Essentials Welding QA/QC Plan Sample

Good for smaller projects and bid qualifications

Has All the Essential Elements of a well-founded Quality Control Plan

Contact:
Ed Caldeira
410-451-8006
Quality Control Plan

[ProjectName]
[ProjectNumber]
# Quality Control Plan

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B. **Key Elements of the Quality Control Plan**

Key elements of the [CompanyName] Quality Control Plan include:

**Quality Management and Responsibilities.** [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Maintain a documented quality system.
- Establish a quality control plan for every steel fabrication project.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project.
- Systematically maintains quality system documents and records.

**Quality Control Personnel.** [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Appoint a QC Manager, Operations Manager, and Project Manager to each project, each with well-defined quality responsibilities and the authority to carry them out.
- Have well-defined quality responsibilities for every employee with specific quality responsibilities for key job positions.
- Plan project quality records and documentation that will be maintained.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project.
- Enforce policies that monitor work conditions before and during work so that quality results are assured.

**Employee and Welder Qualifications.** [CompanyName] ensures that only knowledgeable, capable employees carry out the planning, execution, and control of our projects. We:

- Identify employee qualification requirements, including licensing requirements, training qualifications, responsibilities, and authority for each job position.
- All welding is performed by ASME certified welders.
- All welding inspections are performed by ASME certified welding inspectors.
- Train field employees on quality standards and procedures for their job position.
- Validate employee capabilities before they are assigned to carry out quality job responsibilities.
- Review ongoing employee qualifications and evaluate quality practices and performance as part of the employee performance management process.

**Qualification of Subcontractors and Suppliers.** [CompanyName] purchases only from subcontractors and suppliers that consistently meet [CompanyName] standards for quality. We:
D. Employee and Welder Qualifications

[CompanyName] ensures that only knowledgeable, capable employees carry out the planning, execution, and control of the project.

Personnel Qualifications

The QC Manager qualifies employee capabilities to ensure that they are capable of completely carrying out their assigned quality responsibilities including the following capabilities:

- Knowledge of Company quality standards
- Knowledge of job responsibilities and authority
- Demonstrated skills and knowledge
- Demonstrated ability
- Demonstrated results

The QC Manager also evaluates independent contractor personnel on the same standards that apply to employees.

[CompanyName] requires the following personal certifications:

<table>
<thead>
<tr>
<th>Certification or License Title</th>
<th>Reference Standard No.</th>
<th>Reference Standard Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welders of structural steel</td>
<td>AWS D1.1/D1.1M</td>
<td>Structural Welding Code – Steel</td>
</tr>
<tr>
<td>Inspectors of structural steel welds</td>
<td>AWS D1.1/D1.1M</td>
<td>Structural Welding Code – Steel</td>
</tr>
<tr>
<td>Ultrasonic Inspectors</td>
<td>ASNT SNT-TC-1A</td>
<td>Personnel Qualification and Certification in Nondestructive Testing</td>
</tr>
</tbody>
</table>

Certified Welder Qualification Requirements

Only certified welders may perform welding activities. Certified welders must meet the requirements of AWS Q97-93 American Welding Society Standard for AWS Certified Welders. Only a Certified Welding Inspector can conduct welding tests for the purposes of welder certification.

The Quality Manager approves the qualification of all welders. Work steps for maintaining personnel qualification records are specified in Standard Operating Procedure 2.3.3 Personnel Qualifications.

Certified Welding Inspector Qualification Requirements

Certified welding inspectors must be certified by the American Welding Society to AWS QC1-2007 American Welding Society Standard for AWS Certification of Welding Inspectors.

The Quality Manager approves the qualification of all certified welding inspectors.
F. PROJECT QUALITY SPECIFICATIONS

Fulfilling customer contract expectations is a primary objective of the [CompanyName] Quality System. To ensure that customer expectations will be fulfilled, [CompanyName] clearly defines the requirements for each contract before it is approved.

The Project Manager ensures that the information in customer contracts clearly defines customer expectations and that the necessary details are provided to set requirements for Steel Fabrication.

[CompanyName] personnel and subcontractors are accountable for compliance to standards-based on written specifications.

To achieve expectations reliably and consistently, specifications are clearly spelled out, not only for results but also for processes. Specifications apply to materials, work steps, qualified personnel and subcontractors, safe work rules, and environmental work conditions.

Standards ensure that materials, methods, and results are specified rather than left to discretionary practices.

All [CompanyName] Steel Fabrication activities comply with generally accepted good workmanship practices and industry standards.

WELDING QUALITY STANDARDS

All [CompanyName] Steel Fabrication activities comply with generally accepted good workmanship practices and industry standards.

The QC Manager identifies supplemental requirements for industry standards that apply to a specific project on the Project Quality Control Plan when it is not otherwise specified by the contract, contract technical specifications, or approved drawings.

[CompanyName] complies with the following industry standard(s) included on the Applicable Regulatory Codes and Industry Standards Form included in this section.
# Applicable Regulatory Codes and Industry Standards

<table>
<thead>
<tr>
<th>Contract Specification Reference #</th>
<th>Schedule Activity #</th>
<th>Description</th>
<th>Reference Standard Number</th>
<th>Reference Standard Title</th>
<th>Remarks</th>
<th>Tested By</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Beveling, alignment, heat treatment, and inspection of weld</td>
<td>ASME B31.1</td>
<td>Power Piping</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Requirements for piping of fluids</td>
<td>ASME B31.3</td>
<td>Process Piping</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Workmanship and techniques for welded construction</td>
<td>AWS D1.1/D1.1M</td>
<td>Structural Welding Code – Steel</td>
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</tbody>
</table>
G. MATERIAL AND HEAT TRACEABILITY

Products and materials are controlled to assure the use of only correct and acceptable items. Controls include identification of the inspection status. Materials that require lot control traceability and the method of traceability are listed on the Controlled Materials form included as an exhibit in this subsection.

IDENTIFICATION OF LOT CONTROLLED MATERIALS

The Quality Manager determines types of project materials that require quality controls. For each type of quality-controlled material, the Quality Manager determines lot control traceability requirements, if any, and specifies the means of lot identification. Identification methods may include physical labels, tags, markings and/or attached certification documents.

The Operations Manager maintains lot identification at all production phases from receipt, through production, installation, or assembly, to final completion. Acceptable methods for preserving lot identification include physically preserving observable lot identifications, recording the lot identification on a work task quality inspection form or other work record, or collecting the physical lot identifier as a record along with supplemented with location.

If lot controlled materials are without lot identification, the Operations Manager deems the materials as nonconforming and segregates them and/or clearly marks them to prevent inadvertent use. Only the Quality Manager can re-identify or re-certify the materials.

Types of metals controlled materials include:

- Carbon steel
- Galvanized steel
- Aluminum
- Stainless steel

Lot identification of metals includes:

- Color code is painted on all four corners of each piece of material.
- Material supplier heat number is either marked by the material supplier or reproduced by the Supervisor. As an alternative an adhesive label or tag on the bundle is an acceptable method.

MATERIAL RECEIVING AND INSPECTION

When lot controlled materials are received, the Superintendent inspects the materials and verifies that materials have the specified lot identifications. Received materials are listed on the Material Receiving and Inspection Report form or Metals Materials Receiving and Inspection form included as an exhibit in this subsection.
# Metals Material Receiving Inspection Report

**Version** March 13, 2012

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Name</th>
<th>P.O.#</th>
<th>Supplier</th>
<th>Receipt Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ProjectNumber]</td>
<td>[ProjectName]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Material (i.e., steel plate)</th>
<th>Material Description (nominal dimensions)</th>
<th>Heat Number/Serial Number/Markings</th>
<th>Condition / Damage</th>
<th>Color Code Marking</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Receiving Inspector Approval Signature / Date</th>
<th>Government Representative Name/Approval Date</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

- Material Receiving Inspection Passed

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*Essentials Welding Quality Control Plan*

*Copyright*
LIST OF INCLUDED INSPECTION FORMS FOR WELDING

METALS
- Metal Decking
- Metal Railings
- Metal Stairs
- Structural Steel Framing

PLUMBING
- Electric Domestic Water Heaters
- Facility Potable-Water Storage Tanks
- Facility Sanitary Sewerage
- Facility Storm Drainage
- Facility Water Distribution
- Fuel-Fired Domestic Water Heaters
- Plumbing Fixtures
- Plumbing Insulation

HVAC
- Air Outlets and Inlets
- Air Terminal Units
- Breechings//Chimneys// and Stacks
- Central Cooling Equipment
- Commissioning of HVAC
- Cooling Towers
- Facility Fuel-Oil Piping
- Facility Fuel-Storage Tanks
- Facility Natural-Gas Piping
- Furnaces
- Heating Boilers
- HVAC Air Cleaning Devices
- HVAC Ducts and Casings
- HVAC Fans
- HVAC Insulation
- HVAC Piping and Pumps
- HVAC Water Treatment
- Indoor Central-Station Air-Handling Units
- Instrumentation and Control for HVAC
- Refrigerant Piping
- Testing// Adjusting// and Balancing for HVAC

Questions? Call Ed Caldeira 410-451-8006
**Compliance Verification**

- Compliance with initial job-ready requirements
- Compliance with material inspection and tests
- Compliance with work in process first article inspection requirements
- Compliance with work in process inspection requirements
- Compliance with Task completion inspection requirements
- Compliance with inspection and test plan
- Compliance with safety policies and procedures

Reported Nonconformances and incomplete items:

**FTQ 2TQ  Heightened Awareness Checkpoints**

- Shop applied primer and galvanizing intact and without blemishes **2580**
- Drainage holes installed to prevent water traps with unobstructed openings **2581**
- Bearing base plates fully and evenly supported **2582**
- Connecting bolts, washers, and nuts tight and clean of dirt/rust **2583**
- Welded connections continuous, even, clean, and free of blow holes or other irregularities **2584**
- Connecting hardware and welds primed with paint of the same quality as the shop coat **2585**
- Openings in structural members approved by ENGINEER **2586**
- Spray-on fireproofing evenly applied and without gaps **2587**
- Framing members free of twist, bow, buckle, or other directional irregularity **2588**
- Framing members installed plumb, level, and true to line **2589**

### FTQ Scores and Completion Sign-off

#### Field Mgmt.-Superintendent Inspection 91.45.01

**Quality**

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>On-Time</td>
</tr>
<tr>
<td>4</td>
<td>4 = 1 minor problems</td>
</tr>
<tr>
<td>3</td>
<td>3 = Hotspot or 2-3 minor</td>
</tr>
<tr>
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Sign and date*: Cell # / ID #:
Signed: _________________________________  Date: _________________

Task has been verified complete and in compliance with contract drawings and specifications except for non-conformances and incomplete items reported above.

#### Field Mgmt.-QA Inspection 91.45.02

**Quality**

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- Compliance with work in process inspection requirements
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- Compliance with inspection and test plan
- Compliance with safety policies and procedures

Reported Nonconformances and incomplete items:

- FTQ 2TQ  Heightened Awareness Checkpoints
  - Tanks are UL or NSF certified 1345
  - Tanks are securely mounted to structural supports 1346
  - Level / Pressure indicator visible 1347
  - Tank protected from traffic damage 1348
  - Tank secured from floatation 1349
  - Corrosion protection coating intact 1350
  - Tank is level and plumb 1351
  - Adequate pre-charge on pressure tanks 1352
  - Venting / Pressure relief is provided 1353
  - Vent openings are screened against insect intrusion 1354
  - Tank connections tight and leak proof 1355
  - Access ways secure against unauthorized entry 1356

## FTQ Scores and Completion Sign-off

### Field Mgmt.-Superintendent Inspection 91.45.01

**Quality** 5 4 3 2 1 | **Notes:**
---|---

**On-Time** 5 4 3 2 1 | **Notes:**
---|---

**Safety** 5 4 3 2 1 | **Notes:**
---|---

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### Field Mgmt.-QA Inspection 91.45.02

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Reported Nonconformances and incomplete items:
- Relief valves discharge to approved areas 1572
- No shutoff valves inline with safety/relief valves 1573
- No restrictions to air flow into combustion chamber 1574
- Boilers installed with clearance for inspection and maintenance 1575
- Pumps balanced and free of excessive vibration/noise 1576
- Pipe fittings tight and free of leaks 1577
- Readouts and indicators clearly visible 1578
- Boilers registered in accordance with local requirements 1579
- Operational set points noted in Operation and Maintenance Manuals 1580
- Operation and Maintenance Manuals supplied to Owner 1581

FTQ Scores and Completion Sign-off

Field Mgmt.-Superintendent Inspection 91.45.01
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EdC@FirstTimeQuality.com