

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, P.R. China**Report No:** NCR-000844**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0806**Type of problem:**

Welding	Concrete	Other	
Welding	Curing	Procedural	Bridge No: 34-0006
Joint fit-up	Coating	Other	Component: LD3025A
Procedural	Procedural	Description:	

Reference Description: Heat straightening without Engineer's approval and exceeding maximum allowable temperature during heat working.

Description of Non-Conformance:

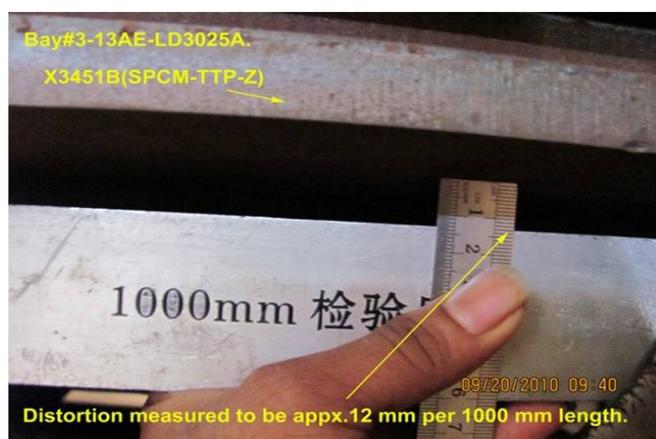
During Caltrans Quality Assurance in-process observations of the Longitudinal Diaphragm, LD3025A, fabrication, this Quality Assurance Inspector (QA) observed ZPMC personnel performing heat straightening work under the guidelines of an HSR1 when an HSR was required. Furthermore, the metal was heated above the maximum allowable temperature during heat straightening. Specific details pertaining to this incident are listed below:

- Material was heated to a bright red condition.
- This QA Inspector observed that a 760°C Tempilstik melted when struck against the heated area of the material. -A temperature indicating crayon, digital temperature measurement gauge, or other similar means of monitoring the temperature was not utilized by ZPMC Quality Control (QC) and the actual maximum attained temperature was not measured.
- The effected welds are identified as LD3025-001-083,084,177 and 178.
- These welds are Complete Joint Penetration (CJP) butt joints, joining Lifting Lug plates X3514F and X3514B (SPCM) to LD web plate X3451B (SPCM and TTP).
- The LD web plate material thickness is 18 mm.
- Distortion was measured to be approximately 12mm over a distance of 1000mm.
- ZPMC QC provided HSR1 identified as HSR1 7375 when asked for the recoding documents.
- The affected member is located in Sub assembly Bay#3.

For further information, please see the pictures below.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



Applicable reference:

Caltrans Special Provisions Section 8-3: "For material more than 16 mm, the Contractor shall not heat straighten members more than 3 in 1000 without prior approval of the Engineer".

AWS 1.5 2002 section 3.7.3 "Members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heat as approved by the Engineer. The temperature of the heated areas as measured by approved methods shall not exceed 600°C [1100°F] for quenched and tempered steel nor 650°C [1200°F] (a dull, red color) for other steels. The part to be heated for straightening shall be substantially free of stress and from external forces, except those stresses resulting from the mechanical straightening method used in conjunction with the application of heat."

Who discovered the problem: Surendra Prabhu

Name of individual from Contractor notified: Mr. Wang Wen Bin

Time and method of notification: 0830 hours, 09-20-2010, Verbal

Name of Caltrans Engineer notified: Ching Chow

Time and method of notification: 0700 hours, 09-22-2010, email

QC Inspector's Name: No

Was QC Inspector aware of the problem:

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

Yes No

Contractor's proposal to correct the problem:

N/A

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:	Simonis,Jim	QA Inspector
Reviewed By:	Wahbeh,Mazen	SMR



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

NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 22-Sep-2010

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: 05.03.06-000801

Subject: NCR No. ZPMC-0806

Reference Description: Heat straightening without Engineer's approval and exceeding maximum allowable temperature during heat working.

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: OBG **Lift:** 13

Remarks:

During Caltrans Quality Assurance in-process observations of the Longitudinal Diaphragm, LD3025A, fabrication, Caltrans Quality Assurance Inspector (QA) observed ZPMC personnel performing heat straightening work under the guidelines of an HSR1 when an HSR was required. Furthermore, the metal was heated above the maximum allowable temperature during heat straightening. Specific details pertaining to this incident are listed below:

- Material was heated to a bright red condition.
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- A temperature indicating crayon, digital temperature measurement gauge, or other similar means of monitoring the temperature was not utilized by ZPMC Quality Control (QC) and the actual maximum attained temperature was not measured.
- The effected welds are identified as LD3025-001-083,084,177 and 178.
- These welds are Complete Joint Penetration (CJP) butt joints, joining Lifting Lug plates X3514F and X3514B (SPCM) to LD web plate X3451B (SPCM and TTP).
- The LD web plate material thickness is 18 mm.
- Distortion was measured to be approximately 12mm over a distance of 1000mm.
- ZPMC QC provided HSR1 identified as HSR1 7375 when asked for the recoding documents.
- The affected member is located in Sub assembly Bay#3.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Laraine Woo Transportation Engineer
Attachments: ZPMC-0806

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao, Bill Casey
File: 05.03.06

NCR PROPOSED RESOLUTION

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

Attention: Siegenthaler, Peter
Resident Engineer

Ref: 05.03.06-000801

Subject: NCR No. ZPMC-0806

Dated: 12-Oct-2010

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

Job Name: SAS Superstructure

Document No.: ABF-NPR-000804 Rev: 00

Contractor's Proposed Resolution:

Reference Resolution: After heating, ZPMC performed NDT and is providing the result to show the material is acceptable. Based on this ZPMC requests closure of this NCR.

ZPMC acknowledges that this piece was overheated. In the future, work crews who perform overheating will be fined in order to pay for the overheated part. This financial penalty will be a deterrent to workers performing overheating. In this case, ZPMC conducted hardness testing of the heated area (Area 1-4) and an adjacent area unaffected by overheating (Area 5) to show that the heating did not adversely affect the material hardness. After heating, ZPMC performed NDT and is providing the result to show the material is acceptable. Based on this ZPMC requests closure of this NCR.

Submitted by: Ishibashi, Joshua

Attachment(s): ABF-NPR-000804R00;

Caltrans' comments:

Status: CLO

Date: 13-Oct-2010

The proposed resolution is acceptable. This NCR is considered closed.

Submitted by: Woo, Laraine

Date: 13-Oct-2010

Attachment(s):



No. B-901

LETTER OF RESPONSE

TO: American Bridge/Flour

DATE: 2010-10-11

REGARDING: NCR-000844(ZPMC-0806)

ZPMC has issued an internal NCR of this problem. ZPMC QA personnel have talked over this with the project manager, and an internal warning report was released to all the working shop after then to address this issue. ZPMC is providing the hardness test report and the NDT record to show the soundness of the over heated area. Based on this, please consider closure of this NCR.

ATTACHMENT:

NCR-000844(ZPMC-0806)

B787-UT-15540

B787-UT-15541

B787-MT-30068

HARDNESS TESTING RESULTS FOR ZPMC-0806

A handwritten signature in black ink, appearing to be 'J. W.' or similar, written in a cursive style.

10/11/2010



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

NON-CONFORMANCE REPORT TRANSMITTAL

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

Date: 22-Sep-2010

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

Dear: Mr. Charles Kanapicki
Attention: Mr. Thomas Nilsson Project/Fabrication Manager
Subject: NCR No. ZPMC-0806

Job Name: SAS Superstructure
Document No: 05.03.06-000801

Reference Description: Heat straightening without Engineer's approval and exceeding maximum allowable temperature during heat working.

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- The LD web plate material thickness is 18 mm.
- Distortion was measured to be approximately 12mm over a distance of 1000mm.
- ZPMC QC provided HSR1 identified as HSR1 7375 when asked for the recoding documents.
- The affected member is located in Sub assembly Bay#3.

Action Required and/or Action Taken:

Propose a resolution for the identified non-conformance with revised procedures to prevent future occurrences. A response for the resolution of this issue is expected within 7 days.

Transmitted by: Laraine Woo Transportation Engineer

Attachments: ZPMC-0806

NCT

(Continued Page 2 of 2)

cc: Rick Morrow, Gary Pursell, Peter Siegenthaler, Stanley Ku, Brian Boal, Jason Tom, Contract Files, Ching Chao, Bill Casey
File: 05.03.06

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Vallejo, CA 94592-1133

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(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, P.R. China**Report No:** NCR-000844**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 20-Sep-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0806**Type of problem:**

Welding **Concrete** **Other**
Welding **Curing** **Procedural** **Bridge No:** 34-0006
Joint fit-up **Coating** **Other** **Component:** LD3025A
Procedural **Procedural** **Description:**

Reference Description: Heat straightening without Engineer's approval and exceeding maximum allowable temperature during heat working.

Description of Non-Conformance:

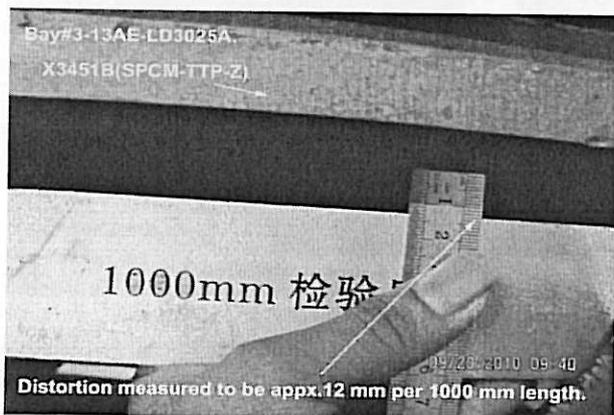
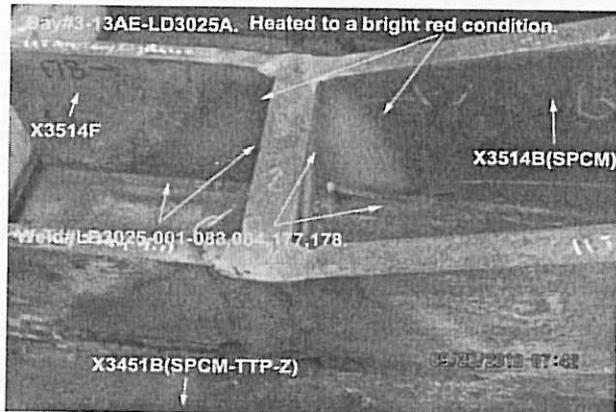
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- The LD web plate material thickness is 18 mm.
- Distortion was measured to be approximately 12mm over a distance of 1000mm.
- ZPMC QC provided HSR1 identified as HSR1 7375 when asked for the recoding documents.
- The affected member is located in Sub assembly Bay#3.

For further information, please see the pictures below.

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 2 of 3)



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Caltrans Special Provisions Section 8-3: "For material more than 16 mm, the Contractor shall not heat straighten members more than 3 in 1000 without prior approval of the Engineer".

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Who discovered the problem: Surendra Prabhu

Name of individual from Contractor notified: Mr. Wang Wen Bin

Time and method of notification: 0830 hours, 09-20-2010, Verbal

Name of Caltrans Engineer notified: Ching Chow

Time and method of notification: 0700 hours, 09-22-2010, email

QC Inspector's Name: No

Was QC Inspector aware of the problem:

QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

(Continued Page 3 of 3)

Yes No

Contractor's proposal to correct the problem:

N/A

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: Simonis,Jim

QA Inspector

Reviewed By: Wahbeh,Mazen

SMR



REPORT OF ULTRASONIC EXAMINATION

UT探伤报告

REPORT NO. 报告编号 B787-UT-15540 DATE 2010.10.06 PAGE 1 OF 2 Revision No: 0

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

ITEMS NAME: 13 SUSPENDER BRACKET DRAWING NO.: LD3025 CALTRANS CONTRACT NO.: 04-0120F4
 部件名称 图号 加州工程编号

REFERENCING CODE 参考规范 AWS D1.5-2002 ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002(Table 6.3) PROCEDURE NO. 程序编号 ZPQC-UT-01

WELDING PROCESS 焊接方法 FCAW JOINT TYPE 焊缝类型 T JOINT CALIBRATION DUE DATE 仪器校正有效期 Dec. 28ST, 2010

EQUIPMENT 设备 UT SCOPE MANUFACTURER 制造商 OLYMPUS MODEL NO. 样式编号 EPOCH-4B SERIAL NO. 序列编号 51392712

CALIBRATION BLOCK 试块 AWS IIW BLOCK TYPE II COUPLANT 耦合剂 C.M.C MATERIAL/THICKNESS 材料厚度 A709M-345F2/T2 -X 22/40/30/18mm

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
AMERICA	70°	2.25MHz	0.75×0.625 in				
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
LD3025-001-174		70					48								ACC.	100%
LD3025-001-074		70					48								ACC.	100%
LD3025-001-175		70					48								ACC.	100%
LD3025-001-176		70					48								ACC.	100%
LD3025-001-083		70					48								ACC.	100%
LD3025-001-178		70					48								ACC.	100%
LD3025-001-179		70					48								ACC.	100%
LD3025-001-180		70					48								ACC.	100%

EXAMINED BY 主探 Kuang Jian REVIEWED BY 审核 Tang Xingshan
 LEVEL - II SIGN / DATE 2010.10.06 LEVEL - II SIGN / DATE 2010.10.06

质量经理 / QCM 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 B787-UT-15541 DATE 2010.10.06 PAGE 1 OF 1 Revision No: 0

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

ITEMS NAME: 13 SUSPENDER BRACKET DRAWING NO.: LD3025 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 6.3) 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 T JOINT Dec. 28ST, 2010

EQUIPMENT 设备 MANUFACTURER 制造商 MODEL NO. 样式编号 SERIAL NO. 序列编号
 UT SCOPE OLYMPUS EPOCH-4B 51392712

CALIBRATION BLOCK 试块 COUPLANT 耦合剂 MATERIAL/THICKNESS 材料厚度
 AWS IIW BLOCK TYPE II C.M.C A709M-345F2/T2 -X 22/40/30/18mm

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
AMERICA	70°	2.25MHz	0.75×0.625 in				
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
LD3025-001-173		70					48								ACC.	100%
LD3025-001-177		70					48								ACC.	100%

AFTER HSR(B)-9375

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EXAMINED BY 主探 <i>Kuang Jian</i> LEVEL - II SIGN / DATE 20/10/06 质量经理 / QCM	REVIEWED BY 审核 <i>Tang Xingshan</i> LEVEL - II SIGN / DATE 20/10/06 用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-30068		DATE 日期 2010.10.06		PAGE OF 页码 5/9		Revision No: 0	
PROJECT NO. 工程编号: ZP06-787			CONTRACTOR: 用户: CALTRANS				
DRAWING NO. 图号: LD3025 13 LIFT			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 ST , 2010	
EQUIPMENT 设备 MT YOKE		MANUFACTURER 制造商 USA		MODEL NO. 样式编号 MODEL #ES-X		SERIAL NO. 连续编号 13995	
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 √ WELDING 焊接件 □ CASTING 铸件 □ FORGING 锻造		WELDING PROCESS 焊接方法 FCAW		TYPE OF JOINT 焊缝类型 T-JOINT		Material & thickness 母材, 厚度 A709M-345T2/F2-X 8/18/22/25/30/40 mm	
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				
LD3025-001-101				ACC.		100%MT	
LD3025-001-187				ACC.		100%MT	
LD3025-001-188				ACC.		100%MT	
LD3025-001-161				ACC.		100%MT	
LD3025-001-162				ACC.		100%MT	
LD3025-001-163				ACC.		100%MT	
LD3025-001-164				ACC.		100%MT	
LD3025-001-165				ACC.		100%MT	
LD3025-001-166				ACC.		100%MT	
LD3025-001-167				ACC.		100%MT	
LD3025-001-168				ACC.		100%MT	
LD3025-001-177				ACC.		100%MT	
LD3025-001-178				ACC.		100%MT	
LD3025-001-179				ACC.		100%MT	
LD3025-001-180				ACC.		100%MT	
EXAMINED BY 主探 Chu Ziqing <i>Chu Ziqing</i> 2010.10.06				REVIEWED BY 审核 <i>Sun Guoqing</i> 2010.10.06			
LEVEL - II SIGN 签名 / DATE 日期				LEVEL-II SIGN / DATE 日期			
质量经理 / QCM				用户 CUSTOMER			
签字 SIGN / 日期 DATE				签字 SIGN / 日期 DATE			



REPORT OF MAGNETIC PARTICLE EXAMINATION

磁粉检测报告

REPORT NO. 报告编号 B787-MT-30068		DATE日期 2010.10.06	PAGE OF页码 1/9	Revision No: 0
PROJECT NO. 工程编号: ZP06-787		CONTRACTOR: 用户: CALTRANS		
DRAWING NO. 图号: LD3025 13 LIFT		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 ST , 2010	
EQUIPMENT 设备 MT YOKE	MANUFACTURER 制造商 USA	MODEL NO. 样式编号 MODEL #ES-X	SERIAL NO. 连续编号 13995	
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/F2-X 8/18/22/25/30/40 mm	
WELDING PROCESS 焊接方法	FCAW	TYPE OF JOINT 焊缝类型	T-JOINT	

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			
LD3025-001-051				ACC.		100%MT
LD3025-001-052				ACC.		100%MT
LD3025-001-053				ACC.		100%MT
LD3025-001-058				ACC.		100%MT
LD3025-001-059				ACC.		100%MT
LD3025-001-060				ACC.		100%MT
LD3025-001-083				ACC.		100%MT
LD3025-001-084				ACC.		100%MT
LD3025-001-085				ACC.		100%MT
LD3025-001-090				ACC.		100%MT
LD3025-001-091				ACC.		100%MT
LD3025-001-092				ACC.		100%MT
LD3025-001-054				ACC.		100%MT
LD3025-001-055				ACC.		100%MT
LD3025-001-056				ACC.		100%MT

EXAMINED BY 主探 Chu Ziqing <i>Chu Ziqing</i> 2010.10.06	REVIEWED BY 审核 <i>San Gong ding</i> 2010.10.06
LEVEL - II SIGN 签名 / DATE日期	LEVEL-II SIGN / DATE日期
质量经理 / QCM	用户 CUSTOMER
签字 SIGN / 日期 DATE	签字 SIGN / 日期 DATE

HARDNESS TESTING RESULTS FOR ZPMC-0806

Area	Test ID					X3514F					Meets Requirement?
	A*	B*	C*	D*	E*	Average Value**	Corresponding Brinell Hardness Value***	Approximate Tensile Strength (ksi)***	Minimum Tensile Strength (ksi)****		
1	182	183	187	190	191	187	185	89	65	YES	
2	188	191	191	191	190	191	190	90	65	YES	
3	191	189	189	189	189	189	190	90	65	YES	
4	189	189	186	188	191	189	190	90	65	YES	
5	191	192	191	190	188	191	190	90	65	YES	

*All values are Brinell Hardness

**High and low values excluded when determining average value

*** Per Table 3 ASTM A370-07b

**** For Grade 50[345], per Table 1, ASTM A709/A709M-05

Area	Test ID					X3514B					Meets Requirement?
	A*	B*	C*	D*	E*	Average Value**	Corresponding Brinell Hardness Value***	Approximate Tensile Strength (ksi)***	Minimum Tensile Strength (ksi)****		
1	186	185	186	185	184	185	185	89	65	YES	
2	184	184	185	186	185	185	185	89	65	YES	
3	185	186	185	184	183	185	185	89	65	YES	
4	183	183	183	183	183	183	185	89	65	YES	
5	183	181	181	181	180	181	180	88	65	YES	

*All values are Brinell Hardness

**High and low values excluded when determining average value

*** Per Table 3 ASTM A370-07b

**** For Grade 50[345], per Table 1, ASTM A709/A709M-05

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
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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, P.R. China**Report No:** NCS-000776**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 13-Oct-2010**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0806**Type of problem:**

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

Date the Non-Conformance Report was written: 20-Sep-2010**Description of Non-Conformance:**

During Caltrans Quality Assurance in-process observations of the Longitudinal Diaphragm, LD3025A, fabrication, this Quality Assurance Inspector (QA) observed ZPMC personnel performing heat straightening work under the guidelines of an HSR1 when an HSR was required. Furthermore, the metal was heated above the maximum allowable temperature during heat straightening. Specific details pertaining to this incident are listed below:

- Material was heated to a bright red condition.
- This QA Inspector observed that a 760°C Tempilstik melted when struck against the heated area of the material. -A temperature indicating crayon, digital temperature measurement gauge, or other similar means of monitoring the temperature was not utilized by ZPMC Quality Control (QC) and the actual maximum attained temperature was not measured.
- The effected welds are identified as LD3025-001-083,084,177 and 178.
- These welds are Complete Joint Penetration (CJP) butt joints, joining Lifting Lug plates X3514F and X3514B (SPCM) to LD web plate X3451B (SPCM and TTP).
- The LD web plate material thickness is 18 mm.
- Distortion was measured to be approximately 12mm over a distance of 1000mm.
- ZPMC QC provided HSR1 identified as HSR1 7375 when asked for the recoding documents.
- The affected member is located in Sub assembly Bay#3.

Contractor's proposal to correct the problem:

"ZPMC acknowledges that this piece was overheated. In the future, work crews who perform overheating will be fined in order to pay for the overheated part. This financial penalty will be a deterrent to workers performing overheating. In this case, ZPMC conducted hardness testing of the heated area (Area 1-4) and an adjacent area unaffected by overheating (Area 5) to show that the heating did not adversely affect the material hardness. After heating, ZPMC performed NDT and is providing the result to show the material is acceptable."

Corrective action taken:

