENT:

NCR-000448(ZPMC-0421)

T787-MT-6793

*Zhang Jia di*  
*2009.11.30*



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:** 19-Oct-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:** 05.03.06-000410

**Subject:** NCR No. ZPMC-0421

**Reference Description:** No preheat on South Tower, Lift 2, 53m Diaphragm to Bracket weld

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:** 02

**Remarks:**

During in-process visual inspection of South Tower, Lift 2, 53 m diaphragm to support platform bracket welds, QA observed ZPMC personnel performing tack welding without preheating the base metal. The Welding Procedure Specification (WPS) used requires a minimum preheat of 65 degrees C.

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

Propose a resolution for this 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 lack of 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-0421

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

**File:** 05.03.06

**DEPARTMENT OF TRANSPORTATION**  
 DIVISION OF ENGINEERING SERVICES  
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Contract #: 04-0120F4Cty: SF/ALARte: 80 PM: 13.2/13.9File #: 69.25B

## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

**Location:** Changxing Island, Shanghai, PRC**Report No:** NCR-000448**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 17-Oct-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0421**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** South TowerProcedural  Procedural  **Description:** South Tower, Lift 2**Reference Description:** No preheat on South Tower, Lift 2, 53m Diaphragm to Bracket weld**Description of Non-Conformance:**

During in-process visual inspection of South Tower, Lift 2, 53 m diaphragm to support platform bracket welds, QA observed ZPMC personnel performing tack welding without preheating the base metal. The Welding Procedure Specification (WPS) used requires a minimum preheat of 65 degrees C.

**Applicable reference:**

AWS D1.5-2002, Section 3.3.7 - "Tack welds shall be subject to the same quality requirements as the final welds..."

Welding Procedure Specification WPS-B-P-2112 requires a minimum preheat of 65 degrees C.

**Who discovered the problem:** Baskar Govindarajan**Name of individual from Contractor notified:** Mr. Kim**Time and method of notification:** 10/17/2009, 9:15; Verbal**Name of Caltrans Engineer notified:** Scott Kennedy**Time and method of notification:** 10/19/2009, 7:00; Verbal

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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QC Inspector's Name: Zou Liu Hai

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.

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Inspected By: Sinevod,Serge ASMR

Reviewed By: Wahbeh,Mazen SMR

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## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000410

**Subject:** NCR No. ZPMC-0421

**Dated:** 17-Dec-2009

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000408 **Rev:** 02

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### Contractor's Proposed Resolution:

**Reference Resolution:** ABFJV QCM is scheduling training classes with ZPMC's QA, QC and Production departments to reinforce the importance and requirement of preheating.

ZPMC's QC inspector did not note the lack of preheat in this case because he mistakenly believed that tack welds do not require the base metal to be preheated. ABFJV has discussed this with ZPMC QA who concur that per AWS D1.5 tack welds should have the same quality as production welds. This has been discussed and reinforced the ZPMC QC department and the inspector who observed this non conformance.

ABFJV has recognized that lack of preheat has been an area of concern so the ABFJV QCM is scheduling training classes with ZPMC's QA, QC and Production departments to reinforce the importance and requirement of preheating. Based on this information, ZPMC requests closure of this NCR.

**Submitted by:** Ishibashi, Joshua

**Attachment(s):** ABF-NPR-000408R02

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### Caltrans' comments:

**Status:** CLO

**Date:** 17-Dec-2009

The proposed resolution is acceptable. The Department concurs that Non-conformance ZPMC-0421 is closed.

**Submitted by:** Lee, Ken

**Attachment(s):**

**Date:** 17-Dec-2009

**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 #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, PRC**Report No:** NCS-000378**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 02-Dec-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0421**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:** 17-Oct-2009**Description of Non-Conformance:**

During in-process visual inspection of South Tower, Lift 2, 53 m diaphragm to support platform bracket welds, QA observed ZPMC personnel performing tack welding without preheating the base metal. The Welding Procedure Specification (WPS) used requires a minimum preheat of 65 degrees C.

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

Notify ZPMC to increase QC monitoring of interpass temperature.

**Corrective action taken:**

ZPMC has instructed the production personnel to improve the control of interpass temperature. Furthermore, NDT reports have been submitted indicating that the affected weld is sound.

**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