

# Review of Guidelines to Applicant Company for ASME Certification Audit

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## Abstract

This Paper is review of Guidelines for Company undergoing ASME certification of Boiler and Pressure Vessel Code (B&PVC). This paper mainly based on Section I, Section IV, Sections VIII Divisions 1, 2 and 3, and Section XII of the B&PVC. Point covered are only review so some point may vary from company to company.

**Keywords:** U Stamp, Boiler, Pressure Vessel, ASME, ASME Certification.

## 1. Introduction.

An ASME (American Society of Mechanical Engineers) certification audit is a crucial process for companies involved in the design, fabrication, and inspection of pressure vessels, boilers, piping systems, and other critical mechanical systems. ASME certification is a process through which an organization demonstrates that it meets specific standards set by the American Society of Mechanical Engineers (ASME) for various aspects of engineering and manufacturing. This certification is crucial for ensuring quality, safety, and compliance with industry standards.

## 2. General Quality Control System Requirements.

Company should maintain proper QC manual which shows all details of Q.C system that addresses all requirements that are applicable for Code Section like.

- Company name and physical address as it will appear on the Certificate.
- Brief description of product being fabricated at company shop.
- Details of work performed for fabrication.
- Subcontracted activities.
- Manual revision control system.

## 3. Organization

Company should make organization chart showing following points.

- The relationship between management and engineering.
- Purchasing.
- Manufacturing.
- Production.
- Field assembling.
- Field construction.

- Inspection and quality control.

#### **4. Drawing, Design Calculations and Specification Control.**

Company should ensure that all latest applicable Drawing, Design, Calculations, Specification and instruction required by code are used for manufacturing, assembly, examination, inspection and testing.

#### **5. Material Control.**

Company undergoing ASME Certification should make proper documentation records of following points

- Material received is properly identified and is documented like required material certifications, material test report and its application.
- Material should satisfy code requirements as per Section XII.
- If material is substituted then applicable procedure for this activity has to be documented and authorized.
- Process of material handling should be maintained properly from recipe of material.
- Material testing during receiving or during manufacturing, operation should be documented properly.
- Company should check their materials are properly marked, handle, and stored.

#### **6. Correction of Nonconformities**

Company undergoing ASME audit should ensure all nonconformities are resolved or respective actions to be taken to resolve it.

- Identifying those responsible for the resolution of nonconformities.
- Company should make documentation of nonconformities and its preventive action.
- Company should identify and control nonconforming item until final result.

#### **7. Welding / cementing.**

- Company should check welding / cementing conforms to requirements of section IX and construction code as applicable for scope of work.
- Company should ensure that their welder are qualified by education experience and training.
- Company should have maintain proper documentation of training, experience and welder qualification.
- All company welder/ cementing technician should have WPSs / CPSs of their job at work area.
- Company should ensure only qualified welder/ cementing technician are assigned to perform code welding or cementing.
- Company should check their storage and conditioning of covered electrodes and conditioning of cements and their ingredients.
- Company should have control on issuance and return of weld material or disposal of cementing material to assure proper material are used.
- Company should ensure their welding productivity so they can measure work completed by each welder / cementing technician.

Documentation of all above points related to welding department, quality, and production department are maintained properly.

### **8. Non-Destructive Examination.**

- Company should appoint only qualified NDE personal suitable for code section requirements.
- Ensure NDE (UT, MT, PT and VT) examination are performed in accordance with written procedures when required.
- NDE interpretation report and RT films as applicable are maintained in record as per code requirement.
- Company should calibrate their NDE equipment's.

### **9. Heat Treatment.**

Mostly fabrication industries outsource their material for heat treatment so respective company should take needful action and make proper documentation suitable for ASME codes and section.

### **10. Calibration of Measurement and Test Equipment.**

Company should follow proper process for calibration of examination measuring and test equipment used as per application codes requirement. Calibration record should be maintained properly. With respective labels on equipment showing date of calibration and duration.

### **11. Record retentions**

Proper procedure should be maintained to keep records of manufacturing data, reports radiographs record as per required by applicable Section of code.

### **12. SAMPLE FORMS.**

Company should maintain forms used to control functions relative to quality are included within the QC manuals.

Company should make proper record of ASME accredited authorised inspector agency as per section XII class 2 and regular inspection done by Authorised inspector last 3 years.

### **CONCLUSION:**

ASME Certification Audit plays a pivotal role in ensuring that a company not only meets the necessary regulatory and safety standards but also operates efficiently, remains competitive in the market, and mitigates risks. It is a key element of any organization's commitment to delivering high-quality, reliable products and services, particularly in industries where safety and regulatory compliance are non-negotiable. Following points are to be consider before undergoing ASME certification processes.

- Company should maintain proper QC manual.
- Company should maintain proper organization chart.
- Company should ensure that all latest applicable Drawing, Design, Calculations, Specification and instruction required by code are used for manufacturing, assembly, examination, inspection and testing.
- Company used Material should satisfy code requirements as per Section XII. With proper documentation of material certifications, material test report and its application.
- Company undergoing ASME audit should ensure all nonconformities are resolved or respective actions to be taken to resolve it.
- Company should check welding / cementing conforms to requirements of section IX and construction code as applicable for scope of work.

- Ensure NDE (UT, MT, PT and VT) examination are performed in accordance with written procedures when required.

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