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Quality System Manual

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PK Metal Works Official Copy

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1. Scope and Aims of Manual

The Quality System Manual outlines how PK Metal Works Ltd. ensures the quality of their products right from issuing a bid, through production, and finally to shipment of the completed product. Its purpose is to enhance the understanding of and commitment to the Quality System by all of PK Metal Works Ltd's constituents. The Quality System Manual conforms to the CISC Steel Fabrication Quality System Guidelines.

2. Normative Reference

References to the following documents, when made in this manual, indicate the most current edition.

1. CSA S16
2. CSA W59
3. CSA W47.1
4. CISC Steel Fabrication Quality System Guidelines
5. PK Metal Works Ltd. Procedures Manual [S:\Company Manuals\Private\Quality System Manual Rev.2.docx]
6. CISC Code of Standard Practice
7. PK Metal Works Ltd. Non-Compliance Report[S:\Forms\Non Compliance Report Rev. 1.docx]

3. Terms and Definitions

Corrective Action

Actions used to eliminate the cause of a detected nonconformity or other undesirable situation.

Defect

A Defect is the non-fulfillment of a requirement that is recognized and corrected while in current process. For example, a misplaced cleat detected at the fit checking stage may be directed back to the fitting station for proper relocation may be considered a defect and not a nonconformity.

Document

Information and its supporting medium used to define and/or establish quality requirements.

Nonconformity

Nonconformity is the non-fulfillment of a requirement.

Objective Evidence

Objective evidence is data supporting the existence or verity of something.

Preventive Action

Actions used to eliminate the cause of a potential nonconformity or other undesirable potential situation.

Quality Assurance

Quality assurance means to establish measures to prevent problems and to demonstrate that such measures are taken and are effective, providing confidence that quality requirements will be fulfilled.

Quality Control

Quality control encompasses activities aimed at determining whether results obtained through an activity conform to stated objective for this activity.

Quality Management System

A System to establish the policy and objectives required to direct and control an organization with respect to quality and to achieve those objectives.

Quality Objective

An aim or goal related to improvement in the quality system.

Quality Policy

Overall intention and direction of an organization related to quality as formally expressed by senior level management

Record

A record is something stating results achieved or providing evidence of activities performed.

Root Cause

A root cause is the initial and main reason why an event occurs. In corrective action, the removable factor leading to the elimination of future nonconformity.

4. Management Responsibility**4.1. Management Commitment**

PK Metal Works Ltd. is committed to have on-going improvement in the quality and delivery of all fabricated products and services, at a competitive price, and to maintain PK Metal Works' position as fabricator of choice.

PK Metal Works Ltd. Quality System Objectives are as follows:

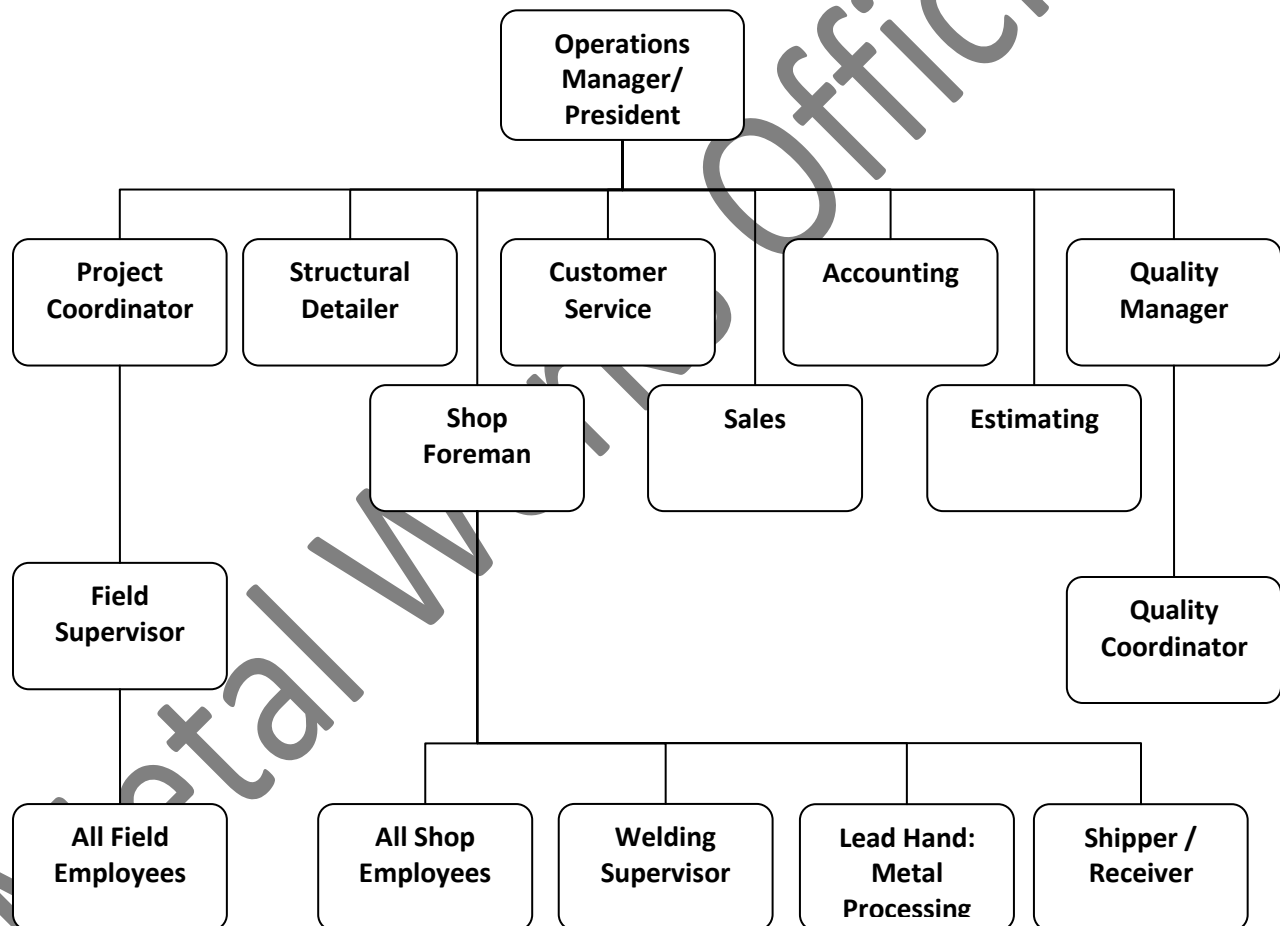
1. Ensure all purchased materials meet contract standards and project requirements.
2. Ensure compliance with all documented procedures.
3. Ensure that all contracts are satisfied and projects are completed to specifications reviewed and understood prior to start of customer requirements and specifications.
4. Ensure all Quality System documentation is updated, controlled, and maintained as necessary to promote continuous quality improvement.
5. Ensure all subcontractors and suppliers meet and adhere to the Quality System Manual.
6. Eliminate fabrication errors by continually improving fabrication processes.
7. Ensure non-conformities are discovered prior to customer receipt and the root cause of the non-conformity is understood.

Senior management is responsible for the overall development of a commitment to quality, directing the company to achieve that quality and providing adequate resources to enable the company to maintain and improve on that quality.

It is the responsibility of the Quality Coordinator to ensure that the requirements of the Quality System are maintained and coordinated. The Quality System shall be subjected to periodic review by the Quality Manager at least once a year as per the Quality System Review procedure found in the Procedures Manual. Additional reviews shall be performed at the Operation Manager's discretion.

The Quality System information shall be communicated to the employees via employee orientations, established procedures, and during Tool Box Meetings as required. It is the responsibility of upper management to ensure that all employees fully understand their responsibilities and contributions to the Quality System.

4.2. Organizational Structure



4.3. Responsibility and Authority

Every employee is responsible for the quality of his or her work and carries an equally important share in the effectiveness of the quality assurance process. As such, all employees are responsible to ensure that the work performed by them conforms to the standard of workmanship required by the company in accordance with the applicable contract requirements.

Management is responsible for the effective communication and understanding of all the duties and responsibilities that affect quality. This information is conveyed to the employees via employee orientations, company procedure manuals and Tool Box Meetings as needed.

The Operations Manager, Shop Foreman, and Project Coordinator are responsible for ensuring that all product quality verifications are carried out on a continuous basis.

The Operations Manager and Shop Foreman are responsible for dealing with nonconformities, of a technical and nontechnical nature, and ensuring that the specified dispositions are carried out on a continuing basis.

The Project Coordinator and Shop Foreman are responsible for communicating with the customer's appointed inspection representative and for providing sufficient notice and making proper arrangements for required inspections.

The Operations Manager, Project Coordinator and the Shop Foreman are responsible for ensuring that all work is carried out in accordance with the applicable codes and standards.

The Welding Supervisor is responsible for ensuring all welding is in accordance with the latest requirements of CSA Standards W47.1 and W59.

The Shop Foreman is responsible for ensuring that all production personnel understand the contract requirements pertinent to their assignment.

The Estimator, Customer Service Representative, and the Structural Detailer are responsible for ensuring all contract requirements, including revisions, are conveyed to the relevant departments and incorporated into the detail drawings and other fabrication data.

The Operations Manager, Project Coordinator, and Shop Foreman are responsible for purchasing all items in accordance with the contract requirements, including revisions and obtaining the required documentation.

5. Control of Documents

5.1 Quality Documents

5.1.1 Contract Drawings, Specifications, and Amendments

During the quotation process the contract drawings, specifications and amendments are received by the Estimator. The Estimator is responsible for ensuring that the most recent revisions are maintained in the

bid package. Previous revisions shall be disposed of in a timely manner. Upon receiving the customer's purchase order the bid package is included in the job package.

The Issued for Construction drawings, specifications, and amendments are received by either the Estimator or the Structural Detailer. The Structural Detailer is responsible for ensuring that the most recent revisions are maintained in the job package. Previous revisions shall be disposed of in a timely manner.

5.1.2. Shop Drawings

The Structural Detailer prepares all shop drawings from Certified for Construction contract documents as per the Design and Drafting Procedures found in the Procedures Manual. The preparation, use, and approval of these documents conform to Section 5 of the CISC Code of Standard Practice. Any revisions shall be dealt with in the same manner as the original shop drawings.

Shop drawings are considered controlled documents. One copy shall be issued to the shop, to be stamped with the Shop Copy stamp, and one copy shall be kept in the job package. Copies of the shop drawings shall be issued to the customer as per their requirements. If any changes to the drawings are made the previous revision shall be disposed of immediately and replaced with the new revision.

5.1.3. Welding Documents

All welding documentation is in accordance with CSA W47.1 standards. All certified Welding Procedure Specifications and Welding Procedure Data Sheets are available to all employees and customers for review as required. The original specifications and data sheets are kept in the office at all times. Copies may be issued as per customer requirements.

5.1.4. Purchase Orders

The customer purchase order that indicates the extent of the project being ordered will be checked by the Estimator against the quote issued for discrepancies and is then included in the job package.

5.1.5. Quality System Manual

The Quality System Manual shall be treated as a controlled document. As such controlled copies shall be issued to authorized personnel as per the Controlled Document List. All controlled copies shall have an Official Copy watermark on every page. Uncontrolled copies may be issued at the discretion of the Quality Manager and shall not be subjected to update when a new revision has been issued. All uncontrolled copies shall have an Unofficial Copy watermark on every page.

When a new revision of the Quality System Manual has been issued all controlled copies of the previous revision shall be disposed of and replaced with the new revision without undue delay.

5.2. Quality Records

5.2.1. Contract Drawings, Specifications, and Amendments

Once a job has been ordered a job package is created. Only one copy of the current contract drawings, specifications and amendments are to be kept in the job package. Previous revisions are to be disposed of in a timely manner. Job packages are to be kept for a period of six years after the date of completion for the job.

5.2.2. Shop Drawings

All shop drawings issued to the shop floor are stamped with the Shop Copy stamp and the PK Metal Works Ltd. process stamp. The process stamp lists all possible steps that the job could go through. The appropriate sections, as determined by the contact documents, are signed off and dated by the employee completing the task. When the job has been completed and shipped to the customer the shop drawings are included in the job package.

5.2.3. Mill Test Reports

Mill certificates are requested for all material ordered. If specified in the customer contract documents one copy of the mill certificate is attached to the job package and one copy is added to the master Mill Cert binder. Copies kept in the Mill Cert Master binder are kept for a period of three years.

5.2.4. Purchase Orders

Order verifications are stamped with the purchase order stamp and are then treated as a purchase order as per the Purchasing Procedure found in the Procedures Manual. All purchase orders issued for a specific job shall use the job number as the purchase order number and be included in that job package. Purchase orders issued for stock material shall use "Stock" as the purchase order number.

5.2.5. Inspections and Test Records

Visual inspections are performed on all welds during the fabrication process and signed off on the shop drawing as completed. Prior to shipment the finished product is compared to shop drawings and other pertinent customer requirements to ensure conformance and is signed off on the shop drawings. Additional inspections and testing are performed by a subcontracted inspection company as per customer requirements stated in the contact documents. When additional testing or inspections is required the resulting report is added to the job package.

5.2.6. Calibration Records for Measuring and Inspection Equipment

Any measuring or inspection equipment used by PK Metal Works Ltd. is disposed of when out of tolerance (measuring tape, levels, etc.). The subcontracted inspection company that is used for additional inspections or testing is responsible for maintaining calibration records for their machines. These records must be made available to PK Metal Works Ltd. upon request.

5.2.7. Shipping and Receiving Reports

Whenever any material is shipped out for a job the Bill of Lading and the Packing slip shall be filled out as per the Shipping and Receiving Procedure found in the Procedures Manual. The white copy shall then be included in the job package.

When material is received the packing slip and waybill shall be matched to the supplier's invoice and filed in Accounts Payable.

5.2.8. Nonconformity, Corrective Action, and Preventative Action Reports

When a defect or nonconformity is discovered a Non-Compliance Report is filled out as per the Deficiencies/Complaints section of the Procedures Manual. If the defect or nonconformity is a once off occurrence then the appropriate corrective action is then undertaken to correct it. However, if the defect or nonconformity is discovered to be reoccurring then preventative actions will be instituted to eliminate the problem. One copy of the completed Non-Compliance Report is included in the job package and one copy is added to the Non-Compliance binder.

6. Resource Management

PK Metal Works Ltd. is dedicated to providing adequate resources, whether they are personnel, equipment, supplies, or testing, to ensure that all work complies with the quality standards that have been established and with customer requirements.

6.1. Welding Personnel

Welders, welding operators, tack welders, welding supervisors, and welding engineers shall be qualified to the requirements of the latest issue of CSA standard W47.1.

6.2. Job Descriptions

Current job descriptions outlining hiring, education, training, and other qualification criteria are maintained for all positions within the company. These job descriptions can be found in the Job Descriptions network folder.

7. Process Management

7.1. Q.C. Planning

At each stage of a job's progress through the company the employee responsible for that stage determines which quality checks are required as per customer requirements found in the contact documents, established quality procedures found in this manual and established procedures found in the Procedures Manual.

7.2. Contract Review

The Estimator will review the customer's bid documentation while in tender to determine whether PK Metal Works Ltd. is able to meet all requirements in the time frame stipulated prior to issuing a quote as per the Quotation Procedures found in the Procedures Manual.

Upon receipt of a customer's purchase order the customer contract specifications are reviewed by the Estimator to verify all of the requirements necessary for the successful completion of the job. The Estimator is then responsible for conveying the requirements to the appropriate departments or personnel as per the New Orders Procedure found in the Procedures Manual.

The Estimator or the Structural Detailer receives the initial Issued for Construction drawings and is responsible for disseminating this information to the appropriate departments or personnel. Upon receipt of Issued for Construction Drawings the Structural detailer is responsible for reviewing and comparing them to the bid documents. The Structural Detailer receives any ongoing Issued for Construction drawings and is responsible for including any changes into the shop drawings as per the Drawings Procedure found in the Procedures Manual.

7.3. Purchasing

The Operations Manager, the Shop Foreman, and the Project Coordinator are authorized to issue purchase orders for materials required as per the Purchasing Procedures found in the Procedures Manual. If the material being ordered is for a specific job then the job number is used as the purchase order number. The order confirmation issued by the supplier is used as the purchase order. A copy of

the purchase order shall be given to the Shipper/Receiver for verification purposes. Upon receipt of the ordered materials the purchase order is then included in the job package.

All subcontractor work shall be inspected for verification of accuracy prior to shipment as per Subcontractor Inspections Procedure found in the Procedures Manual. Any non-conformances shall be reported immediately.

7.4. Receiving

Incoming material shall be compared, by the Shipper/Receiver, to the receiving slip and the purchase order to verify the accuracy of the shipment. Non-conformances shall be reported immediately to the purchaser. The purchaser shall then contact the supplier to resolve the issue in a timely manner.

All materials shall be inspected prior to being released for use to ensure conformity to set requirements as per the Material Inspection Procedure found in the Procedures Manual.

7.5. Material Verification

When material has been ordered for a specific job the Shipper/Receiver shall mark the material with the job number upon receipt and store it in the area that has been designated for that particular job.

Stock material that is of a standard quality is not color coded and placed in the designated area according to type of material. Stock material that is not of a standard quality is color coded as per the Receiving Procedure found in the Procedures Manual. The Shipper/Receiver is responsible for color coding when material is received.

7.6. Control of Workmanship

All workmanship and tolerances shall conform to the applicable clauses in CSA Standards S16, W59 and to the CISC Code of Standard Practices.

All Fabricators performing welding shall be certified by the Canadian Welding Bureau in accordance with the requirements of CSA Standard W47.1.

Manufacturing operations shall be carried out under controlled shop conditions. Conditions that shall be controlled include air wind, moisture, temperature, and lighting.

All tools and equipment used shall be suitable to perform the work required and shall be in proper working order. Maintenance and repair shall be carried out on equipment and tools as per the Maintenance Procedures found in the Procedures Manual.

7.7. Product Verification

All material is checked against customer contract requirements prior to shipment as per the Product Verification Procedure found in the Procedure Manual. Any additional inspection requirements noted in the contract documents shall be identified and implemented.

PK Metal Works Ltd. shall provide access to and coordination with the customer's designated representative for inspection of the work as required. Unless specific provisions are included in the contract documents, such inspections shall be scheduled so as not to impede the progress of production.

7.8. Customer Supplied Products

All customer supplied products will be visually inspected upon receipt to ensure compliance with customer supplied documentation and to detect nonconformities. The customer shall be notified promptly if any item is found to be damaged, incomplete or otherwise unsuitable. Unless otherwise specified in the contract documents, it is the responsibility of the customer to conform to the contract requirements.

7.9. Storage, Loading and Shipping

All completed materials shall be packaged and stored in the designated area as per the customer contract documents and the Shipping & Receiving Procedures found in the Procedures Manual.

The Shipper/Receiver is responsible for ensuring that all completed materials are properly loaded as per the customer contract documents, the shipping company's requirements and the Shipping & Receiving Procedures found in the Procedures Manual.

The Shipper/Receiver shall ensure that all items to be shipped are accurately recorded and that the items being loaded correspond to the shipping documentation as per the Shipping & Receiving Procedures found in the Procedure Manual.

7.10. Control of Measuring and Inspection Equipment

Measuring and inspection equipment is periodically checked for accuracy as per the Measuring and Inspection Equipment procedure found in the Procedures Manual. An annual inspection of all measuring and inspection equipment is conducted in addition to the employees checking the accuracy during the course of their work.

8. Measurement, Analysis and Improvement

8.1. Control of Nonconformity

Minor nonconformities that can be fixed quickly must be brought to the Shop Foreman's attention; a Non Compliance Report does not need to be filled out. Whether the nonconformity is regarded as minor is determined as per the Deficiencies/Complaints procedure found in the Procedures Manual. All other nonconformities shall be handled using the Non Compliance Report as per the Deficiencies/Complaints procedure found in the Procedures Manual.

8.2. Corrective Action

Individual Non Compliance Reports are evaluated to determine whether corrective action is deemed necessary as per the Deficiencies/Complaints procedure found in the Procedures Manual.

8.3. Preventative Action

Non Compliance Reports are reviewed regularly by the Operations Manager in order to determine if there are any trends developing and what preventative action should be taken to eliminate future non-compliance issues as per the Deficiencies/Complaints procedure found in the Procedures Manual.

8.4. Analysis of Data

Regular review and analysis of the data collected in accordance with the Quality System Manual shall be performed in order to verify conformance to customer requirements and that quality is being maintained throughout the company.

Upon regular review of the Non Compliance Reports, and in conjunction with other data available to the Operations Manager, improvement objectives shall be set as necessary for improvements to the Quality Management System.

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