Quality Management System (QMS) Requirements for Pressure Fitting Construction

AB– 541

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FOREWORD

As provided for under Sections 11, 12 and 13 of the Pressure Equipment Safety Regulation (PESR), the Administrator in the pressure equipment discipline has established that ABSA document AB-541 “Quality Management System Requirements for Pressure Fitting Construction” specifies information required by the Administrator from an organization that applies for a Certificate of Authorization Permit as required under Section 11; and specifies features of a quality management system that may be acceptable to the Administrator, as provided for under Sections 12 and 13 of the PESR.

The next scheduled revision of AB-541 will be in 2027.

It is the responsibility of a Certificate of Authorization Permit holder to comply with the current requirements throughout the term of its certification. When changes to an organization’s QMS are required due to new or revised requirements, the written description will be revised accordingly and a copy submitted to ABSA for review and acceptance.

To ensure this document remains relevant and of value to Alberta stakeholders, it shall be reviewed periodically to confirm that it is aligned with current industry best practices and policies. Additionally, it shall be revised whenever an urgent need is identified. Any suggestions for improvement are welcome. Please provide comments to:

Mike Prefumo
Manager of Inspections
prefumo@absa.ca

1.0 SCOPE OF THIS DOCUMENT

This document outlines the Alberta QMS requirements for the construction of new pressure fittings and includes repair/alteration in-service pressure fittings. For repairs and alterations, all other requirements of AB-513 must be met.

This document establishes the information that shall be covered in a written description of a QMS for pressure fitting construction. Implementation guidance, explanation of requirements, clarifications and recommendations are provided to assist owners and contractors meet the requirements and implement an effective management system.

2.0 DEFINITIONS and ACRONYMS

ABSA – is the organization delegated by the Government of Alberta to administer the pressure equipment safety legislation under the Safety Codes Act.

ABSA Safety Codes Officer (SCO) – means a safety codes officer, designated under the Act, in the pressure equipment discipline. [PESR 1(1)(ee)]

Access to a Code – availability for use on the same day the need for the Code arises.

Act and Regulations – means the Alberta Safety Codes Act and the following regulations:

- Pressure Equipment Exemption Order (Alberta Regulation 56/2006),
- Pressure Equipment Safety Regulation (Alberta Regulation 49/2006),
- Power Engineers Regulation (Alberta Regulation 85/2003),
- Pressure Welders Regulation (Alberta Regulation 169/2002)
- Administrative Items Regulation (Alberta Regulation 16/2004)

Administrator – means the Administrator in the pressure equipment discipline appointed under the Act. [PESR 1(1)(b)]

AI – means Authorized Inspector employed by an AIA such as ABSA.

Alberta Quality Program (AQP) – a quality program that covers a defined scope such as piping fabrication, vessel fabrication, fitting fabrication, etc. for which a certificate of authorization permit has been issued per PESR Section 11.

ASME – means American Society of Mechanical Engineers.

CAP – Certificate of Authorization Permit means a permit issued pursuant to section 44 of the Act authorizing a person to carry out the activities stated on the certificate of authorization permit; [PESR 1(1)(g)].

Competent – in relation to a person, means possessing the appropriate qualifications, knowledge, skill and experience to perform the work safely and in accordance with the Act. [PESR 1(1)(i)]

Note: competent includes working in accordance with this document.

CRN – is the acronym for Canadian Registration Number and means a design registration number issued by a pressure equipment jurisdiction in Canada per the requirements of CSA B51 Code. CRNs are issued for boiler, pressure vessel or fitting designs. A boiler, pressure vessel or fitting that is planned to be used in Alberta must have a CRN issued by ABSA.

Note: In addition to CRNs, there are other types of provincial design registrations in Alberta. Alberta provincial design registration numbers (not CRNs) are issued for pressure piping design registrations (PP numbers), special design registrations (ALDs), or welding procedures (WPs).

CSA – is the acronym for Canadian Standards Association.

DN – means a dimensionless designator used in the SI (metric) system to describe pipe size. [PESR, Partial Exemption 4(1)]

Examination – means quality control functions performed by the pressure fitting manufacturer.

Expansible Fluid – means (i) a vapour or gaseous fluid, or (ii) a liquid under pressure and at a temperature at which the liquid changes to a gas or vapour when the pressure is reduced to atmospheric pressure or when the temperature is increased to ambient temperature. [PESR 1(1)(l)]

Fitting – means a valve, gauge, regulating or controlling device, flange, pipe fitting or any other appurtenance that is attached to, or forms part of, a boiler, pressure vessel, fired-heater pressure coil, thermal liquid heating system or pressure piping system. [PESR, 1(1)(n)]

Inspection – means the activities performed by an Authorized Inspector (AI) or an Owner's Inspector, to verify that all the required examinations and testing have been completed for pressure fitting, and to ensure that all the documentation for material, fabrication, and examination conforms to the applicable requirements of the Code of construction and the engineering design.

Inspector – means an Owner's Inspector, an In-service Inspector, or an ABSA Safety Codes Officer, who is responsible for inspecting and certifying the item of pressure equipment.

ISO – means International Organization for Standardization.

ITP – means an Inspection Test Plan.

Jurisdiction – is a governmental entity (or an organization delegated by government) which administers and enforces legislated requirements, in the respective geographic legal authority (country, state, province or territory), pertaining to pressure equipment.

NDE – means Nondestructive Examination - Any of a number of techniques that can be used to examine a material, component, or system without causing damage. Common techniques include visual, ultrasonic, magnetic particle, liquid penetrant, radiographic, and eddy-current testing.

NPS – means Nominal Pipe Size.

Owner – includes a lessee, a person in charge, a person who has care and control and a person who holds out that the person has the powers and authority of ownership or who for the time being exercises the powers and authority of ownership. [SCA 1(1)(v)]

Permit – means a Certificate of Authorization Permit issued by ABSA pursuant to Section 44 of the SCA.

PESR – means Pressure Equipment Safety Regulation, Alberta Regulation 49/2006.

Pressure Equipment – means a boiler, a fired-heater pressure coil, a thermal liquid heating system and other equipment designed to contain expansible fluid under pressure, including, but not limited to, pressure vessels, pressure piping systems and fittings, as defined in the regulations. [SCA 1(1)(y)]

Pressure Piping System – means pipes, tubes, conduits, fittings, gaskets, bolting and other components that make up a system for the conveyance of an expansible fluid under pressure and may also control the flow of that fluid. [PESR 1(1)(aa)]

Quality Control (QC) – Quality Control is part of the quality management system that is focused on fulfilling quality requirements.

Quality Management System (QMS) – means all the documented, planned and systematic actions needed to ensure that this Act is complied with. [SCA 1(1)(aa)]

WPS – means a Welding Procedure Specification meeting the requirements of ASME Section IX Code.

Please refer to the Safety Codes Act and Regulations for other relevant definitions.

3.0 REQUIREMENTS

3.1 Certificate of Authorization Permit Requirement

The Pressure Equipment Safety Regulation (PESR) establishes that the Construction, Repair/Alteration of Pressure Fittings be done by a 'Certificate of Authorization Permit' holder in Alberta. (PESR Section 11).

Canadian Pressure Fitting Manufacturers Located outside of Alberta but within Canada:

Pressure fittings shall be constructed in accordance with the requirements of the local pressure equipment jurisdiction. The Fitting Manufacturer shall have an accepted Quality Management System (QMS) program registered and audited by the Authority having jurisdiction (AHJ).

Pressure Fitting Manufacturers Located Outside of Canada:

The fitting manufacturer shall have an accepted QMS audited by an acceptable third-party agency. Example agencies would include the pressure equipment AHJ in a Canadian province, an ASME Authorized Inspection Agency or an ISO 9001 registrar.

3.2 Overview of Act, Regulations, Codes and Standards (refer to AB-029 for detailed requirements regarding regulations, codes and standards access):

- **Safety Codes Act, Revised Statutes of Alberta 2000, Chapter S-1:**

  The paramount document in the hierarchy of the requirements is the Safety Codes Act. The Act establishes requirements such as responsibilities of the owners, pressure fitting manufacturers, and designers; powers of the Safety Codes Officers; issuance and suspension of permits; maintenance of a QMS. Orders, appeals and penalties are also described in the Act. SCA defines pressure equipment. Pressure fittings are part of this definition. **Compliance with the SCA is mandatory.**

- **Pressure Equipment Safety Regulation (PESR), Alberta Regulation 49/2006:**

  The PESR is enacted under the Safety Codes Act and establishes requirements for the design, construction repairing and altering of pressure fittings in Alberta. It defines the ‘fitting’ as *“valve, gauge, regulating or controlling device, flange, pipe fitting or any other appurtenance that is attached to, or forms part of, a boiler, pressure vessel, fired-heater pressure coil, thermal liquid heating system or*

pressure piping system". **Compliance with the PESR is mandatory. Organizations which manufacture, repair and alter pressure fittings are required to maintain a current copy of the PESR.**

Some of the key requirements of the PESR related to the pressure fittings are listed below:

- Pressure fittings shall have the design registered (Section 14 of the PESR);
- Certificate of Authorization Permit is required to construct and/or repair/alter pressure fittings in Alberta (Section 11 of the PESR).

- **Pressure Welders Regulation, Alberta Regulation 169/2002:**

  Pressure Welders Regulation establishes requirements for the **Certificate of Competency** and **Performance Qualification Cards** for welders and machine welding operators.

  The above requirement refers to the use of certified 'B' or 'C' Pressure Welders and Machine Welding Operators for the fabrication of pressure fittings if the fittings are of welded construction. A 'B' pressure or 'C' pressure welder is not permitted to weld on any pressure equipment unless he/she is employed or contracted by a Certificate of Authorization Permit holder and is knowledgeable about the permit holder's WPSs and the QMS's requirements. Other requirements include assignment of a weld symbol to the welder or operator, identification of the welds using the assigned symbol and maintenance of the records of the welders/operators. **Compliance with the Pressure Welders Regulation is mandatory.**

- **Pressure Equipment Exemption Order, Alberta Regulation 56/2006:**

  The Pressure Equipment Exemption Order establishes exemptions for pressure equipment.

- **Boiler, Pressure Vessel and Pressure Piping Code, CSA B51:**

  CSA B51 Code establishes requirements for the construction of fittings in Canada. The Code has been adopted by all pressure equipment jurisdictions in Canada and therefore compliance with it is mandatory throughout Canada (the application of the requirements may vary). Information regarding the Canadian Registration Number (CRN), design registration of fittings and categories of fittings of A, B, C, D, E, F, G and H are included in this Code. Under Section 2(2) of PESR, **Compliance with the CSA B51 is mandatory.**

- **Applicable ASME Codes, and/or ANSI Standards:**

  A pressure fitting can be designed and manufactured in accordance with different applicable Codes and Standards such as ASME B16 Standards, ASME BPV Codes Section VIII, ASME B31 pressure piping Codes and other ANSI Standards. The compliance with these Codes and Standards is mandatory if fittings are designed and constructed in accordance with such Codes and/or Standards.

The requirements of the Act and Regulations shall prevail over the requirements of the CSA and ASME Codes. Likewise, the requirements of the CSA Code shall prevail over the ASME Codes and other Standards.

Note: Electronic access in lieu of maintaining hard copies is acceptable provided the provision is described in your document control process.

3.3 Quality Management System (QMS) Requirements

***Requirements indicated hereafter are mandatory and shall be addressed in a QMS*.**

Implementation guidance is provided to supplement or promote understanding of the requirements.

Requirements

Management shall develop and implement a QMS that states the organization's commitment to quality and describes the system used by the organization for the construction of pressure fittings. A written description of the QMS shall meet the requirements of the AB-541 document.

Implementation Guidance

A QMS establishes an organization's policies, business practices, commitment, and accountability to meet the specified requirements, and describes a system to continually improve and maintain an effective management system. A written description of the QMS documents an organization's business practices and is typically developed by executive management.

A written description of the QMS may be developed in a manner that best suits an organization's business needs provided all of the requirements of this AB-541 document are addressed. It is not the intent that an organization's QMS be formatted to adopt the same format and/or sequence or titles of this AB-541 but rather that the requirements be addressed in an organization's quality management system.

ISO 10013:2021 – Quality Management Systems Guidance for documented information, and ISO 10005:2018 – Quality Management Guidelines for Quality Plans, provide useful information for developing effective quality management system documentation. A written description of the QMS developed in accordance with the guidelines of ISO 10013:2021 and meeting the requirements of ISO 29001:2020 or ISO 9001:2015 Standards is acceptable provided all of the requirements of this AB-541 document are addressed.

A written description of the QMS should accurately describe the system in practice. It should be a working document and enable the management, Quality Control (QC) personnel, auditors, ABSA, customers and other interested parties to understand the manufacturing, assembling, repairing or servicing processes. The AB-541b Pressure Fitting Construction Written Description Checklist must be submitted along with a written description of the quality management system. This checklist assists ABSA to understand where the AB-541 required elements are covered and how they have been addressed.

The extent of documentation needed to meet the requirements of this AB-541 document will depend on the size of the organization, type, location and complexity of the operations and competence of the personnel. Smaller organizations may find it appropriate to provide detailed descriptions of their work processes within the written description of the QMS documentation. However, including detailed procedures within the main body of the written description of the QMS documentation may distract a user from the key requirements of the management system. For this reason, procedures and other supporting documents that detail the processes may be referred to in the written description of the QMS and maintained separately as controlled documents. The content of the QMS elements should be limited to a brief explanation of the key requirements.

The primary purpose of procedures, engineering standards, manufacturing standards, work instructions and other such documents is to provide guidance to the individuals involved in the construction of pressure fittings. These documents shall, therefore, be readily available at the point of use. They should be written with the reader in mind to clearly convey what is required to perform the activities and shall be detailed enough so that activities can be completed to meet the quality requirements consistently. The guidance documents may take the form of flow charts, tables, text, a combination of these or other means which may best suit the organization.

The senior management responsible for the construction and/or repair/alterations of pressure fittings should be actively involved in the development and implementation of the QMS. This is necessary to ensure that the QMS reflects current business practices, is effective, adds value to the organization and ensures that activities are aligned, effectively interlinked to the supporting systems and demonstrates compliance to the legislation.

3.3.1 Title Page

Requirements

The Title Page shall include:

- title of the document that describes the organization's QMS;
- the name and corporate address of the organization; and
- identify the revision status of the document.

3.3.2 Table of Contents

Requirements

Include a Table of Contents that lists the number and title of each section and its location in the written description of the QMS.

3.3.3 Scope and Organization

Requirements

The organization shall:

- describe the scope of the activities to be undertaken. The category of fittings to be manufactured shall be included;
- define if welding or machining applies within the quality program or if these functions will be subcontracted to an ABSA-authorized subcontractor or as applicable;
- list additional shop locations as applicable;
- describe the scope of work undertaken at each shop location, and the address of each shop;
- indicate whether activities are undertaken at shop and/or at field sites; and
- state the titles of personnel designated to perform QC functions at each site, and, the title of a person who is overall responsible for maintenance and for assuring effective implementation of the QMS at all locations.

  If an organization does not have a shop, and undertakes field activities only, the organization shall indicate that the activities undertaken are at field sites in Alberta controlled from an office address of the organization.

The management system shall:

- include a statement that the management will ensure that responsibilities and authorities are defined and are communicated within the organization; and
- describe the organizational structure and identify key positions of personnel who manage and perform work affecting quality.

If an organization will supply fittings under their brand name or mark, but do not have manufacturing facilities and/or subcontract partial manufacturing activities.

The management system shall:

- include a statement that the organization's quality management system shall include appropriate controls of all subcontracted fabrication processes to ensure quality is achieved.

Implementation Guidance

The responsibility, authority and interrelation of personnel who manage, perform and verify work affecting quality – as well as those who need the organizational freedom and authority to identify non-conformances, recommend solutions, initiate corrective action and verify implementation of solutions – should be described in this section. The description may be in the form of organization charts, flow charts, and job descriptions, as applicable. These documents may be included or referenced to in the written description of the QMS.

Personnel responsible for quality control functions may report directly to a production manager; however, they should have the freedom to report matters that may jeopardize quality to the top management.

If welding or machining is subcontracted, the welding shall be contracted to a company who has a valid certificate of authorization from ABSA for the scope of work if the welding activities are under the SCA and regulation. Machining activities subcontracted shall include appropriate controls to ensure quality and design requirements are achieved.

3.3.4 Definitions of Terms and Acronyms

All terms and acronyms used in the written description of the QMS should be defined.

3.3.5 Statement of Authority and Responsibility

Requirements

A Statement of Authority document shall include:

- a statement that the organizations written description of the QMS meets the requirements of this AB-541 document and accurately describes the pressure fitting construction and repair/alteration processes implemented by the organization;
- a statement that the management will uphold the requirements of the SCA and Regulations and resolve any issues regarding quality;
- a statement that the quality system has the full support of the management who will ensure that adequate resources, including competent personnel, are provided to implement the program;
- the title of the person responsible for the development and maintenance of the Quality Management System, with an explanation that this person has the defined authority and responsibility for implementation of the program and has direct access to, and support from, the top management to resolve any implementation barriers; and
- the signature (with date) of the senior management.

A new Statement of Authority document signed by the executive manager with the current date is required at the time of renewal of the certification.

Implementation Guidance

A Statement of Authority is required to affirm commitment and support from the top management to assure that the requirements of the Safety Codes Act will be upheld and that adequate resources will be provided for effective implementation of the quality management system.

3.3.6 Management Responsibilities

Requirements

The QMS documentation shall include statements that the management:

- is committed to the development and implementation of a successful fitting construction and repair/alteration program and that it will continually improve its effectiveness;
- will review the fitting construction program at appropriate intervals to ensure its continued suitability and effectiveness;
- will determine and provide adequate and competent resources, necessary facilities and equipment to effectively implement the fitting construction program;
- will ensure the entire fitting fabrication process will be controlled.
- will appoint a member of the organization's management who, irrespective of other responsibilities, shall have responsibility and authority to ensure that QMS processes are established, implemented and maintained, and shall report performance of the QMS to the top management on a periodic basis;
- will ensure that the responsibilities and authorities are defined and communicated within the organization.
- will resolve disagreements concerning the implementation of the QMS; and
- will ensure that the QMS remains in compliance with the requirements of this AB-541 document, SCA, Regulations and applicable Codes/Standards throughout the term of the certification.

Implementation Guidance

The objective of describing management responsibilities in the written description of a QMS is to ensure that the top management makes commitment and takes a leading role in defining, implementing, administering and improving the systems with the goal of meeting the requirements established by the customers, regulations, Codes & Standards and organization's own standards.

Leadership, commitment and active involvement of the top level of management is essential for developing, maintaining and implementing an effective and efficient quality management system.

3.3.7 Contract Review/Processing Orders

Requirements

The QMS shall ensure that the:

- responsibilities for contract review/ processing orders are defined;
- fitting construction requirements and the scope of work are defined and documented;
- responsibilities for the supply of materials and construction drawings are identified;
- responsibility for the design and design registration with ABSA are identified;
- responsibility for welding, NDE, heat treatment and pressure testing are identified;
- requirements of a turnover package and contents thereof are agreed upon;
- responsibilities for certification of construction are defined;
- list of the subcontracted suppliers that will perform manufacturing activities will be maintained;
- all revised process and/or procedures must be accepted prior to implementation; and
- other responsibilities associated with the order are defined.

Implementation Guidance

Contract agreement is a critical activity that happens at the initial stages of the construction project and has influence upon the success of the project. The objective of describing the Contract Review/Processing Orders process in the written description of the QMS is to ensure that contract requirements are defined, understood, agreed upon and documented prior to the start of work, and to make certain that you will be able to meet the overall requirements before accepting the order.

The written description of the QMS should provide adequate guidance to the personnel of the organization to ensure that:

- the requirements are adequately defined and documented. When an order is received by verbal means, the fitting manufacturer should ensure that the order requirements are agreed upon, documented and accepted by the parties involved prior to the start of work. The process for accepting and documenting the verbal orders should be addressed in the written description of the QMS and detailed in the procedures;

- any differences between the tender and the actual contract are resolved;
- the fitting manufacturer has the capability to meet the contract requirements;
- the process for the amendment of the contract is defined;
- lines of communication between the client and the fitting manufacturer are defined; and
- the authority of both parties is defined.

When an organization has registered a fitting design in their name and sub-contract manufacturing activities, the manner in which the organization controls the entire fitting production including, but not limited to, the control of design, material selection, procurement, manufacturing, inspection, final product testing, marking and any applicable certification must be considered.

3.3.8 Document and Data Control

Requirements

The document control system shall identify the documents that will be controlled, maintained to remain relevant and current under the responsibility of a designated person. The management shall ensure that:

- the controls needed for the development, identification, storage, revision, protection, retrieval, retention time, and disposition of records are addressed;
- a document revision control process is implemented, amendments to the documents are authorized by the Certificate of Authorization Permit holder and processed in a manner to ensure timely availability of the documents at the appropriate location;
- no changes are permitted to the QMS documentation that may render a document to be in non-compliance with the requirements of this AB-541 document, SCA, Regulations and applicable codes and standards throughout the certification period;
- a current version of the written description of the QMS is provided and accepted by ABSA;
- the Statutory Declaration (AB-41) or Declaration of Conformity (AB-351) for all fittings will be maintained current and registration updated accordingly;
- all changes to the documents are managed appropriately, including notification to the affected parties;
- the current issues of the appropriate documentation are available at all relevant locations and to all relevant parties;
- the superseded documents are removed from use throughout the

organization or are appropriately identified as superseded documents;
- the current revision status of documents is identified;
- documents will remain legible, readily identifiable and retrievable; and
- documents of external origin are identified and their distribution controlled.

Implementation Guidance

A written description of the QMS: The QMS should provide information about the management system that is currently in practice and meets the requirements of AB-541 document. Description of the processes, references to documented procedures and the interactions thereof should be included in the written description of the QMS. A written description of the QMS may be developed to follow the sequence of an operation or the structure of a standard (e.g. ISO 9001) or in any other format considered suitable by the organization.

Revision Control: Ensure compliance with the AB-541 document, SCA, Regulations, applicable codes and standards is maintained throughout the certification period, administrative type revisions to the QMS documentation can be made by a Certificate of Authorization Permit holder without seeking acceptance by ABSA.

Example documents to be controlled include:
- A written description of the QMS for the construction of fittings;
- SCA, Regulations, ASME Codes and Standards;
- Contract and review documents;
- Statutory Declaration or Declaration of Conformity forms;
- Fitting Design drawings and calculations;
- Fitting Design registrations;
- Fitting construction drawings;
- Fitting specification documents;
- Material purchase documents;
- Material receiving verification documents;
- Material Test Reports (MTRs) when requested;
- Canadian Registration Number (CRN) documentation for fittings;
- Fabrication documents such as construction Inspection Test Plan (ITP), Travel Sheet and other documents used for fabrication and considered significant by the fitting manufacturer;
- WPSs, PQRs;
- Welder's records;
- PWHT documentation;
- Impact testing documentation;

- NDE procedures, technician's qualification records and reports;
- Radiographic films;
- Pressure test report;
- Measuring and Testing Equipment calibration records;
- Training records;
- Audit reports;
- Management review report of the QMS;
- Corrective Action and Preventive Action records;
- 'Turn Over' package contents;
- Quality System Forms; and
- Any other fitting construction quality documents deemed necessary by the fitting manufacturer.

Records may be maintained in hard copy or electronic format. Electronic systems should be protected from unauthorized alteration. Electronic online document control systems provide an excellent method of displaying, controlling documents and for identifying and directing the reader to the documents that contain detailed requirements, provided the system is secure and readily available at the point of use. For issuance and distribution of documents, including documents issued in electronic format, the system used to control the documents should be described in the written description of the QMS.

3.3.9 Fitting Design

Requirements

A fitting manufacturer shall ensure that:

- the design requirements are identified and documented;
- When New Construction is in the scope of activities, the organization shall have and maintain at least one fitting Category registration in their name;
- the Statutory Declaration (AB-41) or Declaration of Conformity (AB-351) for all fittings is complete and submitted with the applicable drawings, specifications, catalogues, supporting calculations or proof test documentation and a Design Registration Application (AB-31) to ABSA Design Survey;
- the design documents prepared, shall be verified and approved by the designated personnel prior to release for construction;
- the design documents shall contain all information necessary to construct the fitting and include; the code (and edition) of construction, material specifications, design pressure, maximum and minimum design temperatures, WPS and dimensions, joint design details, type and extent of NDE required, Pre Heat and PWHT treatment requirements, test pressure and medium and marking requirements,
- records for each type of fitting manufactured are maintained, and define the size, rating, type and Canadian Registration Number that applies in Alberta or other Provinces where applicable;
- the design code of the applicable ASME code of construction, ASTM/ANSI standards and other related documents are available to design personnel. If extracts are used, they will be identified with the edition, be dated and maintained current.
- the latest approved design documents are made available at the point of use;
- an appropriate management of change process will be utilized to manage changes to the designs. The revision of design calculation and drawings shall be controlled. The existing design shall be reviewed and approved for compliance with the latest mandatory Codes and standards as applicable. This review and approval shall be documented.
- All changes affecting the fitting design will be re-submitted to ABSA design Survey for registration prior to use.

- ABSA Design Survey may require that unusual designs be proof tested in accordance with applicable ASME Codes. The fitting manufacturers shall arrange to have these tests witnessed by an SCO. The test will be documented on a Proof Test Report, which will be signed by the fitting manufacturers and the SCO attesting to the results of the testing.

Implementation Guidance

This section should describe the system for ensuring that fittings are designed in accordance with the requirements of the regulations and applicable ASME/ANSI standards. Fitting Manufacturers should establish and maintain documented procedures for fitting design control and coordination of related activities.

ABSA's design review and registration is based upon the information that is provided by a registrant. ABSA's design review is limited to the verification that the design meets the Act and minimum requirements of the Code of Construction. Registering the design with ABSA does not relieve a registrant, the designer, the fitting manufacturer, owner and other relevant parties, from the responsibility for ensuring that the design is suitable for the intended service, meets the requirements of the owner, the Act and that it will be safe for operations.

All fitting design registrations expire 10 years after the issue date. Prior to starting construction of a fitting, the fittings manufacturer shall verify that the CRN was issued or re-issued within 10 years. If the existing CRN is more than 10 years old the design shall be re-submitted.

Each fitting manufacturer with a New Construction scope of activities shall have and maintain at least one fitting Category registration in their name that can be used for audit demonstration.

For organizations obtaining their initial AQP and unable to obtain a registered design because an approved QMS is not yet achieved, the manufacturer shall obtain a provisional CRN to be used for audit purpose. When audit acceptance has been achieved the organization will complete the fitting registration process and obtain a valid CRN registration. Once complete a Certificate of Authorization Permit for the QMS will be issued.

3.3.10 Purchasing and Material Control

Requirements

- **Purchasing:** A pressure fitting manufacturer shall:
  - specify purchasing responsibilities;
  - specify the process for purchasing the materials and ensure conformance to the material requirements of the engineering design and requirements of the owner; and
  - specify the process for controlling purchase documents.
- **Control of Owner supplied materials:** The fitting manufacturer shall establish a process for verification, storage and maintenance of owner supplied materials.
- **Receiving of materials:** The pressure fitting manufacturer shall ensure that:
  - received materials conform to the correct specifications and quantity, and are not damaged;
  - a process is established for identifying and disposing of non-conforming items.
- **Materials Identification and Traceability:** The pressure fitting manufacturer shall establish a process for identification of materials used for fitting construction while in storage and during the construction phases.
- **Purchasing of subcontracted services:** The pressure fitting manufacturer shall establish a process to verify subcontractor qualifications/certifications and establish a process for the qualification/re-qualification of approved vendors for product processing activities if the manufacturer will subcontract certain processing operations such as material procurement, welding, heat treatment, nondestructive examinations, etc.
- **Evidence the subcontracted organization has a quality control** program in place (when applicable) certified by ABSA, another Canadian regulatory authority, ASME, National Board, or an ISO 9001 registrar.

Implementation Guidance

A fitting manufacturer should establish and maintain documented procedures for contracting services and material control activities such as purchasing, receiving and storage to ensure that the materials are purchased as specified in the engineering design, are defect free on receipt, preserved and remain identifiable.

Purchasing:

The fitting manufacturer should ensure that purchased materials conform to the requirements of the engineering design. A documented procedure for the purchase of materials and/or services should:

- implement a process for generating purchase document;
- specify requirement for proper material specification of ASME/ASTM material such as type, class, grade of materials and the schedule (e.g. SA106 Gr. B, Sch. 80) and Welding consumable's SFA specification and AWS classification;
- specify requirement for MTRs and other applicable Code required documentation when requested; and
- specify requirement for verification and approval of purchase documents.

Receiving of materials:

The fitting manufacturer should ensure that the materials received meet specified purchasing requirements, the requirements of the engineering design, the applicable codes/standards and specifications. The material receivers should be trained to the receiving procedures. The control features should include a process for:

- ensuring that the received materials conform to the correct specifications, quantity, dimensions and that they are not damaged. Availability of a copy of the P.O. to a receiver will help to cross check the Packing Slip and inspect materials to ensure conformance to the requirements of the P.O.;
- ensuring that documentation requested (such as MTRs, CRN documents) is received or is otherwise is available from other sources;
- verifying MTRs and CRN documentation. The extent of verification of the MTRs should be specified;
- identifying, segregation and disposing of non-conforming items;
- ensuring that the materials issued for the construction comply with the specifications of the engineering design.

Materials Identification and Traceability:

The fitting manufacturer should establish and maintain documented procedures for identifying materials used for the fitting construction.

The fitting manufacturer may use unique color coding, heat number, bar code or any other method to maintain traceability of materials. The method(s) used should be documented and personnel trained as necessary. Color code charts should be displayed in the shop, warehouse and receiving areas for easy consultation by the personnel. The material traceability shall be maintained throughout the manufacturing process.

The fitting manufacturer shall establish and implement a process for verification, storage and maintenance of identification for the materials supplied by the owner.

Purchasing of subcontracted services:

If the fitting manufacturer will subcontract processing operations (e.g., welding, heat treatment, nondestructive examinations), the process to verify the qualification of the subcontractors and to approve vendors is to be addressed in the QMS. The fitting manufacturer will ensure that:

- Welding contractors hold a valid Certificate of Authorization Permit issued by ABSA or other acceptable registrar for the scope of work performed and work within the scope of their program.
- The NDE procedures used by the NDE subcontractor meet the requirements of the ASME Section V Code and that the NDE examiners are qualified (min. SNT/ASNT or CGSB level II). The NDE procedures manual shall be retained and documentation shall be maintained to record verification and acceptance of the manual.
- The heat treating procedures manual from heat treatment contractors shall be retained and documentation shall be maintained to record verification and acceptance of the manual.

Vendor selection criteria shall include:

- Verification that the vendor(s) meet the requirements of the Safety Codes Act and Regulations.
- Verification of validity and scope of ABSA Certificate of Authorization Permit when applicable;
- Auditing of the vendors processes and activities for the purpose of initial acceptance and continued compliance.

3.3.11 Process Control/Manufacturing Control

A fitting manufacturer shall establish methods to ensure that the fittings are constructed in accordance with the requirements of the engineering design, the Act and an applicable Code and Standards.

Requirements

A pressure fitting manufacturer shall ensure that:

- a fabrication plan is developed and reviewed with the personnel;
- an ITP (and/or a Construction Travel Sheet) and a job file are initiated prior to the start of the job and maintained;
- up to date and approved drawing(s) is/are available for the construction;

- the materials are available, issued for construction and checked for conformance with the engineering design prior to the start of fabrication;
- welding and other fabrication activities are monitored and documented during production;
- the WPS and dimensions specified in the engineering design are suitable for the job;
- copies of the registered WPS are available to the welders, reviewed with them and implemented effectively;
- the welders are qualified for the job and records of the welders qualification are maintained, including evidence the welder has maintained qualification (i.e. continuity records) as applicable;
- inspection and examination stages are identified, carried out in accordance with the acceptance criteria established by the design documents, documented, verified and records maintained;
- the process for defining the extent of NDE, identification of NDE location, supply of NDE instructions to the NDE subcontractors, review of radiographs and NDE reports and acceptance are defined and documentation maintained;
- PWHT is completed in accordance with requirements of the engineering design, verified and documented;
- pressure testing is accomplished in accordance with requirements of the engineering design and codes, and documented;
- the completed job is certified using proper documentation;
- the final product is properly marked in accordance with applicable codes and standards;
- if the design is the property of the customer, a copy of the registered Statutory Declaration (or Conformity Assessment) for the item shall be obtained and confirmed that it meets the specifications indicated. The fittings manufacturer shall confirm that a valid CRN is available in accordance with the requirements of CSA B51; and
- When manufacturing activities are subcontracted, the manner in which the organization controls the entire fitting production shall be described.

Implementation Guidance

This section should describe the system for ensuring that fittings are constructed in accordance with the requirements of the registered design, the owner's specifications and the Regulations. Responsibilities for implementation of the fitting construction activities should be defined clearly.

ABSA's construction inspection activities are generally limited to Code inspection of boilers, pressure vessels, thermal fluid heaters, direct and indirect fired heaters, and boiler external piping (ASME B31.1). Normally no inspections are carried out by ABSA SCO for the construction of

fittings. **In instances where a Category "H" Fitting Containing Lethal Substances is to be manufactured, inspection by ABSA SCO is required as per CSA B51 Figure 1(c).**

Welding Control (when applicable):

A fitting manufacturer shall ensure that:

- Welding Procedure Specifications and Procedure Qualification Records are prepared, controlled and maintained in accordance ASME BPV Code Section IX and registered with ABSA.
- The welding procedure used is suitable for the job.
- Welders and welding operators are qualified in accordance with ASME BPV Code Section IX and have valid performance qualification cards issued by ABSA or by organizations authorized by ABSA and qualified for the job.
- Implement a system for control of welders and welding operators I.D. and method of identifying each weld to welders and machine welding operators.
- Maintain the continuity record of welders and welding operators in accordance with ASME Section IX.
- Supervise the welding activities and ensure the WPS followed by welders and welding operators.
- Implement a system for storage and issue of welding consumables in accordance with the consumable manufacturer's specifications.

Nondestructive Examination Control (when applicable):

All nondestructive examinations (NDE) shall be completed in accordance with ASME Section V, the referencing code section and customer requirements. The required NDE shall be specified on all drawings approved for construction.

NDE subcontractors are not certified by ABSA. Fitting manufacturers who employ NDE subcontractors should ensure that the NDE subcontractors perform to the documented NDE procedures, that the procedures meet the requirements of applicable code(s) of construction (such as ASME B31.3, 31.1…..codes) and the current ASME Section V Code, employ qualified technicians (min. SNT-TC-1A/ASNT or CGSB Level II for conducting examinations and interpretation of the results), use calibrated equipment and preferably work under a QMS to assure consistency, quality and conformance to the requirements.

Qualification of NDE personnel shall be in accordance with their employer's written practice, which shall be in accordance with the requirements of SNT-TC-1A or ANSA/ASNT CP-189, or a National or international central certification program, such as the ASNT Central

Certification Program (ACCP) or ISO 9712:2021-based programs (such as CGSB). All personnel performing NDE shall be qualified and certified in accordance with SNT-TC-1A, ASNT or CGSB.

The fitting manufacturer shall review and accept the NDE subcontractor's personnel qualifications and certifications, calibrations, Written Practice, and NDE procedures that are approved by the Level III Examiner. The fitting manufacturer shall appoint the NDE subcontractor's Level III Examiner to act on their behalf as their Level III Examiner. A Certifying Statement and Appointment Letter could be used to document this certification and appointment. There shall be evidence available that the Level III Examiner has accepted the appointment.

The fitting manufacturer shall ensure that the NDE subcontractor has applicable written procedures for each method to be used and the NDE examiners are aware of extent and type of NDE required by the job specifications and the acceptable standards. A written instruction for performing NDE should be provided to the NDE subcontractor.

The fitting manufacturer shall review NDE reports and file all NDE reports and radiographs in accordance with the code requirements and their QMS.

Heat Treatment Control (when applicable):

The fitting manufacturer shall assign responsibilities for the implementation and maintenance of the heat treatment procedures and ensure that the heat treatment activities are executed in accordance with the requirements of the engineering design and codes and standards as applicable. The fitting manufacturer shall verify that the subcontractors' heat treatment procedures are adequate for the job and acceptable to the applicable codes and standards.

The fitting manufacturer shall ensure that the heat treatment instructions are prepared and supplied to the heat treatment contractor and ensure that upon completion of the heat treatment of the fitting, the fitting is inspected for damage and to confirm identification.

The fitting manufacturer shall review all heat treatment charts for legibility and compliance with written instructions. The heat treatment charts and Heat Treatment Instructions should be identified and signed and dated by the subcontractor's representative.

The fitting manufacturer shall maintain heat treatment documentation in accordance with their QMS.

3.3.12 Examination and Testing

Requirements

The fitting manufacturer shall ensure that:

- the responsibilities for the examination activities and qualifications of an examiner are defined;
- examination and testing is in accordance with the requirements of the engineering design, the Act and applicable Code and Standards;
- visual examination procedures and personnel qualifications for visual examination, as required by the applicable Codes and Standards are established and documented;
- the type of examination is specified for various stages of construction and that it is performed;
- QMS examination requirements and related procedures are available and understood by the personnel responsible for the examination activities;
- the materials received from the owner(s) and supplier(s) are examined prior to use to assure conformance with the requirements of the engineering design;
- the final examination is carried out in accordance with the documented procedures to complete the evidence of conformance of the finished product to the specified requirements;
- the examination records, which provide evidence that the product has been examined, are maintained;
- NDE required is determined from the design documents;
- procedures used for performing NDE are documented and meet requirements of the current Regulations, ASME Section V and the applicable Code of construction;
- the NDE interpretations are performed by Level II or III technicians;
- written instructions for performing NDE are provided to the subcontractors performing NDE;
- the process for identifying the welding joints or location requiring NDE is documented;
- radiographic films and reports are reviewed and accepted by the fitting manufacturer;
- NDE documents are kept on file for a specified period of time;
- a documented procedure is implemented to safely conduct the pressure tests and the procedure is effective and meets the requirements of the engineering design and Code of construction; and
- When any examination or inspection activities are subcontracted, all procedures will be reviewed and approved.

Implementation Guidance

A fitting manufacturer should demonstrate conformance to the examination procedures to ensure that the specified quality requirements are met at all stages of construction. Examination requirements should be identified for materials received from suppliers; for the construction activities at the fitting manufacturer shop and field sites, and, for the finished product to assure overall conformance to the requirements prior to release of the final products to a client.

A Pressure Test as required by design, construction code or standard is a critical activity that must be performed safely upon completion of all construction activities such as welding, mechanical assembly, PWHT and NDE.

The fitting manufacturer should establish and maintain documented procedures for the pressure testing of fittings. The procedures should describe the processes for ensuring that fittings are pressure tested safely in accordance with requirements of the engineering design, Regulations, and that the personnel responsible for testing are trained to prevent failures during the test. Responsibilities for completion of a pressure test should be defined and understanding confirmed.

PESR Section 30 requires that a pressure test be a hydrotest. If a hydrotest cannot be performed, a pneumatic, hydro pneumatic or an alternate leak test may be performed, provided prior acceptance by an ABSA SCO is obtained.

3.3.13 Identification and Certification

Requirements

The fitting manufacturer shall ensure that:

- The completed fittings be identified/marked in accordance with CSA B51;
- If the quality system includes provision for altering or modifying fittings, the original manufacturing markings will be altered and the process described in the QMS;
- When required by the manufacturing standard, registered design or the quality system, applicable documents certifying the product (e.g., material test report, certificate of conformance or construction data report) be completed;
- When fitting manufacturing activities are contracted, the process of applying the marking shall be described; and

- A copy of the Company Logo or Mark to be included in the AB-41 or AB-351 and applied to fittings shall be provided.

Implementation Guidance

Each completed fitting shall be identified in accordance with CSA B51 and MSS SP-25 accordingly.

Each Category “A” and Category “H” fitting constructed to a Standard that contains specific marking requirements shall be marked in accordance with the Code or Standard of construction. Category “A” fittings that are constructed to a proprietary design shall be marked by following MSS SP-25 as a guide.

Category “E” and “H” fittings that are not Miniature Pressure Vessels shall, as a minimum, be marked in accordance with specification MSS SP-25. Where possible the full identification and marking as shown in the example below should be die-stamped on the fitting or on a nameplate attached to the fitting (if corrosion allowance affects the pressure rating of the fitting, then the rated corrosion allowance will be part of the marking):

(COMPANY LOGO - the marking indicated on Statutory Declaration AB-41)

CRN 0A9999.2 S/N 9199999
MAWP 900 PSI AT 600 DEG. F WITH 1/16 INCH C.A.
MDMT –20 DEG. F AT 900 PSI
YEAR BUILT 2000

Miniature Pressure Vessels registered as category ”E” or “H” fittings (e.g., strainers, separators, etc.) will be identified with a nameplate or through direct stamping in compliance with ASME Code Section VIII, Division 1, paragraph UG-116 with the addition of the CRN number. Alternatively, may be documented on the AB-24, Manufacturer’s Data Report for Miniature Pressure Vessels.

A fitting should be documented on a material test report, a certificate of conformance or a construction data report as required by applicable Code and Standards.

If the quality system includes provision for modifying fittings, the fitting manufacturer shall describe the method how to alter the original markings in the quality system.

3.3.14 Control of Non-conforming Product

Requirements

The pressure fitting manufacturer shall:

- ensure that a documented procedure is established to define the method of identification, documentation, evaluation, segregation, disposition, description of the related responsibilities and authority for dealing with the nonconforming product;
- take action to eliminate the nonconformity in a timely manner;
- verify conformance when a nonconforming product is corrected and released for use.
- Describe the process to disposition non-conformances initiated in subcontracted activities.

Implementation Guidance

This section describes the system for identifying, documenting, and resolving nonconformities found at receiving, during construction, examination, or testing.

Nonconformity is any condition, which does not comply with the applicable rules of the Codes, the QMS and the Jurisdictional requirements as applicable.

The fitting manufacturer shall develop a procedure to describe the control of nonconforming product and addressed all requirements of the manufacturing standard.

Any nonconforming items found at receiving shall either be returned to the supplier or segregated from acceptable materials. If the nonconformity can be corrected, the manufacturer should ensure that item fully meets all specified requirements before releasing it for construction.

Any nonconforming items found during construction shall be removed immediately from the work area and placed on hold and the management shall be informed. The nonconforming item shall be identified with a Hold Tag or by marking "HOLD DO NOT USE" on the item, when applicable.

A Nonconformity Report with details of the nonconformity shall be prepared in accordance the QMS. All proposed nonconformity dispositions shall be approved by the responsible personnel in accordance with the QMS. Hold tags shall only be removed when the nonconformity has been resolved. A copy of the Nonconformity Reports shall be kept in the job file, and a separate Nonconformity Report file should be maintained. All

Nonconformity Reports shall be reviewed periodically (i.e. annually) by the management and corrective actions shall be initiated as required to prevent recurrence.

3.3.15 Quality Records Retention

Requirements

The quality records shall be maintained in accordance with the applicable Codes/Standards and contract requirements. A pressure fitting manufacturer shall ensure that:

- All product quality records and associated documents are traceable to the individual item, maintained and retrievable as described in the QMS;
- All non-product-item-specific records are retained as specified in the QMS (e.g., sales orders, work orders, NDE reports, material test reports, purchase orders);
- All quality records are retained for the length of time specified by applicable Codes or Standards of construction or the QMS; and
- A list of records to be provided by a contracted organization is established.

Implementation Guidance

A fitting manufacturer shall ensure that the quality records be maintained in accordance with the applicable Codes/Standards and contract requirements. As applicable, the following records (but not limited to) will be retained by the fitting manufacturer for a retention period described in the QMS:

- Sales order
- Work order
- Contract and review documents;
- Fitting design calculations and registration documentation;
- Fitting construction drawings and specification documents;
- Material purchase documents;
- Material receiving verification documents;
- Material Test Reports (MTRs) when requested by the clients;
- Fabrication documents such as construction Inspection Test Plan (ITP), Travel Sheet and other documents used for fabrication and considered significant by the fitting manufacturer;
- WPSs, PQRs;
- Welder's records;
- PWHT documentation;
- Impact testing documentation;

- NDE procedures, NDE technician's qualification records and NDE reports;
- Radiographic films;
- Pressure test report;
- Measuring and Testing Equipment calibration records;
- Training records;
- Audit reports;
- Management review report of the QMS;
- Nonconformity reports and Corrective Action and Preventive Action records;
- Quality System Forms; and
- Any other fitting fabrication quality documents deemed necessary by the fitting manufacturer.

All the above records shall be made available to the ABSA auditor at the time of the audit.

3.3.16 Control of Monitoring and Measuring Devices

Requirements

To make certain that monitoring and measuring devices are capable of consistently achieving specified measurement accuracy, and to assure that proper decisions are made for the acceptance of the products, a fitting manufacturer shall ensure that:

- a process is developed for determining which measurements are required to be taken during the construction, examination and testing of fittings, and, for selecting the appropriate equipment that is capable of providing the necessary accuracy and precision;
- measuring and testing equipment are identified, calibrated and adjusted at prescribed intervals, and that the equipment is verified to be in good condition prior to use;
- the equipment is calibrated against internationally or nationally recognized standards;
- the process employed for calibration, and for keeping details of equipment, unique identification, location, frequency of calibrations and checks, calibration method, acceptance criteria and actions required to be taken when the calibration results are unsatisfactory, is defined;
- calibration records of the equipment are maintained;
- the handling, preservation and storage of the equipment is such that the accuracy and fitness for purpose is assured;
- the method for safeguarding the equipment from unauthorized adjustments is defined; and

- the process for ensuring subcontracted services for the control of Monitoring and Measuring Devices is established.

Implementation Guidance

The Monitoring and Measuring Devices that are rented by the manufacturer or those used by external contractors should also be subjected to the above requirements.

The items that are inspected or tested with measuring and test equipment found to be out of calibration shall be re-inspected or re-tested and documented as a nonconformity in accordance with the QMS. If the item has been shipped, the user or his designated agent shall be notified.

3.3.17 Competency and Training

Requirements

A fitting manufacturer shall establish and maintain a documented plan for the training of personnel responsible for the construction of fittings. A training plan shall address the training needs, provision of training, assessment to assure competency and the maintenance of training records.

A process to verify the training, competency and verification requirements of subcontracted services shall be included.

Implementation Guidance

The objective of describing ‘Competency and Training’ in the written description of your QMS is to make certain that personnel constructing fittings are competent on the basis of appropriate education, training, skills and experience.

Responsibilities for the development and implementation of the training program should be defined in the written description of your QMS. The written description of your QMS should address the following key competency developmental activities:

- Development of a documented Training Plan: The plan should identify the job functions for which training may be needed, competency requirements for each job function, identification of individualized training needs, external training sources that may be used, provision

of training, evaluation to assure achievement of competency and effectiveness, and retention of training records;
- Identification of Training Needs: List all job functions and establish training requirements for each function. Assess training needs for each employee on a periodic basis;
- Provide training based upon the training needs established above;
- Evaluation to assure achievement of competency and effectiveness: Post training evaluation and periodic competency checks should be done and documented to assure that training provided produced the desired results; and
- Maintenance of the records of the procedures used, plans developed, training needs, training provided and the evaluation of training.

Personnel who may in any way effect the quality of fitting construction, e.g. the designers, production managers, production supervisors, fitters, welders, purchasers, material receivers, material storage personnel, quality examiners, in-house NDE technicians, pressure testing personnel are some but not all of the personnel who may require training.

ISO 10015, ‘Guidelines for Training’, may be consulted for the development, implementation, maintenance and improvement of training strategies.

3.3.18 Corrective and Preventative Action

Requirements

Responsibilities for the development and implementation of the Corrective and Preventive Action program shall be defined in the written description of the QMS. The fitting manufacturer shall:

- ensure that documented procedures for Corrective and Preventive Action activities are implemented;
- ensure that the procedures include steps to identify a non-conformity, immediate action to dispose of a non-conformity, root cause analysis to determine the action to prevent it from happening again, verification of the effectiveness of the corrective action taken and a reference to the quality document to be utilized;
- ensure that appropriate training is provided to effectively implement the Corrective and Preventive Action program;
- review the Corrective Action and Preventive Action Reports/Forms and logs on a periodic basis, evaluate, establish trends and initiate improvement measures as necessary; and
- maintain the Corrective and Preventive Action program records.

Implementation Guidance

A Corrective and Preventative Action process involves investigation and elimination of causes of nonconforming product/practices and is meant to prevent them from happening again. The systems should provide critical input to the top management to improve the effectiveness of the QMS.

Corrective Action occurs as a result of a reported problem and is considered a reactive approach. Corrective Action should be taken to eliminate the cause of the existing problem with the goal of preventing it from happening again. Corrective Action should not be considered as a disciplinary action or a means in itself, but rather, a problem-solving process that analyzes issues with the intent of improvement.

Preventive Action is the response to information or knowledge that indicates that a potential problem might occur. By analyzing and responding the information the fitting manufacturer can prevent the problem from happening in the first place.

3.3.19 Internal Audits

Requirements

To make certain that the fitting construction meets requirements at each stage of the construction, demonstrate effectiveness of the QMS, and to identify actions for continual improvement, the fitting manufacturer shall:

- develop an internal audit process;
- prepare a schedule for conducting an internal audit;
- carry out an internal audit;
- document the audit results;
- communicate the audit results to the appropriate personnel and management;
- ensure that timely action is taken as a result of the audit findings;
- assure that follow-up action to verify the success of the corrective action taken is defined;
- maintain internal audit records; and
- conduct a periodic review of the audit system and report the results to the management; and
- develop an audit process and schedule for monitoring subcontracted services.

Implementation Guidance

A fitting manufacturer should prepare a plan and procedure(s) which assign responsibilities for the development, maintenance and management of the internal audit process. The process should address the audit schedule, documentation of the audit results, follow up action and communication of the audit results to the appropriate personnel and management. The audit plan and procedure(s) should also assign responsibilities for initiating corrective action, for verifying the effectiveness of the corrective action taken and for the maintenance of the records.

Organizations employing 5 or more employees or contract personnel are required to implement the internal audit program requirements stipulated above. Organizations with fewer than 5 employees or contract personnel are encouraged to conduct internal audits and include the provision in their written description of the QMS. An internal audit process provides the means to any size of fitting manufacturer to help identify deficiencies and non-conformances, take corrective action and continuously improve the effectiveness of the construction processes.

4.0 CERTIFICATION PROCESS

The steps for obtaining a Certificate of Authorization Permit (new and renewals) are outlined as below:

Step 1 - Meeting with ABSA – A meeting is held to provide information about ABSA, and to explain requirements of the Safety Codes Act and Regulations; CSA B51 Code; applicable ASME code(s) of construction; applicable referencing codes such as ASME Section IX for welding and ASME Section V for NDE; requirements of this document; QMS documentation development; Certification Process and achievement of Certificate of Authorization Permit; fees and responsibilities of the Certificate of Authorization Permit holder.

Note: Step 1 is optional for out of province applicants.

Step 2 - Application – Manufacturer submits an Application Form AB-29 along with an application fee. If an organization wants to construct fitting at multiple shop locations under the same company name and under a single registration number, submission of AB-29b is also required.

Step 3 - A written description of the QMS and AB-541b submission – Applicant develops a written description of the QMS that meets the requirements of this document, the Safety Codes Act and Regulations and submits a draft copy of the written description of the QMS and a duly completed AB-541b checklist to ABSA for review.

Step 4 - Site audit – Upon review and acceptance of the written description of the QMS as the basis for an implementation audit by ABSA, the organization shall arrange for a fitting construction project and demonstrate the implementation of the activities applied for. An auditor(s) from ABSA witnesses the implementation of the program, interview personnel to confirm understanding of the quality processes and review documentation as necessary. The auditor uses the organization's written description of the QMS and this document as a guide for conducting the audit, however the effectiveness of the QMS as described in the written description is also evaluated and consequently revisions may be required.

Note: *For pressure fitting construction, a provisional CRN registration will be required for the purpose of the audit.*

Step 5 - Certificate of Authorization Permit – If the site audit is successful, a Certificate of Authorization Permit is issued to the applicant. The normal term of the permit is 3 years.

List of documents that shall be submitted when applying for new certification or for renewals:

- An Application Form AB-29,
- An AB-29b Form for construction and/or R/A fitting at multiple shop locations within Alberta,
- A duly completed AB-541b checklist,
- A draft copy of the written description of the QMS,
- A draft copy of completed AB-41 Statutory Declaration Registration of Fittings or AB-351 Declaration of Conformity, and
- Valid copies of quality management certificates for all subcontracted manufacturing locations.

5.0 FEES

The fees for the certification activities are charged in accordance with the 'Fee Schedule for the Delegated Functions' (available at http://www.absa.ca/fee-schedule/). The application of the fees is described in the attachment to the Application Form AB-29.

6.0 ISO 9001:2015 BASED QMS

Existing or new QMS documentation utilizing ISO 9001:2015 standard shall address the requirements of this AB-541 document. The requirements of this AB-541 document may be addressed anywhere within the QMS documentation as appropriate. When an ISO 9001:2015 based QMS is in use, an additional QMS manual for the construction of fitting is neither required nor recommended. ISO 9001:2015 based quality systems are required to be registered with an ISO registrar.

7.0 SURVEILLANCE AUDITS

A fitting manufacturer shall submit to Surveillance Audits conducted by ABSA. The audits are a part of a surveillance strategy to assure continual conformance to the QMS and the requirements from this AB-541 document. A fitting manufacturer may or may not be given advance notice of the audit. A recommendation to continue certification of your fitting construction program is based upon a favorable report from the auditor. Per section 46 of the SCA, a permit may be suspended or cancelled if a SCO determines that the QMS is not being followed and that the Act is not being complied with.

8.0 REVISION LOG

Edition #	Revision #	Date	Description
1	0	2025-09-01	New document
1	1	2025-10-01	Editorial and content clarifications
1	2	2026-07-13	Reaffirmation