



CARPENTER

# **Carpenter Technology Corporation**

## **Quality Manual**

**Rev. 30**

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## Introduction

Carpenter Technology Corp. has developed and implemented a Quality Management System (QMS) in order to document best business practices, better satisfy the requirements and expectations of our customers and to continually improve the overall management of our business operations.

The QMS of Carpenter Technology Corp. is written to meet the requirements of the International Standards SAE AS9100C., AS9120 Rev A., and ISO 9001:2008, plus 10CFR 50, Appendix B. This system addresses the development and production of Carpenter Technology Corp.'s products and processes.

This Quality Manual describes the QMS, delineates authorities, inter relationships and responsibilities of the personnel responsible for performing within the system. The SQP Reference Matrix references procedures for all activities comprising the QMS to ensure compliance to the necessary requirements of the standards. The SQP Reference Matrix is available in a controlled electronic database.

This Quality Manual is used externally to introduce our QMS to our customers and other external organizations. The Quality Manual is used to familiarize them with the controls that have been implemented and to assure them that the integrity of the QMS is maintained and focused on customer satisfaction, continual improvement, organizational environment and associated risks, varying needs and objectives, our products and processes and our organizational structure.

## Section 1 Scope

### 1.1 General

This Quality Manual outlines the policies, procedures and requirements of the Carpenter Technology, Corp. Quality Management System. The system is structured to comply with the conditions set forth in the International Standard SAE AS9100C, AS9120 Rev. A, ISO 9001:2008, and 10CFR50, Appendix B.

### 1.2 Application

This Quality Manual describes all aspects of the QMS for the sites identified in Table I. This encompasses administration, control of purchases, control of vendors and subcontractors, quality development, process and quality control systems for manufacturing, problem analysis and corrective action, programs for checking test instruments and personnel, and audits.

Department and/or position titles referenced here-in are typical for Reading operations. Non-Reading sites covered by this manual conduct the same responsibilities as they apply to their facility but may be performed by other positions/titles.

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**Table I Certifications by Site**

Site Location	Product	AS9100C Certification	AS9120 A Certification	ISO9001:2008 Certification	NADCAP Certification	ISO 17025 Certification
Head Office and Main Manufacturing Site Reading, PA	Develop, Manufacture, Procurement, Processing and Warehouse of Specialty Steel Products	X	X	X	Materials testing - Mechanical testing Chemical Heat Treat NDE (ultrasonic)	Materials testing - Mechanical testing Chemical
Carpenter Specialty Wire Products (CSWP) Orangeburg, SC	Small dia wire, flat rolled ribbon			X		
Shalmet Deer Lake, PA	Processing of bar and wire specialty products			X	Materials testing - Mechanical testing	Materials testing - Mechanical testing
Shalmet Elyria, OH	Processing of bar and wire specialty products			X		
Talley Metals McBee, SC	Processing of bar and wire specialty products	X		X		
International Sales Offices Singapore Canada	Sales, Procurement		X X	X X		
International Service Centers Brussels UK Suzhou, China	Sales, Procurement and warehousing		X X X	X X X		

## Section 2.0 Quality Management System References

The quality system requirements imposed by the applicable regulatory authorities and those applicable government and industry standards were considered during the development of the Carpenter Technology Corp. QMS and shall be used for continuous updating of this Quality Manual and applicable procedures. A list of these authorities and standards is maintained by Quality Assurance.

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## Section 3.0 Deliberate Malpractice

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Deliberate Malpractice is an intentional deviation from documented and approved procedures that could affect the quality or performance of product. Areas most sensitive to deliberate malpractice include:

- Falsification of processing or inspection records.
- Failure to follow procedural steps in the prescribed order and within specified limits.
- False identification of work in process or final product.
- Substitution of alternate materials without correction of records.
- Substitution of retest data without documentation and approval.
- Failure to document inadvertent departure from approved specifications or procedures.

Employees are made aware of their responsibilities concerning deliberate malpractice through several means.

A posting which includes Section 206 of the Energy Reorganization Act of 1974 and Title 10, Chapter 1, Code of Federal Regulations Part 21 10 CFR Part 21 is maintained on all permanent boards within all locations.

Carpenter Technology Corp. maintains a procedure to further support this posting titled "Federal Laws and Regulations Regarding Reporting of Defects in Products, Noncompliance with Specification and Deliberate Malpractice".

Quality Assurance shall review 10 CFR Part 21 annually, and updated notices defining deliberate malpractice are issued and posted on bulletin boards as required.

Internal quality systems audits address the topic of deliberate malpractice.

## Section 4 - Quality Management System

### 4.1 General Requirements:

Carpenter Technology Corp. has established, documented and implemented a QMS in accordance with the requirements of AS9100C., AS9120 Rev A., ISO 9001:2008, and 10 CFR 50, Appendix B. The system is maintained and continually improved through the use of the quality policy, quality objectives, audit results, analysis of data, risk assessments, corrective and preventive actions and management reviews.

To design and implement the QMS Carpenter Technology Corp. has:

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- a) Identified the processes needed for the QMS and their application throughout the organization and documented them on the Process Flow Diagram at the end of this section of the Quality Manual.
- b) Determined the sequence and interaction of these processes, and illustrated them on the Process Interaction Chart
- c) Determined criteria and methods needed to ensure that the operation and control of the processes are effective, and documented them in quality plans, work instructions and the Measuring, Monitoring and Analysis Instructions.
- d) Ensured the continuing availability of resources and information necessary to achieve planned results and continual improvement of these processes.
- e) Established systems to monitor, measure where applicable, and analyze these processes,
- f) Established processes to identify and implement actions necessary to achieve planned results and continual improvement of these processes.
- g) These processes shall be managed in accordance with the requirements of the latest revisions of AS9100 and AS9120.
- h) Where processes that affect product conformity with requirements are outsourced, control over these processes shall be ensured. Control of such outsourced processes shall be identified within the QMS.

## 4.2 Documentation Requirements:

### 4.2.1 General

Carpenter Technology Corp. utilizes a three-tiered documentation system hierarchy. This manual represents the first tier and defines our philosophy and policies. Principles and strategies are defined by second-tier detailed procedures called Standard Quality Procedures (SQPs). Practices are defined by third tier documents called Standard Operating Procedures (SOPs). These documents, along with various supplemental procedures (i.e., manufacturing lineups, melt procedures, inspection procedures, etc.), define Carpenter Technology Corp.'s quality plan or control plan.

The QMS documentation includes:

- a) Carpenter Technology, Corp. Quality Policy and quality objectives
- b) This Quality Manual
- c) Documented Procedures and records
- d) Documents necessary for the effective planning, operation and control of our processes,
- e) Records required by quality standards, and
- f) Quality system requirements imposed by the applicable regulatory authorities by statutory and regulatory authorities.**

**Carpenter Technology Corp. ensures that personnel have access to QMS documentation and are aware of relevant procedures. We also provide customer or statutory and regulatory authorities access to QMS documentation as required.**

### 4.2.2 Quality Manual

This Quality Manual has been prepared to describe the Carpenter Technology Corp. QMS and it includes:

- a) The scope of the QMS, including details of and justification for any exclusions. Carpenter Technology Corp. has determined that the following requirements are not applicable to the operations at all Carpenter Technology Corp. sites and are documented as exclusions:

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- Service Provisions – Carpenter Technology Corp. does not provide after sale servicing of product.
  - Assembly – No assembly operations are performed by Carpenter Technology Corp.
  - Operation and maintenance of the product – Not applicable to Carpenter Technology Corp. products.
  - Shelf life control and stock rotation – Carpenter Technology Corp. products do not require shelf life control. However, chemicals used in processing and laboratory test operations are subject to shelf life control.
  - Special handling for sensitive materials – Carpenter Technology Corp. products are not considered sensitive.
  - Additional exclusions for individual sites are identified in Appendix A of this manual.
- b) The documented procedures established for the QMS, or reference to them.

**Documented QMS procedures relating to the requirements for each section are contained in the SQP Reference Matrix which is available electronically from Quality Assurance.**

- c) a description of the interaction between the processes of the QMS.

The Process Flow Diagram and the Process Interaction Chart at the end of section 4 provide a description of the interaction between the processes of the QMS system.

#### 4.2.3 Control of Documents

Documents required by the QMS are controlled. SQP 13.10, Document Control, along with other related SQP's, define the controls needed to:

- a) approve documents for adequacy prior to issue.
- b) review and update as necessary and re-approving documents.
- c) ensure that changes and current revision status of documents are identified.
- d) ensure that relevant versions of applicable documents are available at points of use.
- e) ensure that documents remain legible and readily identifiable.
- f) ensure that documents of external origin, determined by Carpenter Technology Corp. to be necessary for the planning and organization of the QMS, are identified and their distribution controlled.
- g) prevent the unintended use of obsolete documents and to apply suitable identification to them if they are retained for any purpose.
- h) obtain customer / statutory and regulatory agency approvals when required by contract or statutory and regulatory requirements.

**Document changes shall be coordinated with customer and/or regulatory officials in accordance with contractual or regulatory requirements.**

Any printed copied of controlled documents (Quality Manual, SQP's, SOP's, etc.) will be considered uncontrolled.

Customer and/or regulatory authority's representatives shall have access to QMS documentation on site.

#### 4.2.4 Control of Quality Records

Quality records are established and maintained to provide evidence of conformity to requirements and of the effective operation of the QMS. Records shall remain legible, readily identifiable and retrievable. SQP 15.01, Control of Records, defines the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

**A documented procedure defines the method for controlling records that are created and/or retained by suppliers.**

**Records shall be available for review by customers and regulatory authorities in accordance with contract or regulatory requirements.**

*Records of product origin, conformity and shipment shall be maintained in accordance with customer, statutory and regulatory requirements.*

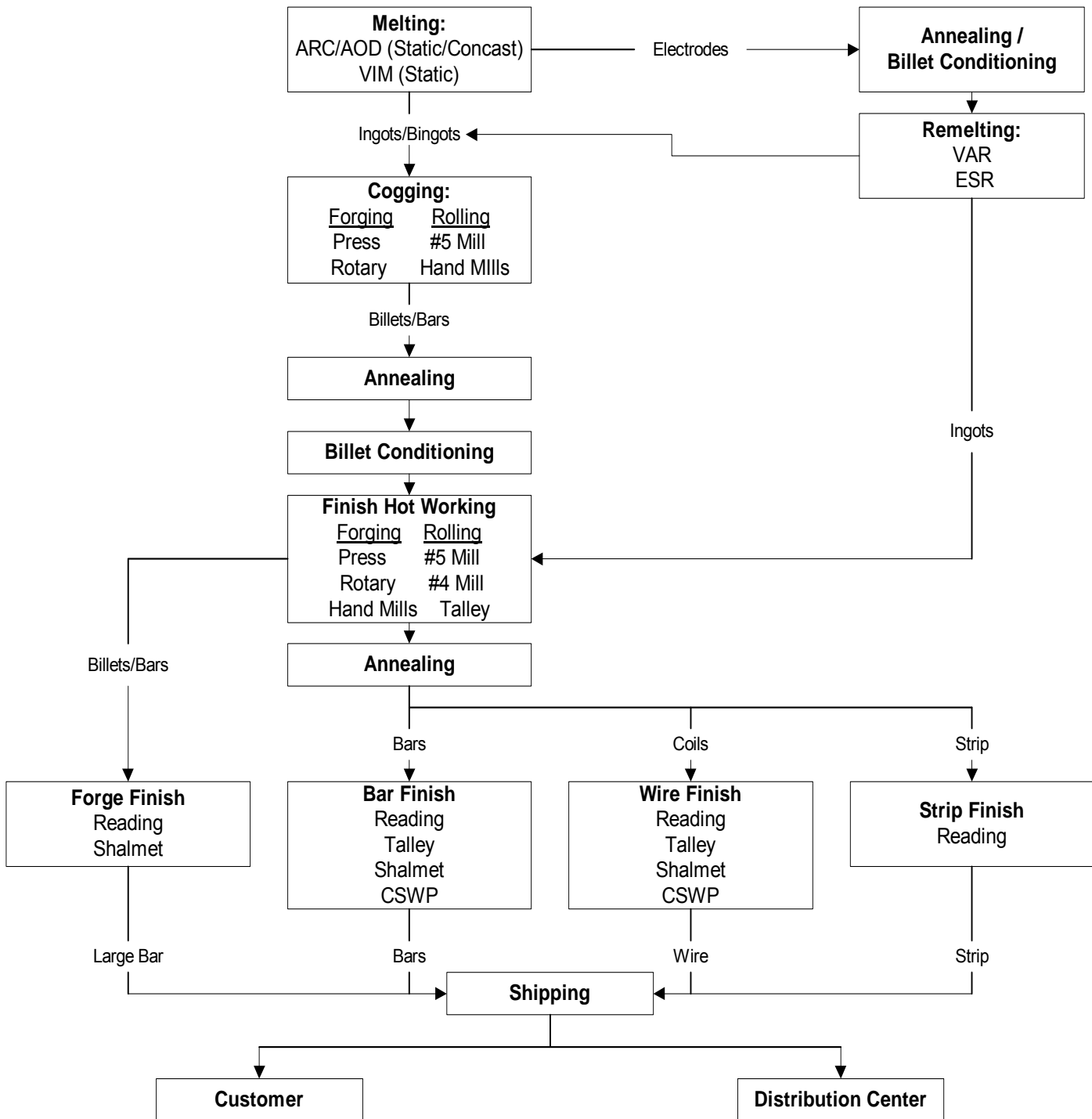
*Where records are stored in an electronic form, back up procedures shall be defined. These electronic records shall be secured to prevent unauthorized alteration or change and shall not be corrupted due to software or system changes.*

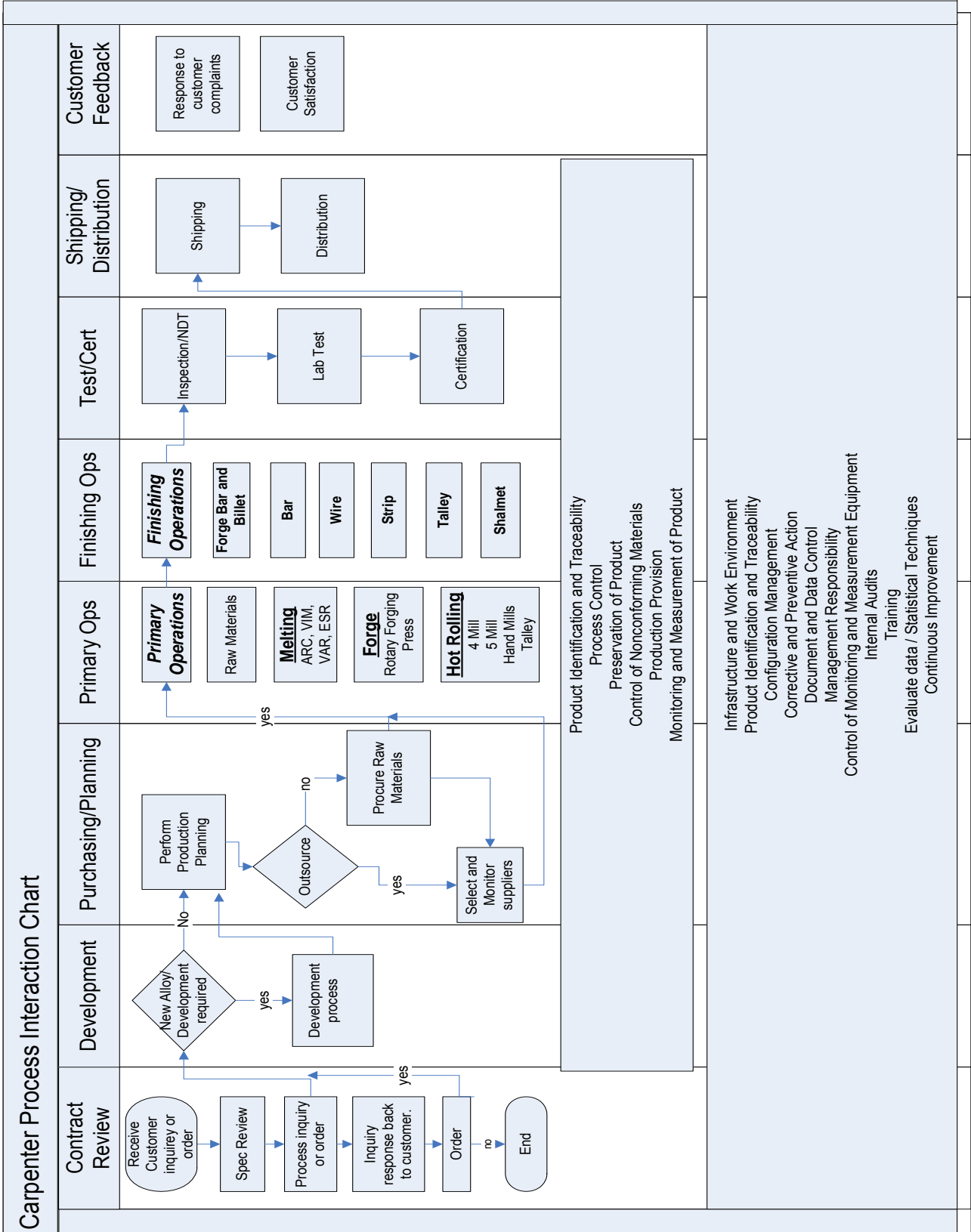
##### 4.2.4.1 Recording, Correction, and Retention Policy

4.2.4.1.1 Handwritten processing information to be retained in a temporary or permanent file shall be recorded in black or blue ink.

4.2.4.1.2 Errors on paper records are corrected by crossing through the old information with a single line and writing the revised information beside it. The person correcting the records in this manner must write their initials or first initial and last name, plus the date beside the change. Correction tapes or fluids shall not be used in the correction process.

# Process Flow Diagram





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## Section 5 - Management Responsibility

### 5.1 Management Commitment:

Top management is actively involved in the development and implementation of the QMS. Evidence of commitment to the development and implementation of the QMS and continually improving its effectiveness is provided by

- a) Communication of the importance of meeting customer, statutory, and regulatory requirements.
- b) Establishing quality objectives
- c) Establishing the quality policy.
- d) Conducting quarterly management reviews.
- e) Ensuring the availability of resources.

### 5.2 Customer Focus:

Top management ensures that customer satisfaction requirements are determined and are met with the aim of enhancing customer satisfaction.

*Top management ensures that product conformity and on-time delivery performances are measured and that appropriate action is taken if planned results are not, or will not be, achieved.*

### 5.3 Quality Policy:

Top management ensures that the quality policy

- a) is appropriate to the purpose of Carpenter Technology Corp.
- b) includes a commitment to comply with requirements and continually improve the effectiveness of the QMS
- c) provides a framework for establishing and reviewing objectives
- d) is communicated and understood within Carpenter Technology Corp.
- e) is reviewed for continuing suitability

The Quality Policy is:

**“As a leading manufacturer of specialty metals for critical end-use applications, Carpenter Technology Corporation is committed to Total Customer Satisfaction through Continual Improvement of the Quality of our processes and products.**

**We define Total Customer Satisfaction as Zero Customer Disappointments to Mutually Agreed-Upon Expectations.”**

## 5.4 Planning:

### 5.4.1 Quality Objectives

Top management ensures that quality objectives, including those needed to meet requirements for product, are established at relevant functions and levels within Carpenter Technology Corp. The quality objectives are measurable and consistent with the quality policy.

### 5.4.2 Quality Management System Planning

Top management ensures that:

- a) the planning of the QMS is carried out in order to meet the requirements given in AS9100 section 4.1 / AS9120 / ISO 9001 , as well as the quality objectives, and
- b) the integrity of the QMS is maintained when changes to the QMS are planned and implemented.

## 5.5 Responsibility, Authority and Communication:

### 5.5.1 Responsibility and authority

Carpenter Technology Corporation charts have been established to show the interrelation of personnel. Job descriptions define the responsibilities and authorities of each of the positions on the organizational chart. Job descriptions and organizational charts are reviewed and approved by top management for adequacy. These documents are available throughout Carpenter Technology Corp. to help employees understand responsibilities and authorities.

### 5.5.2 Management Representative

Top Management has appointed the Manager - Quality Assurance and NDT as the overall Management Representative for the QMS. This position is a part of Carpenter Technology Corp.'s organizational management team who, irrespective of other duties, has the following responsibility and authority that includes:

- a) Ensure that processes needed for the QMS are established, implemented and maintained.
- b) Report to top management on the performance of the QMS, and any need for improvements.
- c) Promote awareness of customer requirements throughout Carpenter Technology Corp.
- d) *Organizational freedom and unrestricted access to top management to resolve quality management issues.***
- e) Act as a liaison with external parties such as customers or auditors on matters relating to the QMS.
- f) Resolve matters pertaining to quality issues.

Each site that is part of this QMS appoints a Deputy Management Representative to ensure implementation of the above responsibilities for that site.

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### 5.5.3 Internal Communication

Top Management has ensured that appropriate processes are established for communication within. Methods of communicating the effectiveness of the QMS include department and management meetings, management reviews, circulation of minutes of management review meetings, Internal Audit Closing meetings, and other routine business communication.

## 5.6 Management Review:

### 5.6.1 General

Top management reviews the QMS at management review meetings. This review assesses the continuing QMS suitability, adequacy and effectiveness, identifying opportunities for improvement and needed changes. Records are maintained for each management review meeting.

### 5.6.2 Review Input

Assessment of the QMS is based on a review of information inputs to management review. These inputs include the following:

- a) Results of audits
- b) Customer feedback
- c) Process performance and product conformity
- d) Status of preventive and corrective actions
- e) Follow-up actions from previous management reviews
- f) Changes that could affect the QMS
- g) Recommendations for improvement

### 5.6.3 Review Output

During these review meetings, management will identify appropriate actions to be taken regarding the following issues:

- a) Improvement of the effectiveness of the QMS and its processes
- b) Improvement of product related to customer requirements
- c) Resource needs

Responsibility for required actions is assigned to members of the management review team. Any decisions made during the meeting, assigned actions, and their due dates are recorded in the minutes of management review.

## Section 6 - Resource Management

### 6.1 Provision of Resources:

Carpenter Technology Corp. has determined and provides the resources needed to:

- a) implement and maintain the QMS and continually improve its effectiveness.
- b) enhance customer satisfaction by meeting customer requirements.

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## 6.2 Human Resources:

### 6.2.1 General

Personnel performing work affecting conformity to product requirements shall be competent on the basis of appropriate education, training, skills and experience.

To ensure competence of our personnel, job descriptions have been prepared identifying the qualifications required for each position that affects conformity to product requirements. Qualifications include requirements for education, skills and experience. Appropriate qualifications, along with required training, provide the competence required for each position.

### 6.2.2 Competence, Training and Awareness

Carpenter Technology Corporation shall:

- a) determine the necessary training competence for personnel performing work affecting conformity to product requirements
- b) where applicable, provide training or take other actions to achieve the necessary competence
- c) evaluate the effectiveness of the actions taken
- d) ensure that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of quality objectives.
- e) maintain appropriate records of education, training and experience

## 6.3 Infrastructure:

Carpenter Technology Corp shall determine, provide and maintain the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable,

- a) building, workspace, and associated utilities,
- b) process equipment (both hardware and software), and
- c) supporting services (such as transport, communication or information systems).

## 6.4 Work Environment:

A work environment suitable to achieve conformity to product requirements is maintained. Requirements are determined during quality planning. The work environment is managed for continuing suitability.

## Section 7 - Product Realization

### 7.1 Planning of Product Realization:

Quality planning is required before new products or processes are implemented. The quality planning will be consistent with the requirements of the other processes of the QMS. It may take place as a development project, or according to the Planning of Product Realization procedures listed in the SQP Reference Matrix. During this planning, management or assigned personnel shall determine as appropriate:

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- a) The quality objectives and requirements for the product, including product and product safety, reliability, availability, and recycling of product.
- b) Establish processes and documentation, and to provide resources required specific to the product.
- c) Required verification, validation, monitoring, measurement, inspection and test activities specific to the product and the criteria for product acceptance..
- d) Records needed to provide evidence that the realization process and resulting product meet requirements
- e) **Resources necessary to support operation and maintenance of the product.**
- f) *Configuration management appropriate to the product.*

The output of quality planning includes documented quality plans, processes, procedures and design outputs.

### 7.1.1 Project Management

Carpenter Technology Corp. plans and manages product realization in a structured and controlled manner to meet requirements at acceptable risk, within resource and schedule constraints.

### 7.1.2 Risk Management

Carpenter Technology Corp. has established, implemented and maintains a process for managing risk to the achievement of appropriate organizational and product requirements. This process includes:

- a) Assignment of responsibilities for risk management.
- b) Definition of risk criteria (likelihood, consequences, risk acceptance)
- c) Identification, assessment and communication of risks throughout product realization.
- d) Identification, implementation and management of actions to mitigate risks that exceed the defined risk acceptance criteria.
- e) Acceptance of risks remaining after implementation of mitigating actions.

### 7.1.3 Configuration Management

***Carpenter Technology Corp. has established, documented, implemented and maintains a configuration management process that is appropriate to the product and includes as appropriate to the product: (This is section 7.1.1 in AS9120)***

- a) *configuration management planning*
- b) *configuration identification*
- c) *change control*
- d) *configuration status accounting, and*
- e) *configuration audit*

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#### 7.1.4 Control of Work Transfers

Carpenter Technology Corp. has established, implemented and maintains a process to plan and control the temporary or permanent transfer of work and to verify the conformity of the work to established requirements.

### 7.2 Customer Related Processes:

#### 7.2.1 Determination of Requirements Related to the Product

Carpenter Technology Corp. determines customer requirements before acceptance of an order. Customer requirements include those:

- a) Requirements specified by the customer, including those for delivery.
- b) Requirements not stated by the customer but necessary for specified or intended use, when known.
- c) Statutory and regulatory requirements applicable to the product
- d) Additional requirements considered necessary by Carpenter Technology Corp.

#### 7.2.2 Review of Requirements Related to the Product

Carpenter Technology Corp. has a process for the review of requirements related to the product, including a review process for inquiries. The review is conducted before the order is accepted. The process ensures that:

- a) Product requirements are defined.
- b) Contract or order requirements differing from those previously expressed are resolved.
- c) Carpenter Technology Corp. has the ability to meet the defined requirements.
- d) Special requirements of the product are determined.
- e) ***Risks (e.g., new technology, short delivery time scale) have been identified..***

Records are maintained showing the results of the review and any actions arising from the review

Where a customer does not provide a documented statement of requirements, the customer requirements are confirmed before the order is accepted.

When product requirements are changed, Carpenter Technology Corp. communicates changes to relevant personnel and amends relevant documents

#### 7.2.3 Customer Communication

Carpenter Technology Corp. has implemented effective processes for communicating with customers. These communications are in relation to:

- a) Product Information.
- b) Enquiries, contracts and order handling, including amendments.
- c) Customer Feedback, including customer complaints.

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7.3 Development: – NOTE: This entire section does not apply to AS9120 facilities.

#### 7.3.1 Development Planning

The development procedure outlines the process for controlling the development process. The R&D and Technology Departments plan development according to this procedure. The development plan includes:

- a) Development stages
  - **In respect to organization, task sequence, mandatory steps, significant stages and method of configuration control.**
- b) Required development reviews, verification and validation appropriate to each design and development stage
- c) Responsibilities and authorities for development.

**Where appropriate, Carpenter Technology Corp. gives consideration to the following activities:**

- **Structuring the development effort into significant elements;**
- **For each element, analyzing the tasks and the necessary resources for its development. This analysis considers an identified responsible person, development content, input data, planning constraints, and performance conditions. The input data specific to each element is reviewed to ensure consistency with requirements.**

Identification of the technical interfaces required for the project to ensure effective communication and clear assignment of responsibility.

Updating of the planning output, as appropriate, as the project progresses

**The different development tasks to be carried out, defined according to specified safety or functional objectives of the product in accordance with customer or statutory and regulatory authority requirements.**

#### 7.3.2 Development Inputs

Inputs relating to product requirements are determined and records maintained. All inputs are reviewed for adequacy and completeness, and to resolve any ambiguous inputs or conflicts.

Inputs include:

- a) Functional and performance requirements.
- b) Applicable statutory and regulatory requirements.
- c) Where applicable, information derived from previous similar developments.
- d) Other requirements essential for development.

#### 7.3.3 Development Outputs

Outputs of development are documented according to the Development Procedure. They are documented in a format suitable for verification against the inputs, and are approved prior to release. Outputs shall:

- a) Meet the input requirements.
- b) Provide appropriate information for purchasing and production.
- c) Contain or reference product acceptance criteria.
- d) Specify the characteristics of the product that are essential for its safe and proper use.
- e) **Identify critical items, including key characteristics and specific actions, in accordance with development requirements**

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**All pertinent data required to allow the product to be identified, manufactured, inspected, used and maintained is defined by Carpenter Technology Corp. according to the Development Procedure to ensure conformity of the product.**

#### 7.3.4 Development Review

The design plan specifies suitable stages of the project to conduct development review. Reviews take place according to the development procedure; results of development review are recorded in minutes of the development review meetings which are maintained as a quality record.

Development review will be held to:

- a) evaluate the ability of the results of development activities and determine if they fulfill requirements.
- b) identify any problems and propose necessary actions.
- c) **authorize progression to the next stage.**

#### 7.3.5 Development Verification

Verification shall be performed in accordance with the development plan to ensure that the development outputs have met the development inputs requirements. Records of the results of the verification and any necessary actions are maintained.

#### 7.3.6 Development Validation

Development validation is performed according to the development plan to ensure that the resulting product is capable of meeting the requirements for the specified or known intended use or application. Validation is completed prior to delivery whenever practicable. Records of the validation activities are maintained according to the development procedure.

##### 7.3.6.1 Development Verification and Validation Testing

**Where tests are necessary for verification and validation, these tests are planned, controlled, reviewed, and documented to ensure and prove the following:**

- a) **Test plans or specifications identify the product being tested and the resources being used, define test objectives and conditions, parameters to be recorded, and relevant acceptance criteria.**
- b) **Test procedures describe the method of operation, the performance of the test, and the recording of the results.**
- c) **The correct configuration standard of the product is submitted for the test.**
- d) **The requirements of the test plan and the test procedures are observed.**
- e) **The acceptance criteria are met.**

##### 7.3.6.2 Development Verification and Validation Documentation

**At the completion of development, Carpenter Technology Corp. ensures that reports, calculations, test results, etc., demonstrate that the product definition meets the specification requirements for all identified operational conditions. Records of the results of validation and any necessary actions are maintained.**

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### 7.3.7 Control of Development Changes

Design and development changes shall be identified and records maintained. The changes shall be reviewed, verified and validated, as appropriate, and approved before implementation. The review of design and development changes shall include evaluation of the effect of the changes on product already delivered.

**Carpenter Technology Corporation's change control process shall provide for customer and/or regulatory authority approval of changes, when required by contract or regulatory requirement.**

Records of the review of changes and any necessary actions shall be maintained.

## 7.4 Purchasing:

### 7.4.1 Purchasing Process

Carpenter Technology Corp shall ensure that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product shall be dependant upon the effect of the purchased product or subsequent product realization or the final product.

**Carpenter Technology Corp is responsible for the conformity of all products purchased from suppliers, including product from sources defined by customers.**

Carpenter Technology Corp shall evaluate and select suppliers based on their ability to supply product in accordance with requirements. Criteria for selection, evaluation and re-evaluation shall be established. Records of the results of evaluations and any necessary actions arising from the evaluation shall be maintained.

**Carpenter Technology Corp shall:**

- a) maintain a register of its suppliers that include approval status and the scope of the approval**
- b) periodically review supplier performance; the results of these reviews shall be used as a basis for establishing the level of controls to be implemented.**
- c) define the necessary actions to take when dealing with suppliers that do not meet requirements**
- d) ensure where required that both Carpenter Technology Corp. and all suppliers use customer-approved special process sources**
- e) define the process, responsibilities and authority for the approval status decision, changes of the approval status and conditions for a controlled use of suppliers depending on the supplier's approval status.*
- f) determine and manage the risk when selecting and using suppliers.*
- g) implement controls to prevent the purchase of counterfeit and suspected unapproved parts.*
- h) ensure that the function having responsibility for approving supplier quality systems had the authority to disapprove the use of sources.*

#### 7.4.2 Purchasing Information

Purchasing information describes the product to be purchased, including where appropriate:

- a) requirements for approval of product, procedures, processes and equipment.
- b) requirements for qualification of personnel.
- c) QMS requirements.
- d) **the identification and revision status of specifications, drawings, process requirements, inspection/verification instructions and other relevant technical data.**
- e) *requirements for design, test, examination, inspection, verification, use of statistics and related instructions for acceptance by Carpenter Technology Corp., including any applicable key characteristics.*
- f) **requirements for test specimens for design approval, inspection/verification, investigation or auditing.**
- g) *requirements regarding the need for the supplier to*
  - *notify Carpenter Technology Corp. of nonconforming product,*
  - *obtain organization approval for nonconforming product disposition*
  - *notify Carpenter Technology Corp. of changes in product and/or product definition, changes of supplier, change of manufacturing facility location and, where required, obtain organizational approval, and*
  - *flow down to the supply chain the applicable requirements including customer requirements, and key characteristics where required*
- h) *record retention requirements*
- i) *right of access by Carpenter Technology Corp., their customer, and regulatory authorities to applicable areas of all facilities involved in the order and to all applicable records.*
- j) *requirements for a certificate of conformity and/or test report .*
- k) **Carpenter Technology Corp. shall ensure the adequacy of specified purchase requirements prior to their communication to the supplier.**

#### 7.4.3 Verification of Purchased Product

Carpenter Technology Corp has established and implemented the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements.

**Verification activities may include:**

- a) *obtaining evidence of the quality of product from suppliers (e.g., accompanying documentation, certificate of conformity, test reports, statistical records, process control records),*
- b) *inspection and audit at supplier's premises,*
- c) *review of required documentation,*
- d) *inspection of products upon receipt*
- e) **delegation of verification to the supplier, or supplier certification.**

**Purchased product shall not be used or processed until it has been verified as conforming to specified requirements unless it is released under positive recall procedure.**

**When Carpenter Technology Corp. delegates verification activities to the supplier, the requirements for delegation shall be defined and a register of delegations maintained.**

When Carpenter Technology Corp. or a customer intends to perform verification at the supplier's premises, Carpenter Technology Corp. shall state the intended verification arrangements and method of product release in the purchasing information.

**Where specified in the contract, the customer or the customer's representative shall be afforded the right to verify at the supplier's premises and Carpenter Technology Corp.'s premises that subcontracted product conforms to specified arrangements.**

Customer verification activities performed at any level of the supply chain should not be used by Carpenter Technology Corp. or the supplier as evidence of effective control of quality and does not absolve Carpenter Technology Corp. of its responsibility to provide acceptable product and comply with all requirements.

## 7.5 Production Provision

### 7.5.1 Control of Production Provision

Carpenter Technology Corp shall plan and carry out production provision under controlled conditions. Controlled conditions shall include as applicable:

- a) The availability of information that describes the characteristics of the product.
- b) The availability of work instructions, as necessary.
- c) The use of suitable equipment.
- d) The availability and use of monitoring and measuring equipment.
- e) The implementation of monitoring and measurement.
- f) The implementation of product release, delivery and post-delivery activities
- g) *Accountability for all product (e.g., quantities, split orders, nonconforming product),*
- h) *Evidence that all manufacturing and inspection operations have been completed as planned, or as otherwise documented and authorized.*
- i) *Provision for the prevention, detection, and removal of foreign objects.*
- j) *Monitoring and control of utilities and supplies such as water, compressed air, electricity and chemical products to the extent they affect conformity to product requirements.,*
- k) *Criteria for workmanship, which shall be stipulated in the clearest practical manner (e.g., written standards, representative samples, or illustrations).*

**Planning shall consider, as applicable:**

- a) **The establishment of process controls and development of control plans where key characteristics have been identified.**
- b) **The identification of in-process verification points when adequate verification of conformance cannot be performed at a later stage of realization.**
- c) **The design, manufacture, and use of tooling to measure variable data.**
- d) **Special processes.**

#### 7.5.1.1 Production Process Verification (First Article Inspection)

*When appropriate, and when required by customer contract, Carpenter Technology Corp. shall use a representative sample from the first production run of a new product to verify that the production, documentation and tooling processes are capable of producing product that meets requirements. This process shall be repeated when changes occur that invalidate the original results.*

#### 7.5.1.2 Control of Production Process Changes:

**Persons authorized to approve changes to production processes shall be identified.**

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**Carpenter Technology Corp. shall identify and obtain acceptance of changes that require customer and/or regulatory approval in accordance with contract or regulatory requirements.**

**Changes affecting processes, production equipment, tools and programs shall be documented. Procedures shall be available to control their implementation.**

**The results of changes to production processes shall be assessed to confirm that the desired effect has been achieved without adverse effects to product conformity.**

#### **7.5.1.3 Control of Production Equipment and Tools and Software Programs**

**Production equipment, tools and software programs used to automate and control / monitor product realization processes shall be validated prior to use and maintained.**

**Storage requirements, including periodic preservation/condition checks, shall be established for production equipment or tooling in storage.**

#### **7.5.1.4 Post Delivery Support**

Carpenter Technology Corp. is a raw materials supplier to various metal part / component manufacturers. As such, Carpenter Technology Corp. does not provide any after sales servicing of product.

#### **7.5.2 Validation of Processes for Production Provision –**

Note: This section does not apply to AS9120 facilities.

Carpenter Technology Corp. validates any processes for production where the resulting output cannot be verified by subsequent monitoring or measurement and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered. Validation demonstrates the ability of these processes to achieve planned results.

Carpenter Technology Corp. has documented the process for validation including:

- a) Defined criteria for review and approval of the processes.
- b) Approval of equipment and qualification of personnel.
- c) Use of specific methods and procedures.
- d) Requirements for records.
- e) Revalidation.

#### **7.5.3 Identification and Traceability**

Carpenter Technology Corp. identifies the product throughout product realization according to the Identification and Traceability procedure, SQP 5.04.

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***Carpenter Technology Corp. maintains the identification of the configuration of the product in order to identify any differences between the actual configuration and the agreed configuration.***

Product status is identified with respect to monitoring and measurement requirements throughout product realization.

***When acceptance authority media such as electronic signatures or passwords are used Carpenter Technology Corp. establishes and documents controls for the media.***

Where traceability is a requirement, Carpenter Technology Corp. shall control and record the unique identification of the product.

*Carpenter Technology Corp. shall maintain product identification and traceability by suitable means (e.g., labels, bar codes) from receipt, during splitting, storage, packaging, and preservation operations; and until delivery (including subcontracted handling or packing operations)*

**According to the level of traceability required by contract, regulatory, or other established requirement, Carpenter Technology Corp. shall provide for:**

- a) Identification to be maintained throughout product life up to the time of shipment to the customer.***
- b) The ability to trace all products manufactured from the same batch of raw material, or from the same manufacturing batch, to the destination (e.g., scrap, delivery)***
- c) For a given product, a sequential record of its production (manufacture, assembly, inspection) to be retrieved.***

#### 7.5.4 Customer Property

Carpenter Technology Corp. does not typically utilize customer supplied property. However, should the need arise, Carpenter Technology Corp. would exercise care with customer property while it is under Carpenter Technology Corp.'s control or being used. When required, a procedure would be developed to outline the identification, verification, protection and safeguarding of customer property provided for use or incorporation into product. If any customer property would be lost, damaged or otherwise found to be unsuitable for use, this would be reported to the customer and records maintained.

#### 7.5.5 Preservation of Product

Carpenter Technology Corp. maintains the product during internal processing and delivery to the intended destination in order to maintain conformity to requirements per applicable procedures. As applicable, preservation includes identification, handling, packaging, storage and protection.

***Preservation of product also includes, where applicable in accordance with product specifications and/or applicable regulations, provisions for:***

- Cleaning.***
- Prevention, detection and removal of foreign objects.***
- Special handling for sensitive products.***
- Marking and labeling including safety warnings, where applicable.***

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- *Shelf life control and stock rotation – not applicable for Carpenter Technology Corp. products, but in place for chemical used in manufacturing and laboratory testing.*
- *Special handling for hazardous materials.*

## 7.6 Control of Monitoring and Measuring Equipment:

Carpenter Technology Corp. has determined the monitoring and measurement to be undertaken and the monitoring and measuring equipment needed to provide evidence of conformity of product to determined requirements.

*Carpenter Technology Corp. maintains a register of these monitoring and measuring devices, and defines the process employed for their calibration/verification including details of equipment type, unique identification, location, frequency of checks, check method and acceptance criteria.*

*Carpenter Technology Corp. shall ensure that environmental conditions are suitable for the calibrations, inspection, measurement and tests being carried out.*

A documented procedure outlines the process used to ensure that monitoring and measurement to be carried out in a manner that is consistent with the monitoring and measurement requirements. The system requires that monitoring and measuring equipment is:

- a) Calibrated or verified, or both, at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards.
- b) Adjusted or re-adjusted as necessary
- c) Identified in order to determine calibration status
- d) Safeguarded from adjustments that would invalidate the measurement result
- e) Protected from damage and deterioration during handling, maintenance and storage
- f) ***Recalled according to a defined method when requiring calibration or verification.***
- g) Records of the results of calibration and verification shall be maintained

In addition, Carpenter Technology Corp. shall assess and record the validity of the previous measuring results when the equipment is found not to conform to requirements. Appropriate action on the equipment and any product affected shall be taken. Records of the results of calibration and verification are maintained

When used in the monitoring and measurement of specified requirements, the ability of computer software to satisfy the intended application is confirmed. This is undertaken prior to initial use and reconfirmed periodically.

## **Section 8 - Measurement, Analysis and Improvement**

### 8.1 General:

Carpenter Technology Corp. plans and implements the monitoring, measurement, analysis and improvement processes needed to:

- a) Demonstrate conformity to product requirements,
- b) Ensure conformity of the QMS, and
- c) Continually improve the effectiveness of the QMS.

These processes are identified in documented procedures and include determination of applicable methods, including statistical techniques, and the extent of their use.

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## 8.2 Monitoring and Measurement:

### 8.2.1 Customer Satisfaction

As one of the measurements of the performance of the QMS, Carpenter Technology Corp. monitors information relating to customer perception as to whether Carpenter Technology Corp. has fulfilled customer requirements. The method for obtaining and using this information are determined and documented.

*Information to be monitored and used for the evaluation of customer satisfaction shall include, but is not limited to, product conformity, on-time delivery performance, customer complaints and corrective action requests. Carpenter Technology Corp. shall develop and implement plans for customer satisfaction improvement that addresses deficiencies identified by these evaluations, and assess the effectiveness of the results.*

### 8.2.2 Internal Audit

Carpenter Technology Corp. conducts internal audits at planned intervals to determine whether the QMS:

- a) Conforms to the planned arrangements (see 7.1); to the requirements of this International Standard and to the QMS requirements established by Carpenter Technology Corp. ***Planned arrangements include customer contractual and /or regulatory requirements.***
- b) Is effectively implemented and maintained.

An internal audit program has been planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods are defined. The selection of auditors and conduct of audits shall ensure objectivity and impartiality of the audit process. Auditors shall not audit their own work.

SQP 17.01, Process Audit, along with other SQP's, have been established to define the responsibilities and requirements for planning and conducting audits, establishing records and reporting results.

Records of the audits and their results are maintained.

The management responsible for the area being audited is responsible for ensuring that any necessary corrections and corrective actions are taken without undue delay to eliminate detected nonconformities and their causes. Follow-up activities include the verification of the actions taken and the reporting of verification results.

**Detailed tools and techniques such as check sheets, process flowcharts, or any similar method to support audit of the QMS requirements are developed, maintained and used according to the Internal Audit Procedures. The acceptability of the selected tools is measured against the effectiveness of the internal audit process and overall organization performance.**

### 8.2.3 Monitoring and Measurement of Processes

Carpenter Technology Corp. applies suitable methods for monitoring and, where applicable, measurement of the QMS processes. These methods demonstrate the ability of the processes to achieve planned results. When planned results are not achieved, correction and corrective action is taken, as appropriate, to ensure conformity of the product.

***In the event of process nonconformity, Carpenter Technology Corp.:***

- a) Takes appropriate action to correct the nonconforming process.***
- b) Evaluates whether the process nonconformity has resulted in product nonconformity.***
- c) Determines if the process nonconformity is limited to a specific case or whether it could have affected other processes or products.***
- d) Identifies and controls the nonconforming product.***

### 8.2.4 Monitoring and Measurement of Product

Carpenter Technology Corp. monitors and measures the characteristics of the product to verify that product requirements are met. This is carried out at appropriate stages of the product realization process in accordance with planned arrangements.

**When key characteristics have been identified, they are monitored and controlled.**

***When Carpenter Technology Corp. uses sampling inspection as a means of product acceptance, the plan is statistically valid and appropriate for use. The plan precludes the acceptance of lots whose samples have known nonconformities. When required, the plan is submitted for customer approval.***

**Product is not used until it has been inspected or otherwise verified as conforming to specified requirements, except when product is released under positive-recall procedures pending completion of all required measurement and monitoring activities.**

Evidence of conformity with the acceptance criteria shall be maintained.

Records shall indicate the person(s) authorizing release of product.

Product release shall not proceed until all the planned arrangements have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

***Measurement requirements for product acceptance are documented. This documentation is part of the production documentation, and includes:***

- a) Criteria for acceptance and/or rejection.***
- b) Where in the sequence measurement and testing operations are performed.***
- c) A record of the measurement results (at a minimum, indication of acceptance or rejection).***
- d) Type of measurement instruments required and any specific instructions associated with their use.***

**Test records shall show actual test results data when required by specification or acceptance test plan.**

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**Where required to demonstrate product qualification Carpenter Technology Corp. shall ensure that records provide evidence that the product meets the defined requirements.**

*Carpenter Technology Corp uses sampling inspection as a means of product acceptance; the sampling plan shall be justified on the basis of recognized statistical principles and appropriate for use (i.e., matching the sampling plan to the criticality of the product and to the process capability)*

*Records shall indicate the person(s) authorizing release of product for delivery to customer. Carpenter Technology Corp shall ensure that all documents required to accompany the product are present at delivery.*

#### 8.2.5 Evidence of Conformity

*When required, Carpenter Technology Corp shall provide evidence of the product's conformity.*

*When splitting product, copies of original documents shall be annotated with the following information: amount delivered to amount received, purchase order number, customer's name and supplier's name.*

*Where there is a formal agreement with the customer, Carpenter Technology Corp. can deliver a certifying document created by Carpenter Technology Corp. that references the original manufacturer's certificate of conformity and documents that are retained and traceable by Carpenter Technology Corp.; and, if applicable, that defined requirements have been met throughout Carpenter Technology Corp.'s processes.*

#### 8.3 Control of Nonconforming Product:

***Carpenter Technology Corp. ensures that product which does not conform to product requirements is identified and controlled to prevent its unintended use or delivery. The controls and related responsibilities and authorities for dealing with nonconforming product are defined in SQP 11.01, Referred Material Review (RMR) and other related SQP's.***

***The term "nonconforming product" includes nonconforming product returned from a customer. Carpenter Technology Corp. cannot "repair" nonconforming material. The only dispositions for nonconforming material are "rework", "scrap" or "okay as is" when approved by the customer.***

***Responsibility for review and authority for the disposition of nonconforming product and the process for approving personnel making these decisions is defined in the procedure.***

Carpenter Technology Corp. shall deal with nonconforming product by one or more of the following ways:

- a) By taking action to eliminate the detected nonconformity.
- b) By authorizing its use, release or acceptance under concession by a relevant authority and, where applicable, by the customer.
- c) By taking action appropriate to the effects or potential effects, of the nonconformity when nonconforming product is detected after delivery or use has started.
- d) *By taking actions necessary to contain the effects of the nonconformity on other processes or products.*

*Distributors have no authority to rework product.*

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**Carpenter Technology Corp. does not use dispositions of use-as-is or rework, unless specifically authorized by the customer, if;**

- a) **The product is produced to customer design, or**
- b) **The nonconformity results in a departure from the contract requirements.**

**Unless otherwise restricted in the contract, organization-developed product which is controlled via a customer specification may be dispositioned by Carpenter Technology Corp. as use-as-is or rework, provided the nonconformity does not result in a departure from customer-specified requirements. Repairs are not permitted.**

***Product dispositioned for scrap is conspicuously and appropriately marked, or positively controlled, until physically rendered unusable.***

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, shall be maintained.

When nonconforming product is corrected it shall be subjected to re-verification to demonstrate conformity to the requirements.

***In addition to any contract or statutory and regulatory authority reporting requirements, Carpenter Technology Corp.'s system provides for timely reporting of delivered nonconforming product that may affect reliability or safety. Notification includes a clear description of the nonconformity, which includes as necessary material affected, customer and/or organization identity, quantity, and date(s) delivered.***

#### 8.4 Analysis of Data:

Carpenter Technology Corp. determines, collects and analyses appropriate data to demonstrate the suitability and effectiveness of the QMS and to evaluate where continual improvement of the QMS can be made. The process for determining, collecting and analyzing this data is defined in the Management Responsibility procedure. Appropriate data includes data generated as a result of monitoring and measurement and from other relevant sources. Analysis is performed using Statistical Techniques detailed in Carpenter Technology Corp. procedures.

The analysis of data provides information relating to:

- a) Customer satisfaction.
- b) Conformity to product requirements.
- c) Characteristics and trends of processes and products, including opportunities for preventive action.
- d) Suppliers.

## 8.5 Improvement:

### 8.5.1 Continual Improvement

Carpenter Technology Corp. continually improves the effectiveness of the QMS through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

*Carpenter Technology Corp. monitors the implementation of improvement activities and evaluates the effectiveness of the results.*

### 8.5.2 Corrective action

Carpenter Technology Corp. takes action to eliminate the causes of nonconformities in order to prevent recurrence. Corrective actions are appropriate to the effects of the nonconformities encountered. Non-Reading site CAR's are reviewed for global actions.

SQP 17.04, Internal Corrective Action, and other related SQP's, define requirements for:

- a) Reviewing nonconformities (including customer complaints),
- b) Determining the causes of nonconformities,
- c) Evaluating the need for action to ensure that nonconformities do not recur,
- d) Determining and implementing action needed,
- e) Records of the results of action taken (see 4.2.4), and
- f) Reviewing the effectiveness of corrective action taken.
- g) *Flow down of the corrective action requirement to a supplier, when it is determined that the supplier is responsible for the nonconformity.***
- h) *Specific actions where timely and/or effective corrective actions are not achieved.***
- i) *Determining if additional nonconforming product exists based on the causes of the nonconformities and taking further action when required.***

### 8.5.3 Preventive action

Carpenter Technology Corp. determines action to eliminate the causes of potential nonconformities in order to prevent their occurrence. Preventive actions are appropriate to the effects of the potential problems.

SQP 11.04, Preventive Action, and other related SQP's, define requirements for:

- a) Determining potential nonconformities and their causes.
- b) Evaluating the need for action to prevent occurrence of nonconformities.
- c) Determining and implementing action needed.
- d) Records of results of action taken.
- e) Reviewing the effectiveness of preventive action taken.

**APPENDIX A**  
**Applicable Sections By Site**

Section of the Standard	Reading, PA	Orangeburg, SC	Elyria, OH / Deer Lake, PA	McBee, SC	Belgium	Alcester, UK	Suzhou	Toronto	Singapore
Applicable Standard	ISO / 9100 / 9120	ISO	ISO	ISO / 9100	9120	9120	9120	9120	9120
4.1 General Requirements	X	X	X	X	X	X	X	X	X
4.2.1 General	X	X	X	X	X	X	X	X	X
4.2.2 Quality Manual	X	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING
4.2.3 Control of Documents	X	X	X	X	X	X	X	X	X
4.2.4 Control of Records	X	X	X	X	X	X	X	X	X
5.1 Management Commitment	X	X	X	X	X	X	X	X	X
5.2 Customer Focus	X	X	X	X	X	X	X	X	X
5.3 Quality Policy	X	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING
5.4.1 Quality Objectives	X	X	X	X	X	X	X	X	X
5.4.2 Quality Management System Planning	X	X	X	X	X	X	X	X	X
5.5.1 Responsibility and Authority	X	X	X	X	X	X	X	X	
5.5.2 Management Representative	X	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING
5.5.3 Internal Communication	X	X	X	X	X	X	X	X	X
5.6 (5.6.1., 5.6.2, 5.6.3) Management Review	X	X	X	X	X	X	X	X	X
6.1 Provision of Resources	X	X	X	X	X	X	X	X	X
6.2 Human Resources	X	X	X	X	X	X	X	X	X
6.3 Infrastructure	X	X	X	X	X	X	X	X	X

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Section of the Standard	Reading, PA	Orangeburg, SC	Elyria, OH / Deer Lake, PA	McBee, SC	Belgium	Alcester, UK	Suzhou	Toronto	Singapore
6.4 Work Environment	X	X	X	X	X	X	X	X	X
7.1 Planning of Product Realization (7.1.1 to 7.1.4)	X	X	X	X	X	X	X	X	X
7.2 Customer Related Processes (7.2.1 to 7.2.3)	X	X	X	X	X	X	X	X	X
7.3 Development (7.3.1 to 7.3.7)	X	EXCLUDE - NO DEVELOPMENT	EXCLUDE - NO DEVELOPMENT	EXCLUDE NO DEVELOPMENT	EXCLUDE - NO DEVELOPMENT	EXCLUDE - NO DEVELOPMENT	EXCLUDE - NO DEVELOPMENT	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
7.4 Purchasing (7.4.1 to 7.4.3)	X	X	X	X	X	X	X	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
7.5.1 Control of Production Provision (7.5.1.5 Service is Excluded for all facilities)	X	X	X	X	X	EXCLUDE - NO PRODUCTION	EXCLUDE - NO PRODUCTION	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
7.5.2 Validation of Processes for Production	X	X	X	X	EXCLUDE - LIMITED CUT TO LENGTH ONLY	EXCLUDE - NO PRODUCTION	EXCLUDE - NO PRODUCTION	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
7.5.3 Identification and Traceability	X	X	X	X	X	X	X	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
7.5.4 Customer Property	X	X	X	X	X	X	X	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
7.5.5 Preservation of Product	X	X	X	X	X	X	X	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
7.6 Control of Monitoring and Measurement Equipment	X	X	X	X	X	X	X	EXCLUDE SALES OFFICE ONLY	EXCLUDE SALES OFFICE ONLY
8.1 Measurement, Analysis and Improvement - General	X	X	X	X	X	X	X	X	X
8.2.1 Customer Satisfaction	X	X	X	X	X	X	X	X	X

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Section of the Standard	Reading, PA	Orangeburg, SC	Elyria, OH / Deer lake, PA	McBee, SC	Belgium	Alcester, UK	Suzhou	Toronto	Singapore
8.2.2 Internal Audit	X	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING	FROM READING
8.2.3 Monitoring and Measurement of Processes	X	X	X	X	X	X	X	X	X
8.2.4 Monitoring and Measurement of Product	X	X	X	X	X	X	X	EXCLUDE SALES OFFICE ONLY - NO PRODUCT	EXCLUDE SALES OFFICE ONLY - NO PRODUCT
8.2.5 Evidence of Conformity – AS9120 only.	X	N/A	N/A	N/A	X	X	X	X	X
8.3 Control of Nonconforming Product	X	X	X	X	X	X	X	X	X
8.4 Analysis of Data	X	X	X	X	X	X	X	X	X
8.5.1 Continual Improvement	X	X	X	X	X	X	X	X	X
8.5.2 Corrective Action	X	X	X	X	X	X	X	X	X
8.5.3 Preventive Action	X	X	X	X	X	X	X	X	X

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**QUALITY SYSTEM MANUAL REVISIONS**

REV.	SECTION	SUB-SEC.	PARA.	CHANGE DETAILS	DATE	AUTHORIZED BY
28	All			Note: Rev. 28 is a complete rewrite of the Carpenter QPM to align with AS9100 and ISO 9001:2008.	03/12/10	R. A. Heckman
28	4.0	4.2	4.2.4.1	Added section on handwritten changes.	03/30/10	Editorial change approved by: R. A. Heckman
28	4.0	4.3	New	Page 13 of 33, added Comments section for the Process Flow Diagram.	03/30/10	Editorial change approved by: R. A. Heckman
28	8.0	8.5	8.5.2	Added requirement to review other site CAR's for local of global action.	03/31/10	Editorial change approved by: R. A. Heckman
29	Multiple			Added AS9120 to QPM	9/01/10	R. A. Heckman
30	Multiple			Update to AS9100C	9/28/11	R. A. Heckman

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