

**(NAME OF COMPANY)  
QUALITY MANAGEMENT SYSTEM MANUAL**

**REVISION: 1**

**DATE: 2021/03/06**

**SECTION A PAGE: 1 OF 1**

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**NOTE: The edition no., revision no. and date shown in this guideline are for ABSA's records only. Each company should use their own appropriate edition no., revision no. and date.**

**SECTION A TITLE PAGE**

**QUALITY MANAGEMENT SYSTEM MANUAL  
FOR THE  
PERFORMANCE QUALIFICATION TESTING  
OF  
PRESSURE WELDERS AND MACHINE WELDING OPERATORS  
IN ACCORDANCE WITH  
ASME SECTION IX  
AND THE  
ALBERTA SAFETY CODES ACT AND REGULATIONS  
BY  
(NAME OF COMPANY)  
AT  
(PHYSICAL ADDRESS)  
AND AT FIELD SITES  
IN ALBERTA CONTROLLED FROM THIS LOCATION  
5<sup>TH</sup> Edition**

**CONTROLLED MANUAL NO. \_\_\_\_\_**

**REGISTRATION NO. AOQP- \_\_\_\_\_**

**ASSIGNED TO \_\_\_\_\_**

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**SECTION B COPY OF CURRENT CERTIFICATE OF AUTHORIZATION PERMIT**

WELDING EXAMINER PAPER 3 STUDY GUIDE: CANNOT BE BROUGHT INTO THE EXAM ROOM

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**SECTION C QUALITY MANAGEMENT SYSTEM MANUAL REGISTER**

**CONTROLLED COPIES (1-7)**

1. ABSA
2. ABSA (2<sup>nd</sup> Manual for Regional Office)
3. (Name of Company) - Approved Copy - Master
4. President (Name of Company)
5. General Manager (Name of Company)
6. Quality Control Manager (Name of Company)
7. Welding Examiner (Name of Company)

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**SECTION D SCOPE OF WORK**

- D.0 This section describes the procedures that will be used by (name of company) to conduct renewal performance qualification tests of Welders and Machine Welding Operators in accordance with the Alberta Safety Codes Act and Regulations and ASME Section IX.
- D.1 Welders/Machine Welding Operators shall be examined using welding procedures registered with ABSA in the following procedures:
- |            |      |               |
|------------|------|---------------|
| GMAW up to | mm ( | in) thickness |
| GTAW up to | mm ( | in) thickness |
| SMAW up to | mm ( | in) thickness |
| SAW up to  | mm ( | in) thickness |
- D.2 Welders/Machine Welding Operators must be qualified using guided bend tests or by radiographic examination. Radiographic examination must not be used for the GMAW short circuit process.
- D.3 (Option 1) (name of company) shall conduct performance qualification testing for our own employees only. (name of company) recognizes that when performance qualification cards are issued they are the property of the Welder/Machine Welding Operator and are valid if the Welder/Machine Welding Operator leaves the employment of (name of company).
- D.3 (Option 2) (name of company) shall conduct commercial performance qualification testing for (name of company) employees as well as qualified candidates not employed by (name of company).
- D.4 (name of company) shall subcontract all heat treatment and nondestructive examination.

**NOTE: Include Option 1 or 2 for D.3 above that applies to your organization.**

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**SECTION E STATEMENT OF AUTHORITY**

**NOTE: (TO BE ON COMPANY LETTERHEAD)**

This Quality Management System Manual defines the organization and system employed by (name of company) to ensure that all Welders/Machine Welding Operators performance qualification tests, conducted at shop and field sites are in accordance with the Alberta Safety Codes Act, Pressure Welders Regulation, and ASME Section IX.

This Quality Management System has my full support and shall be used for all Welders/Machine Welding Operators performance qualification tests conducted by (name of company).

The Quality Control Manager is hereby appointed to administer the Welders/Machine Welding Operators performance qualification testing program. The Quality Control Manager and Welding Examiners assigned to conduct the performance qualification tests and issue performance qualification cards, pursuant to the Alberta Pressure Welders Regulation, have the organizational freedom, authority and responsibility to identify problems, and to initiate and provide solutions to problems concerning Welders/Machine Welding Operators performance qualification tests.

Any questions that arise concerning the implementation of the program for conducting Welders/Machine Welding Operators performance qualification tests that cannot be resolved through the Quality Control Manager shall be brought to my attention for resolution without compromising the ASME Code, the Alberta Safety Codes Act and Regulations and/or this Quality Management System.

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Executive Management Signature

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Name

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Title

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Date

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**SECTION 2 REVISION SUMMARY**

Rev. No.	Date	Section	Page	Change	Quality Control Manager	ABSA Safety Codes Officer
0	2007/02/01	All	All	New 5 <sup>TH</sup> Edition Issued		
1	2021/03/06	All	All	Revised watermark		

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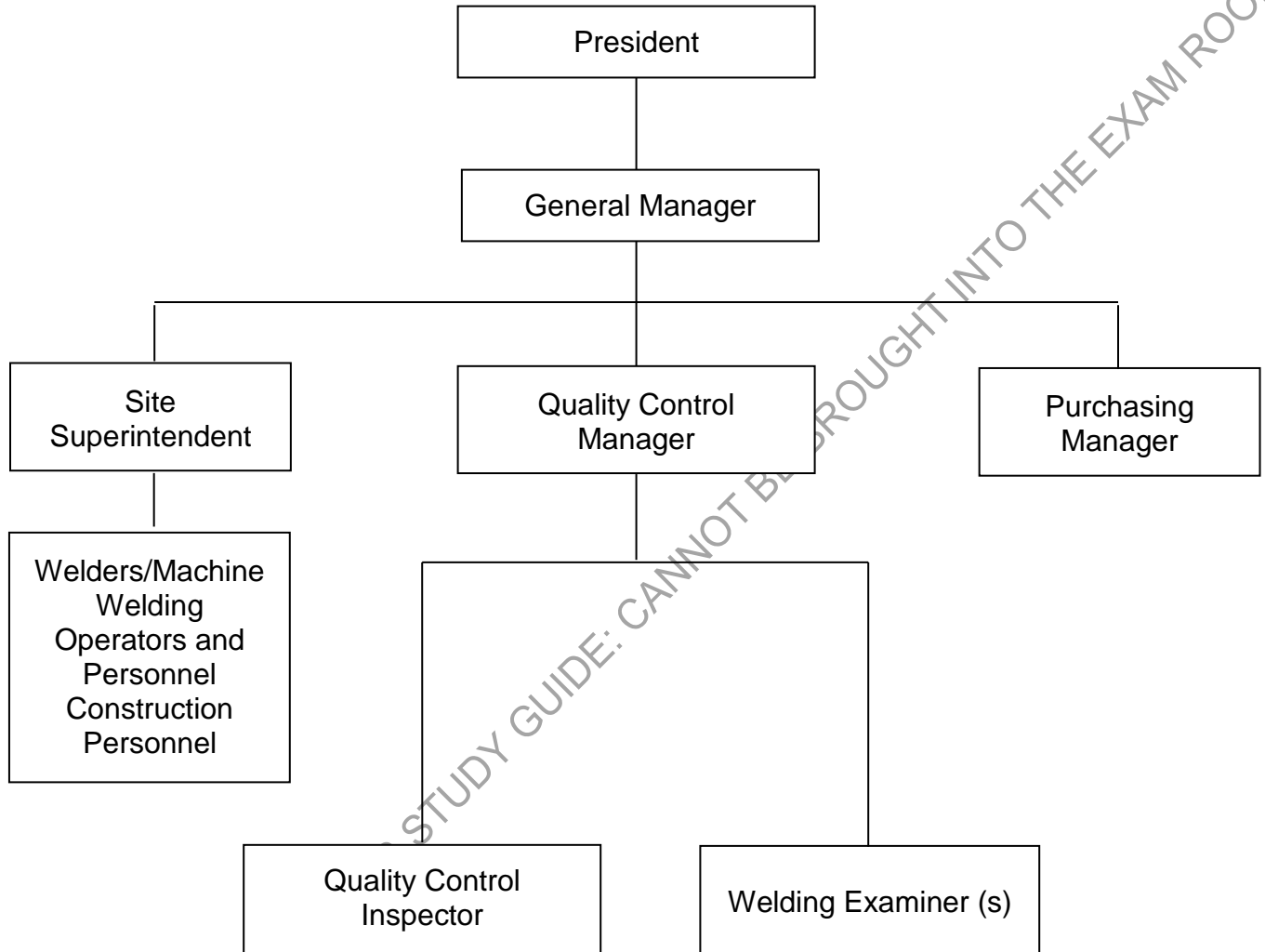
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**SECTION 3 ORGANIZATION CHART**



NOTE: More than one position may be held by one person



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**SECTION 4 DEFINITIONS**

- 4.0 **ABSA:** ABSA, the pressure equipment safety authority, is the regulatory organization delegated by the Province of Alberta to provide pressure equipment safety services under the Alberta Safety Codes Act and acts as the sole Jurisdiction/Regulatory Authority as defined in CSA B51 Code and the ASME Code.
- 4.1 **ABSA SAFETY CODES OFFICER (AUTHORIZED INSPECTOR):** A person appointed as a Safety Codes Officer for the purpose of administering the Alberta Safety Codes Act and Regulations (Pressure Equipment).
- 4.2 **ALBERTA SAFETY CODES ACT AND REGULATIONS (latest issues):**
- a) Province of Alberta Safety Codes Act
  - b) Pressure Equipment Safety Regulation
  - c) Pressure Welders Regulation
  - d) Administrative Items Regulation
  - e) Pressure Equipment Exemption Order
- 4.3 **ASME CODE: AMERICAN SOCIETY OF MECHANICAL ENGINEERS (latest edition and addenda)**
- a) Section I Power Boilers
  - b) Section II Part A Ferrous Material Specifications, Part B Nonferrous Material Specifications, Part C Specifications for Welding Rods, Electrodes and Filler Metals, Part D Properties - Materials
  - c) Section IV Heating Boilers
  - d) Section V Non-Destructive Examination
  - e) Section VIII Division 1 Rules for Construction of Pressure Vessels
  - f) Section IX Welding and Brazing Qualifications
- 4.4 **CGSB:** Canadian General Standards Board
- 4.5 **NONCONFORMITY:** Any condition which renders an item unacceptable or indeterminate for use because it does not comply with the ASME Code, the Alberta Safety Codes Act and Regulations or this Quality Management System Manual. Examples of nonconformities include physical defects, improper documentation, and loss of material identification.
- 4.6 **PQR:** Procedure Qualification Record. The document that records the welding data used to weld a test coupon and contains the test results of the tested specimens. Recorded variables normally fall within a small range of the actual variables that will be used in production welding.
- 4.7 **QUALITY CONTROL (QC) MANAGER:** An employee of (name of company) designated by the President to have the responsibility and authority to maintain a Quality Management System and to have the organizational freedom to recognize Quality Management System problems and to provide solutions to those problems.

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- 4.8 **QUALITY CONTROL (QC) INSPECTOR:** An employee of (name of company) designated by the Quality Control Manager to perform the Quality Management System duties as defined in this manual. The Quality Control Inspector reports to the Quality Control Manager on any Quality Management System issue.
- 4.9 **WELDING EXAMINER:** An employee of (name of company) designated by the Quality Control Manager to perform the duties as defined in this manual. The Welding Examiner reports directly to the Quality Control Manager. The Welding Examiner must hold a valid Welding Examiner Certificate of Competency issued pursuant to the Pressure Welders Regulation.
- 4.10 **SNT-TC-1A (latest ASME Code adopted edition):** American Society for Non-destructive Testing - "Recommended Practice for Qualification of Personnel".
- 4.11 **WQR/WOQR:** The document (AB-76A/AB-76B) that records the testing conditions, qualification limits and test results of the Welder (AB-76A) or Machine Welding Operator (AB-76B) for a performance qualification test conducted in accordance with ASME Section IX.
- 4.12 **WPS:** Welding Procedure Specification. This document provides direction to the Welder/Machine Welding Operator and describes in detail all of the variables which are essential, supplementary essential, and non-essential to the welding process used according to the ASME Code, Section IX.

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**SECTION 5 MANUAL CONTROL**

- 5.0 This section describes the system for preparing, revising and controlling the distribution of this Quality Management System Manual.
- 5.1 The Quality Control Manager is responsible for implementing this system. His/her duties include the following:
- (a) to approve all proposed changes to the Quality Management System Manual, by signature and date on the Revision Summary page.
  - (b) to ensure that all revisions have been accepted in writing by ABSA prior to implementation. This acceptance will be indicated by a signature and date on the Revision Summary page.
  - (c) to ensure that the Revision No., date and page number are shown on each page of the manual. Revised paragraphs will be indicated by a vertical line in each margin alongside the changed paragraph(s).
  - (d) to issue revisions using Document Transmittal (Exhibit 5.1), to all persons who are assigned controlled manuals with instructions that superseded pages are to be destroyed.
- 5.2 If additional controlled manuals are issued, the Quality Control Manager will keep a list indicating manual numbers and who they are assigned to. Uncontrolled manuals manual may be issued for information but shall not be used for construction. "Uncontrolled" shall be indicated on the front page of these manuals.
- 5.3 A controlled copy of this manual must be available at all times, on sites where work under this Quality Management System is being performed. This copy must be made available to the ABSA Safety Codes Officer upon request.

**APPLICABLE DOCUMENTS/FORMS**

- Document Transmittal, Exhibit 5.1

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**EXHIBIT 5.1 DOCUMENT TRANSMITTAL**

<p><b>(NAME OF COMPANY) DOCUMENT TRANSMITTAL</b></p>	
<p><b>TO:</b></p>	
<p> </p>	
<p><b>FROM:</b></p>	
<p><b>The following documents are enclosed:</b></p>	
<p><b>Date:</b></p>	
<p><b>DRAWING/DOCUMENT TITLE</b></p>	<p><b>REV. NO.</b></p>
<p><b>Please destroy all previous issues, sign below and return this transmittal or a copy thereof as your acknowledgement of document receipt to:</b></p>	
<p> </p>	
<p><b>Signature for Document Receipt:</b></p>	
<p><b>Date:</b></p>	

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**SECTION 6 PERSONNEL QUALIFICATIONS**

- 6.0 This section details the minimum qualifications of Welding Examiners who conduct and supervise performance qualification testing of Welders/Machine Welding Operators.
- 6.1 The Quality Control Manager is responsible for appointing the Welding Examiner(s). His/her duties include:
- a) Verifying that the Welding Examiner(s) has the necessary qualifications, experience, ability and education.
  - b) Maintaining a file for each Welding Examiner containing all relevant documentation including a letter of appointment signed by a company official and accepted by signature of an ABSA Safety Codes Officer.
  - c) Monitoring the standards employed by the Welding Examiner.
  - d) Providing written notification to ABSA, if any Welding Examiner's employment is terminated.
- 6.2 The Welding Examiner must hold a valid Welding Examiner Certificate of Competency issued by ABSA.

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**SECTION 7 DOCUMENT CONTROL**

7.0 This section describes the procedure for developing and qualifying welding procedures and the control of other documents.

7.1 The Quality Control Manager is responsible for ensuring that:

- a) the necessary welding procedures are developed, qualified and registered with ABSA.
- b) welding procedure qualification tests are witnessed and certified by a (name of company) representative
- c) welding procedures are maintained on file
- d) welding procedures are available to the Welders/Machine Welding Operators throughout the performance qualification test
- e) ensuring that a controlled copy of this Quality Management System Manual is available at the testing facility

7.2 The Quality Control Manager is responsible for ensuring that the latest editions and addenda of ASME Section II Part C, ASME Section IX and the latest issues of the Alberta Safety Codes Act and Regulations.

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**SECTION 8 MATERIAL CONTROL**

- 8.0 This section describes the requirements for ordering, identification, receiving, storing, issuing and controlling traceability of materials used for Welder/Machine Welding Operator performance qualification testing.
- 8.1 The Purchasing Manager is responsible for ordering all materials. His/her duties include:
- a) ensuring that all material is ordered by SA/SB specification
  - b) ensuring that all welding consumables are ordered to an SFA specification and AWS classification
  - c) requesting material test reports for all materials
  - d) ensuring that one copy of the Purchase Order (Exhibit 8.1) is available for the Welding Examiner who receives the material
- 8.2 The Welding Examiner is responsible for receiving and storing all the material. His/her duties include:
- a) inspecting all received material for damage and correct material identification and thickness against the Purchase Order
  - b) colour coding, cutting, machining and storing the material in a manner that will maintain traceability
  - c) checking the material test report to ensure that it meets the requirements of ASME Section II
  - d) checking that all welding consumables received comply with the Purchase Order and are identified with the manufacturer's name, SFA specification, AWS classification and size. Unidentified spools, containers, or electrodes are unacceptable and are to be returned to the supplier or discarded
  - e) ensuring that all welding consumables are stored according to the manufacturer's specifications until they are used

**APPLICABLE DOCUMENTS/FORMS**

- Purchase Order, Exhibit 8.1

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**EXHIBIT 8.1 PURCHASE ORDER**

<p><b>67354</b> THIS NUMBER MUST APPEAR ON ALL INVOICES, PACKAGES, ETC.</p>	
<b>PURCHASE ORDER</b>	
<b>TO:</b>	<b>DATE:</b>
<b>ADDRESS:</b>	
<b>SHIP TO: (NAME OF COMPANY)</b>	<b>REQ. NO. OR DEPT.:</b>
<b>ADDRESS:</b>	<b>FOR:</b>

PLEASE NOTIFY US IMMEDIATELY IF YOU ARE UNABLE TO SHIP COMPLETE ORDER BY DATE SPECIFIED

QUANTITY	PLEASE SUPPLY ITEMS LISTED BELOW	PRICE	AMOUNT
1	6 meters. Pipe, smls. SA-106B Sch 80, 8 NPS		
2	2 Only Tee, Reducing SA-234 WPB Sch 80		
3	8 X 8 X 6 NPS		
4	1 Only Elbow, 90°, L.R. SA-234 WPB Sch 80, 8 NPS		
5	1 Only Threadolet, SA-105, 6000#, 1 on 8 NPS		
6	6 Only 3" RFWN Flange, SA-105, 300#, Sch 80 8 NPS		
7	Material test reports are required for all materials.		
8	<b>Note:</b> All fitting designs must be registered with ABSA.		

<b>DATE REQUIRED:</b>	<b>PLEASE SEND</b>	<b>COPIES OF YOUR INVOICE</b>
<b>TERMS:</b>	<b>PURCHASING AGENT</b>	

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**SECTION 9 PERFORMANCE QUALIFICATION TESTING**

- 9.0 This section details the activities, procedure and requirements for performance qualification testing of Welders/Machine Welding Operators.
- 9.1 All parts of the performance qualification testing of Welders/Machine Welding Operators must be conducted and supervised only by those persons that have been appointed as a Welding Examiner. A Welding Examiner must not issue a Performance Qualification Card to himself/herself.
- 9.2 Prior to the performance qualification test, the Welding Examiner must:
- a) review the candidate's qualifications to ensure the candidate has an Alberta "A" or "B" Pressure Welder's Certificate of Competency, or Machine Welding Operator's Certificate of Competency
  - b) make a photocopy of the candidate's Certificate of Competency
  - c) select the welding procedure to be used
  - d) fill in the appropriate parts of the Welder/Welding Operator Qualification Record (AB-76A or AB-76B)
  - e) issue a copy of the Examination and Test Procedure (see Exhibit 9.1 for SMAW process) to the candidate
  - f) issue a copy of the Welding Procedure Specification to the candidate
  - g) assign a set of test coupons to the candidate
  - h) assign a test area to the candidate
- 9.3 During the performance qualification test, the Welding Examiner must:
- a) verify the joint preparation including land and gap
  - b) check the position of the test coupons
  - c) verify welding machine set-up including voltage/amperage for specific electrode size.
  - d) assess the tack welds for length and feathering
  - e) complete the applicable section of the Welder/Welding Operator Qualification Record (AB-76A or AB-76B)
  - f) monitor the root pass to ensure it is done in the correct position and direction, and assess the root pass for quality (penetration, fusion, undercut, profile and spatter)
  - g) monitor the hot pass, fill and cap to ensure welding is done in position and within the prescribed time frame.
- 9.4 After the performance qualification test welding, the Welding Examiner must:
- a) assess the weld quality by examining the completed weld for reinforcement, weld profile, arc strikes, weld width and undercut
  - b) complete the applicable portion of form AB-76A or AB-76B
  - c) identify the test specimens to be cut out and die stamp them for positive identification of specimen number and candidate
  - d) identify test coupons to be radiographed and die stamp them with the candidate's identification

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- e) monitor specimen preparation
- f) examine specimen acceptability for width and thickness
- g) verify the guided bend test jig for correct tolerances
- h) complete the required bend tests
- i) assess the acceptability of guided bend tests against acceptance criteria
- j) ensure ASME Section IX requirements are met when radiography is used to qualify
- k) review radiographic film and reports when radiography is used for performance qualification testing
- l) complete the Welder/Welding Operator Qualification Record (AB-76A or AB-76B)
- m) issue and sign a Welder Performance Qualification Card (Exhibit 9.2) if the test is satisfactory
- n) identify all failed coupons and store them for a minimum of 90 days after completion of the test.

9.5 For commercial testing facilities, the following must be verified before conducting a performance qualification test using an owner's welding procedure:

- a) The Welding Examiner understands the essential variables for the specific process and is competent to issue performance qualification cards. (Note: processes are limited to those listed in "Scope of Work" Section D of this manual).
- b) the welding procedure has been registered with ABSA.
- c) the full welding procedure must be provided (WPS and PQR).
- d) the polarity, voltage and amperage of welding machines supplied by the test candidates are checked for accuracy using calibrated meters under the quality control of (name of company).

9.6 If a candidate is not satisfied with the performance qualification test, he/she may make a written complaint to the Administrator of ABSA.

9.7 If a Welder/Machine Welding Operator loses his/her performance qualification card issued by (name of company) and requires a duplicate, the Welding Examiner is responsible for verifying that the Welder/Machine Welding Operator did perform a satisfactory performance qualification test and will issue a duplicate performance qualification card after the Request for Duplicate Welder Performance Qualification Card (Exhibit 9.3) is completed. The card must expire on the same date as the original card.

### **APPLICABLE DOCUMENTS/FORMS**

- SMAW Examination and Test Procedure, Exhibit 9.1
- Welder Performance Qualification Card, Exhibit 9.2
- Request for Duplicate Welder Performance Qualification Card, Exhibit 9.3

#### ABSA/Alberta Municipal Affairs Forms

- Welder Qualification Record, AB-76A
- Welding Operator Qualification Record, AB-76B

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**EXHIBIT 9.1 SMAW EXAMINATION AND TEST PROCEDURE**

(Note: The following is a sample procedure for the SMAW process using SFA5.1 E6010 and SFA5.1 E7018 electrodes and welding in the 6G position. Other procedures would be required for companies testing otherwise.)

**WELDERS PERFORMANCE QUALIFICATION TEST PROCEDURE**

1. Candidates must produce their wallet size Pressure Welder's Certificate of Competency, as applicable, as proof of eligibility to take the test.
2. Candidates are required to provide gloves and protective clothing. Helmets and grinders are provided but the candidate may supply these if desired.
3. Grinding must be done in the grinding room. No grinding is permitted in the welding booths.
4. The Welding Examiner must provide a set of welding coupons and a tool box, and assign a welding area.
5. The time allowed for the test is 2.5 hours.
6. The size of the root face and the width of the root gap is to be at the candidate's discretion. Three tack welds approximately 12.7 mm (0.5") long are considered part of the test. The tacks may be feathered.
7. The coupons are to be positioned with the pipe axis at 45 degrees to the horizontal. The candidate is to have the position verified by the Welding Examiner. Once the pipe coupons are positioned, the positioner holder must not be moved.
8. The root pass is to be made using SFA 5.1 E6010 electrode with travel in the uphand direction. When the root pass is completed and cleaned, the candidate will bring the coupon (still attached to the positioner) to the Welding Examiner for inspection.
9. If the root pass is acceptable, the candidate must return the coupons to the same position and complete the fill and cap passes using SFA 5.1 E7018 welding electrode with uphand progression during welding.
10. When the welding is completed, the candidate is to bring the coupons to the Welding Examiner for examination and marking of specimens. If the welded coupons are to be radiographed, the Welding Examiner must identify the coupons and hold for radiography. For guided bend tests, the candidate then cuts out the marked specimens, grinds the cap and root flush with the base metal and radius the edges back to a maximum of 0.125". Excessive grinding that reduces the thickness of the specimens below the nominal thickness must result in failure of the test. The specimens presented to the Welding Examiner must clearly show the identification stamps.
11. While the specimens are cooling, the candidate is to clean the work area, return the tools to the Welding Examiner and the unused rods to the storage area.
12. The root bead must be uniform in width and penetration. All welds must be free of grapes, craters, porosity, undercut and lack of fusion. The finished weld is to be uniform, free from undercut, overhang or arc strikes and without excessive weld reinforcement. The test may be terminated at any stage if it becomes apparent that the candidate does not have the required skill to produce satisfactory results, or is taking excessive time to complete any phase of the test. The failure of any specimen in the bend test is considered as a complete failure of the test. A coupon rejected by radiography is also considered a failure of the test.

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**EXHIBIT 9.2 WELDER PERFORMANCE QUALIFICATION CARD****FRONT SIDE**

Testing Org. Logo	<b>NAME OF ORGANIZATION</b>	A.O.Q.P. No.
<b>WELDER PERFORMANCE QUALIFICATION CARD</b>		
NAME: _____		ABSA FILE NO.: _____
<p>This card is issued pursuant to the Alberta Safety Codes Act and Pressure Welders Regulation. The performance qualification is in accordance with Section IX of the ASME Code and subject to the limitations on the reverse side.</p>		
_____ Date of Test	_____ Signature of Welder or Machine Welding Operator	
_____ Welding Examiner (Print/Type)		Card No. 123456

**BACK SIDE**

<b>PERFORMANCE QUALIFICATION</b>		Card No.: 123456
Process(es) _____	_____	Material (P-No.) _____
Filler Metal Group (F-No.) _____	_____	Min. Outside Pipe Diameter _____
Max. Deposited Weld Metal _____	_____	Position(s) Qualified _____
Backing _____	_____	Backing Gas _____
Progression _____	_____	
_____ P.Q. Expiry Date	_____ Welding Examiner Signature	_____ Examiner File No.

***(This Exhibit must be a photocopy of the actual card)***

Suggested Card Size: 2 inches by 3.5 inches

Suggested Colour: Antique Gold with Black lettering

Suggested Paper: Equivalent

Note: Card No. shall be a pre-printed sequential series of numbers for card identification and control.

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EXHIBIT 9.3 REQUEST FOR DUPLICATE WELDER PERFORMANCE QUALIFICATION CARD

REQUEST FOR DUPLICATE WELDER PERFORMANCE QUALIFICATION CARD

I, \_\_\_\_\_ certify that on, or about, \_\_\_\_\_  
my Welder Performance Qualification Card(s) for the following process(es):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Were: (check one of the following)

LOST \_\_\_\_\_ DESTROYED \_\_\_\_\_ STOLEN \_\_\_\_\_

I am requesting duplicate Welder Performance Qualification Card(s) be issued.

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Welder/Machine Welding Operator

ABSA File No. \_\_\_\_\_

Duplicate Performance Qualification Card(s) have been issued for the following Process(es):

<u>PROCESS</u>	<u>EXPIRY DATE</u>	<u>CARD #</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

\_\_\_\_\_  
Welding Examiner

\_\_\_\_\_  
Date

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**SECTION 10 NONDESTRUCTIVE EXAMINATION (NDE)**

10.0 This section describes the radiographic examination that must be used to qualify Welders/Machine Welding Operators as an alternative to the guided bend test.

Interpretation of radiographic film must be performed to the standards specified in ASME Section IX.

10.1 The Quality Control Manager is responsible for appointing all NDE subcontractors and must specify that:

- a) all personnel performing NDE must be qualified and certified in accordance with SNT-TC-1A or CGSB
- b) there be a level III examiner on staff to be responsible for NDE procedures and supervise examiner certification and training
- c) that all examination is done under the supervision of a level II or level III examiner
- d) that all interpretation be done by a level II or level III examiner

10.2 The Welding Examiner is responsible for liaison with the NDE subcontractor. His/her duties include:

- a) reviewing the qualifications of NDE examiners and their company's written procedures and ensuring copies of qualifications and procedures are retained on file
- b) notifying the examiners of NDE requirements
- c) identifying the welds to be examined
- d) reviewing all NDE reports and radiographic film
- e) ensuring that the radiographs are traceable to the weld coupon

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**SECTION 11 NONCONFORMITIES**

- 11.0 This section describes the system for identifying, documenting and resolving nonconformities.
- 11.1 All nonconformities must be reported immediately to the Quality Control Manager and, if involving materials, must be identified by tagging or marking the item with red paint. The Quality Control Manager must detail the nonconformity on a Nonconformity Report (Exhibit 11.1).
- 11.2 The Quality Control Manager must decide if the item is to be rejected or if the item is to be reworked or repaired to bring it into conformance.
- 11.3 The item will be released after it has been brought into conformance.
- 11.4 The Nonconformity Report must be retained on file.

**APPLICABLE DOCUMENTS/FORMS**

- Nonconformity Report, Exhibit 11.1

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## EXHIBIT 11.1 NONCONFORMITY REPORT

<b>NONCONFORMITY REPORT</b>	
<b>IDENTIFYING NUMBER:</b>	<b>NONCONFORMITY REPORT NO.:</b>
<b>IDENTIFICATION DETAILS:</b>	
<b>DESCRIPTION OF NONCONFORMITY:</b>	
<b>Q.C. MANAGER SIGNATURE:</b>	<b>DATE:</b>
<b>PROPOSED DISPOSITION:</b>	
<b>Q. C. MANAGER APPROVAL:</b>	<b>DATE:</b>
<b>NONCONFORMITY RECTIFIED:</b>	
<b>Q. C. MANAGER APPROVAL:</b>	<b>DATE:</b>

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**SECTION 12 HEAT TREATMENT**

- 12.0 (name of company) does not normally require heat treatment of Welder/Machine Welding Operator performance qualification test coupons since this is not an ASME Code requirement. If heat treatment of test coupons is required by (name of company) client, then it must be carried out as described in this section.
- 12.1 This section describes the system to ensure that all heat treatment is performed in accordance with the Code and job specifications.
- 12.2 The Quality Control Manager must issue written instructions to the heat treatment contractor (Exhibit 12.1) specifying holding time, holding temperature, heating and cooling rates and any special instructions, when (name of company) is responsible for assigning the heat treatment contractor.
- 12.3 The Quality Control Manager's duties include:
- (a) notifying heat treatment company which welds are to be heat treated.
  - (b) verifying that heat treatment procedures are adequate; including location of thermocouples, and calibration records for measuring instruments.
  - (c) verifying that the calibration records are available at the heat treatment site for measuring instruments and recorders.
  - (d) checking the time temperature chart against the heat treatment specifications and the thermocouple diagram; and verify that all time temperature charts are identified with thermocouple location numbers, weld identification and the signature of the heat treatment contractor's representative.
  - (e) retaining a written record of the welds that were heat treated.
  - (f) filing the charts, thermocouple diagrams, calibration records, etc. in the applicable file.

**APPLICABLE DOCUMENTS/FORMS**

- Heat Treatment Form, Exhibit 12.1

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**EXHIBIT 12.1 HEAT TREATMENT FORM**

HEAT TREATMENT FORM				
CUSTOMER:				
DESCRIPTION:				
DATE:				
COMPONENT DESCRIPTION				
WELD IDENTIFICATION	DIAMETER	THICKNESS	MATERIAL	LENGTH
TYPE OF HEAT TREATMENT:				
<b>INSTRUCTIONS: STRESS RELIEVE</b>				
1. Temperature to be raised from 800°F (426°C) to 1150°F (621°C) at a maximum rate of _____°F (_____°C) per hour. NOTE: MUST NOT EXCEED 400°F (222°C) PER HOUR. (Calculated rate = 400°F/h. Divided by governing metal thickness)				
2. Temperature to be held at 1150°F (621°C) plus or minus 25°F (14°C) for _____ minutes.				
3. Temperature to be lowered from 1150°F (621°C) to 800°F (426°C) at a rate of _____°F (_____°C) per hour. NOTE: MUST NOT EXCEED 500°F (278°C) PER HOUR. (Calculated rate = 500°F/h. Divided by governing metal thickness)				
4. <b>Additional requirements: Weld identification required on heat treatment chart.</b>				
5. Furnace Heat Number:				
6. Furnace Operator's Signature:				
Q. C. Manager's/Welding Examiner's Signature:				

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**SECTION 13 MEASURING AND TEST EQUIPMENT**

- 13.0 This section describes the system that must be used to ensure the accuracy of all voltmeters, ammeters, welding machines and welding electrodes storage oven temperature gauges.
- 13.1 The Quality Control Manager is responsible for ensuring the accuracy of all equipment. His/her duties include:
- (a) Maintaining a record of all meters/welding machines/storage oven temperature gauges and their calibration dates.
  - (b) Identifying all meters/welding machines/storage oven temperature gauges with an identification number.
  - (c) Ensuring that the meters/welding machines/storage oven temperature gauges are calibrated at least every twelve months or whenever error is suspected.
- 13.2 The Quality Control Manager is also responsible for servicing and cleaning of all welding equipment to ensure that it is operating properly.

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**SECTION 14 RECORD RETENTION**

- 14.0 This section describes the records that must be kept for each test.
- 14.1 The Quality Control Manager is responsible for maintaining the following records for at least two years:
- a) Welder/Machine Welding Operator Qualification Records
  - b) NDE Reports and Radiographic Film
  - c) Nonconformity Reports
  - d) Copies of candidates' Certificates of Competency
  - e) Purchase Orders
  - f) Meters/Welding Machine/Temperature Gauges Calibration Records
  - g) Material Test Reports
  - h) Request for Duplicate Welder Performance Qualification Card
  - i) Heat treatment instructions and charts, if applicable
  - j) Copies of Welders/Machine Welding Operators performance qualification cards

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**SECTION 15 ABSA SAFETY CODES OFFICER**

- 15.0 This section establishes the rights and responsibilities of the ABSA Safety Codes Officer.
- 15.1 The Quality Control Manager or designate is responsible for liaison with the ABSA Safety Codes Officer.
- 15.2 The ABSA Safety Codes Officer has access to areas where performance qualification testing of Welders/Machine Welding Operators is conducted. He/she has access to all documents and materials pertaining to Welder/Machine Welding Operator performance qualification tests described in this Quality Management System Manual.

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