

**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 #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, PRC**Report No:** NCR-000074**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 17-Feb-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0072**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> Tower-89m Mockup
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	Fitting Lug to Diaphragm

**Description of Non-Conformance:**

While performing air carbon arc gouging ABF/ZPMC did not adhere to the approved Critical Weld Repair (CWR#39) procedure and AWS D1.5 (2002) when repairing a crack on the 89m mockup at weld joint MUB-MA21G/J-29. ZPMC performed air carbon arc gouging with a preheat temperature of lower than 65°C, the QA inspector verified this using a temperature indicating stick rated to melt 65°C which did not melt when applied to the weld area. The associated Critical Weld Repair #39 specifies a preheat of 65°C and AWS D1.5 (2002) section 12.17.6 (3) Repair Minimum Provisions states "The preheating temperature prior to air carbon arc gouging shall be described in the WPS. Preheat for gouging shall not be less than 65°C [150°F]."

Additionally, ABF/ZPMC did not maintain postweld heat temperature on the 89m mockup as specified in approved CWR #39 while repairing a crack at weld joint MUB-MA21G/J-29. As a result the temperature dropped below the minimum post weld temperature of 230°C, the QA inspector verified this using a temperature indicating stick rated to melt 230°C which did melt when applied to the weld area. ZPMC was not monitoring the postweld temperature range, 230°C thru 315°C, after the weld was deposited.

**Applicable reference:**

Special Provisions, Section 8-3.01, "Welding", Page 154, "...all repairs of cracks require prior approval of the Engineer.", Critical Weld Repair #39.

**Who discovered the problem:** Alfredo Acuna, Quality Assurance Inspector**Name of individual from Contractor notified:****Time and method of notification:****Name of Caltrans Engineer notified:** Ching Chao, Structure Representative**Time and method of notification:** 2/19/08, 0945; Verbal**QC Inspector's Name:** Li Xiu Yang, ZPMC Quality Control Inspector**Was QC Inspector aware of the problem:**

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Yes    No**

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

None at this time.

**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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**Inspected By:**    Wahbeh,Mazen

Quality Assurance Inspector

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**Reviewed By:**    Wahbeh,Mazen

QA Reviewer



**DEPARTMENT OF TRANSPORTATION**  
666 Feng Bin Road Room 708, Changxing Island  
Shanghai 201913 PR China  
Tel: 021-56856666 ext 207061 Fax:

## NON-CONFORMANCE REPORT TRANSMITTAL

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

**Date:** 21-Feb-2008

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

**Attention:** Dave Williams            Consultant

**Job Name:** SAS Superstructure

**Document No:** 05.03.06-000042

**Subject:** NCR No. ZPMC-0072

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

Non-Conformance with quality control procedures. Please take appropriate corrective action. Recurrence may require further administrative action.

Non-Conformance with quality control. Records indicate that this is a recurring issue and constitutes a systematic problem in quality control. Within fourteen (14) days, please submit a plan to correct the deficiency.

Material or workmanship is not in compliance with contract requirements.

**Enclosed please find the following items:**

**NCR No:** ZPMC-0072

**Remarks:**

Please see the attachment for details.

**Transmitted by:** Ching Chao

**cc:** Rick Morrow, Gary Pursell, Peter Siegenthaler, Mark Woods, Doug Coe, Jason Tom, Dave Williams, Contract Files, Kannu Balan, Chin

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

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

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000042

**Subject:** NCR No. ZPMC-0072

**Dated:** 24-Apr-2008

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

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000029 **Rev:** 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC will strengthen QC inspection of Critical Weld repairs to ensure per and post weld heat treatment  
Please see the attached response from ZPMC. ABF JV has reviewed and concurs with this response and considers this issue resolved.

**Submitted by:** Kanapicki, Charles  
**Attachment(s):** ABF-NPR-000029R00;

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**Caltrans' comments:**

**Status:** CLO  
**Date:** 25-Jun-2008

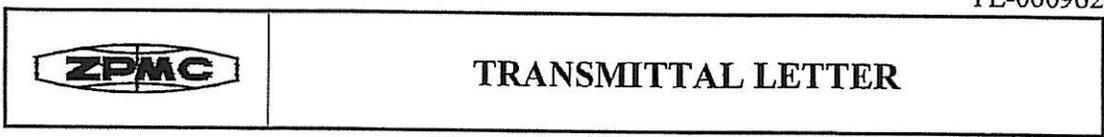
ZPMC has agreed to strengthen their monitoring of the weld repair process. Im proper post weld heat treatment, and lack of sufficient preheat while carbon arc gouging SP CM material, have no longer been issues. The Department concurs that Non-Conformance ZPMC-0072 is closed.

**Submitted by:** Wright, Doug  
**Attachment(s):**

**Date:** 25-Jun-2008

NCR A2

TL-000962



PROJECT: SAN FRANCISCO OAKLAND BAY BRIDGE

DATE: 03/27/2008

TO: RUBY/ ABFJV QA DEPARTMENT

FROM: ZPMC QA DEPARTMENT

SUBJECT: NCR(NCR-000074) FOR CLOSURE / ZPMC 72 *CHK 4/22/08*

SUBMITTED FOR YOUR APPROVAL AND SUBMITTAL TO CALTRANS.

ENCLOSED WITH THIS TRANSMITTAL IS ONE

- (1) COPY OF LETTER OF RESPONSE WITH NO. CT-0116 FOR CLOSURE.
- (2) COPY OF NCR WITH NUMBER NCR-000074. / ZPMC 72 *CHK 4/22/08*

PLEASE SIGN THIS TRANSMITTAL AND RETURN TO ME.

ACKNOWLEDGEMENT:

*Ruby Li*  
 \_\_\_\_\_  
 PLAN HOLDER

*3/27/08 16:00*  
 \_\_\_\_\_  
 DATE

\_\_\_\_\_  
 COMPANY

\_\_\_\_\_  
 PHONE NO.

PLAN NUMBER: N/A  
 #R787-QCP-102



No. CT-0116

## LETTER OF RESPONSE

DATE: 2008.03.27

To: AB/F Steve Lawton

From: Lu Yefei

Subject: Response to CT NCR-000074/*ZPMC 72* *CSK Af 22/08*

ZPMC has generated internal NCR-CT-023 in Response to CT NCR-000074, Regard that ZPMC didn't adhere to the approved the CWR(#39) procedure and AWS D1.5(2002) when repairing a crack on the 89m mockup at weld joint MUB-MA21G/J-29, and didn't maintain postweld heat temperature in the 89m mockup. ZPMC will strength the monitoring of the critical weld repairing, and contract with the fabricator to perform the preheat and post-heat treatment in time, and now the 89m is doing the strut plate welding test, and Skin B and Skin C strut plates have gouged, and this weld doesn't exist, and ZPMC suggests it will weld as according to the submitted strut plate welding.

Attached you will find a copy of ZPMC internal NCR-CT-023.

If further information is needed, Please contact me.

Sincerely

Lu Yefei

*Lu Yefei*

*2008.03.27*

*Received  
ABF C/m  
10 APRIL 08*



# Nonconformance Report

## 不符合项报告

Project Name: S.F.O.B.B 项目名称: 美国加州海湾大桥		NCR Number: NCR 编号: NCR-CT-023
Item: the CWR air carbon preheat temperature and post weld temperature are not enough 名称描述: 关键返修碳刨前预热与焊后后热温度不够	Item Number: 件号: P575 mp534a	Drawing: 图号: MUB-MA21G/J
Location: 89M Mock Up 位置: 89 米段	Date: 2008-03-04 日期: 2008-03-04	

**Description of Nonconformance: 不符合项状态描述:**  
 ZPMC did the 89m mock up CWR (#39) repair the preheat temperature before the air carbon and the post weld temperature are not enough according to the CWR procedure and AWS D 1.5 section 12.17.6(3). This situation was founded by the Caltrans inspector Alfredo Acuna.  
 根据关键返修工艺和 AWS D1.5 的 12.17.6(3)的要求, 加州检验员 alfredo 在现场发现, 89 米段进行 39 号关键焊缝返修时, 探刨前的预热和焊后的后热的温度没有达到返修工艺中的要求。

**Work By:** Xue Ya Chen **Prepared by:** Li Hu Yan **Reviewed by QCE:** Xu Jun 08.3.21  
 施工方: Xue Ya Chen 准备: Li Hu Yan 质量工程师批准: Xu Jun 08.3.21

Drawing Error     Material Defect     Fabrication Error     Other  
 图纸错误    材料缺陷    制作错误    其他原因

**Disposition:**     Use as is     Repair     Reject  
 处理措施:    回用    返修    拒收

**Recommendation:**  
 建议:  
 鉴于现在将此定位板探刨去除并重新装焊, 建议按照 ZPMC 后提交的 "定位板烧焊" 进行。  
 ZPMC has gouged the Skin B and Skin C strut plates, then assembles and welds again, ZPMC suggests it will weld as according to the submitted strut plate welding.

Prepared by: Li Ya Fei 2008.3.21    Approved by QCA: Hu Gong 2008.3.21  
 准备    质量经理批准

**Reason for Nonconformance:**

不符合原因:

未及时对关键焊缝作预热和后热处理

ZPMC didn't perform the CWR weld preheat and post-heat treatment in time.

**Prevention of Re-occurrence:**

预防措施:

1. 加强车间检验人员对关键焊缝返修的监控.

2. 及时联系施工人员对完成的焊缝进行预热和后热处理

1. Strengthen the monitoring of the critical weld repairing.

2. Contract with the fabricator to perform the preheat and post-heat treatment in time.

Approved by/批准: Lu Yefei 2008.3.21

Technical Justification for Use-As-Is/Repair:

Attachment

Non-attachment

回用或返修的技术依据:

附件

无附件

Reviewed /批准: \_\_\_\_\_

Verification:

Acceptable

Unacceptable

确认:

可接受

不可接受

Verified by QCI/质检确认: \_\_\_\_\_ Reviewed by QCA/质检主任审核: \_\_\_\_\_

#R787-QCP-1300



**DEPARTMENT OF TRANSPORTATION**

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Shanghai 201913 PR China  
Tel: 021-56856666 ext 207061 Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

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

Date: 21-Feb-2008

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

Attention: Dave Williams Consultant

Job Name: SAS Superstructure

Document No: 05.03.06-000042

Subject: NCR No. ZPMC-0072

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

- Non-Conformance with quality control procedures. Please take appropriate corrective action. Recurrence may require further administrative action.
- Non-Conformance with quality control. Records indicate that this is a recurring issue and constitutes a systematic problem in quality control. Within fourteen (14) days, please submit a plan to correct the deficiency.
- Material or workmanship is not in compliance with contract requirements.

Enclosed please find the following items:

NCR No: ZPMC-0072

**Remarks:**

Please see the attachment for details.

Transmitted by: Ching Chao

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Mark Woods, Doug Coe, Jason Tom, Dave Williams, Contract Files, Kannu Balan, C  
File: 05.03.06

02.02:15.04  
05.03.06-000042,NCT

Received  
NCT-000042 21 Feb 08 Page 1 of 1

**DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING SERVICES**Office of Structural Materials  
Quality Assurance and Source InspectionBay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT**

Location: Changxing Island, Shanghai, PRC

Report No: NCR-000074

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Date: 17-Feb-2008

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

NCR #: ZPMC-0072

**Type of problem:**

Welding  Concrete  Other   
 Welding  Curing  Procedural  Bridge No: ..34-0006  
 Joint-fit-up  Coating  Other  Component: Tower-89m Mockup  
 Procedural  Procedural  Descriptor: Fitting Lug to Diaphragm

**Description of Non-Conformance:**

While performing air carbon arc gouging ABF/ZPMC did not adhere to the approved Critical Weld Repair (CWR#39) procedure and AWS D1.5 (2002) when repairing a crack on the 89m mockup at weld joint MUB-MA21G/J-29. ZPMC performed air carbon arc gouging with a preheat temperature of lower than 65°C, the QA inspector verified this using a temperature indicating stick rated to melt 65°C which did not melt when applied to the weld area. The associated Critical Weld Repair #39 specifies a preheat of 65°C and AWS D1.5 (2002) section 12.17.6 (3) Repair Minimum Provisions states "The preheating temperature prior to air carbon arc gouging shall be described in the WPS. Preheat for gouging shall not be less than 65°C [150°F]."

Additionally, ABF/ZPMC did not maintain postweld heat temperature on the 89m mockup as specified in approved CWR #39 while repairing a crack at weld joint MUB-MA21G/J-29. As a result the temperature dropped below the minimum post weld temperature of 230°C, the QA inspector verified this using a temperature indicating stick rated to melt 230°C which did not melt when applied to the weld area. ZPMC was not monitoring the postweld temperature range, 230°C thru 315°C, after the weld was deposited.

**Applicable reference:**

Special Provisions, Section 8-3.01, "Welding", Page 154, "...all repairs of cracks require prior approval of the Engineer.", Critical Weld Repair #39.

Who discovered the problem: Alfredo Acuna, Quality Assurance Inspector

Name of individual from Contractor notified:

Time and method of notification:

Name of Caltrans Engineer notified: Ching Chao, Structure Representative

Time and method of notification: 2/19/08, 0945; Verbal

QC Inspector's Name: Li Xiu Yang, ZPMC Quality Control Inspector

Was QC Inspector aware of the problem:

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 2)

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Yes  No

Contractor's proposal to correct the problem:

None at this time.

Comments:

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Inspected By: Wahbeh, Mazen

Quality Assurance Inspector

Reviewed By: Wahbeh, Mazen

QA Reviewer

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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-000047**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 19-May-2008**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0072**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>Descriptor:</b>	

**Date the Non-Conformance Report was written:** 17-Feb-2008**Description of Non-Conformance:**

While performing air carbon arc gouging ABF/ZPMC did not adhere to the approved Critical Weld Repair (CWR#39) procedure and AWS D1.5 (2002) when repairing a crack on the 89m mockup at weld joint MUB-MA21G/J-29. ZPMC performed air carbon arc gouging with a preheat temperature of lower than 65°C, the QA inspector verified this using a temperature indicating stick rated to melt 65°C which did not melt when applied to the weld area. The associated Critical Weld Repair #39 specifies a preheat of 65°C and AWS D1.5 (2002) section 12.17.6 (3) Repair Minimum Provisions states "The preheating temperature prior to air carbon arc gouging shall be described in the WPS. Preheat for gouging shall not be less than 65°C [150°F]."

Additionally, ABF/ZPMC did not maintain postweld heat temperature on the 89m mockup as specified in approved CWR #39 while repairing a crack at weld joint MUB-MA21G/J-29. As a result the temperature dropped below the minimum post weld temperature of 230°C, the QA inspector verified this using a temperature indicating stick rated to melt 230°C which did melt when applied to the weld area. ZPMC was not monitoring the postweld temperature range, 230°C thru 315°C, after the weld was deposited.

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

ZPMC will increase the monitoring of critical weld repairing in accordance with ZPMC internal NCR-CT-023.

**Corrective action taken:**

ZPMC has issued internal NCR-CT-023 to emphasize the requirement for monitoring of critical weld repairing, but has not otherwise demonstrated any direct action to improve the situation. If the problem persists, then additional actions may be required.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?**

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Yes    No**

**Comments:**

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**Inspected By:**    McReynolds,Robert

Quality Assurance Inspector

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**Reviewed By:**    Wahbeh,Mazen

QA Reviewer