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1.0 Purpose & Scope

1.1 General
This Quality Manual documents the QMS used by Saint-Gobain Structural Ceramics, Niagara Falls operations and external resources to assure the quality of a product, service or material intended for or required by a customer including any legal requirements.

1.2 Scope
The QMS processes support the production of components related to engineered solutions using Hexoloy® Silicon Carbide, Noralide® Silicon Nitride and Norbide® Boron Carbide for chemical processing, defense, nuclear, alternative energy, thermal, semiconductor, corrosion and wear resistant applications.

Exclusion: Saint-Gobain Structural Ceramics, Niagara Falls operations is excluding section 7.3 Design and Development. The product design is supplied by the customer.

1.3 Company Profile
Structural Ceramics was established in 1979 to commercialize the Carborundum patented technology for Hexoloy® pressure-less sintered silicon carbide material. The Hexoloy® name was registered as the material trademark. Since the introduction of the Hexoloy® family of materials, they have become the benchmark for all pressure-less sintered silicon carbide. Structural Ceramics has evolved to supply a variety of advanced ceramics including aluminum nitride, boron carbide, silicon carbide, and silicon nitride.


The manufacturing facility is located in Niagara Falls, New York. The facility in Niagara Falls (CMC) produces a full range of Hexoloy® products utilizing state of the art ceramic processes. These processes include powder (premix) production, forming, green machining, sintering, grinding, and lapping. The products produced cover a broad range of applications including semiconductor, armor tile, wear and corrosion, and other specialized engineered customer designed components.
2.0 There are no Normative References
3.0 Terms & Definitions

3.1 CMC - Ceramic Manufacturing Center
3.2 QMS - Quality Management System
3.3 EMS – Environmental Management System
3.4 SGC - Saint-Gobain Ceramics
3.5 SVP - Standard Value of Production
3.6 TC - Tax Clearance
3.7 NIST - National Institute of Standards & Technology
3.8 WCM – World Class Manufacturing
3.9 STECO – Top Management Steering Committee
4.0 QUALITY MANAGEMENT SYSTEM

4.1 GENERAL REQUIREMENTS

Structural Ceramics has documented, implemented, maintained and will continually improve the quality management system (QMS) in accordance with ISO 9001:2008 standards and provides systems to maintain Commercial Grade Dedication for the supply of commercial grade items to nuclear customers.

All products manufactured and supplied by Structural Ceramics must conform to our QMS (see next page) to assure the highest quality to our customers and satisfy their requirements.

To implement the QMS, Structural Ceramics has done the following to develop the QMS core processes in accordance with the ISO 9001:2008 standards:

A. Determined the processes needed for the QMS and their application throughout the organization.

B. Determined the sequence and interaction of these processes. (Refer to next page of the process based quality management system)

C. Determined criteria and methods needed to ensure that both the operation and control of these processes are effective.

D. Ensured the availability of information necessary to support and monitor these processes.

E. Monitor measure (where applicable) and analyze the processes.

F. Implemented actions to achieve planned results and will continually look for improvement.

If Structural Ceramics chooses to outsource any process that affects product conformity, we shall ensure control over that process. Any outsourced process shall be identified and documented within our QMS. This includes defining the type and extent of control applied to these outsourced resources.
4.2 DOCUMENTATION REQUIREMENTS

4.2.1 General

Structural Ceramic’s documentation shall include the following:

A. Documented statements of quality policy and quality objectives (see Quality Manual Attachment A).

B. QMS manual.

C. Documented procedures and records required by ISO 9001:2008 standards. All documented procedures must be established, documented, implemented, and maintained.

D. Documents and records determined by Structural Ceramics to be necessary to ensure the effective planning, operation and control of its process.

4.2.2 Quality Manual

Structural Ceramics QMS shall establish and maintain a QC manual that has the following:

A. The QMS scope and any justified exclusions. (see Section 1.0)

B. The documented procedures.

C. A description of the interaction between QMS processes.

4.2.3 Control of Documents

All documented procedures (See Master List of Procedures) are established, maintained and controlled as follows
(See procedure DC-4.2-1p, Document Control):

A. Documents are approved for adequacy prior to issue.

B. Documents are reviewed, updated, and re-approved as necessary.

C. Changes and the current revision status are identified.

D. The most current and relevant version is distributed and available at the points of use.

E. Documents are legible and readily identifiable.
F. Documents of external origin identified by Structural Ceramics as necessary for planning and operation of the QMS are identified, reviewed at a minimum of once per year against current published standards and their distribution controlled.

G. Obsolete documents are prevented from unintended use, and are identified if they must be retained for any purpose.

4.2.4 Control of Quality Records

Quality records required (See Matrix of ISO Records) are controlled and maintained to provide evidence of conformance to requirements and of the effective operation of the QMS. Records stored electronically are backed up daily, achieved and available as required.

A. Records shall remain legible, readily identifiable and retrievable.

B. A documented procedure (See procedure DC-4.2-2p, Records Control) shall establish the identification, storage, retrieval, protection, retention and disposition of Quality Records.
5.0 MANAGEMENT RESPONSIBILITY

5.1 MANAGEMENT COMMITMENT

Structural Ceramic’s top management as defined in the element matrix positions chart are committed to the development and improvement of the QMS demonstrated by any of the following:

A. Communicating to the organization the importance of meeting customer requirements, as well as regulatory and legal requirements.

B. Establishing the Quality Policy and objectives.

C. Ensuring that quality objectives are met.

D. Conducting Management Reviews.

E. Empowering WCM Pillar Teams

F. Ensuring the availability of the necessary resources.

5.2 CUSTOMER FOCUS

The top management of Structural Ceramics is committed to enhancing customer satisfaction. Customer satisfaction is realized via an organizational wide process to determine and meet customer requirements. Top management maintains and communicates customer focus to the organization via multiple means:

A. Daily operations meetings covering Safety, Quality and Delivery

B. Monthly department meetings.

C. Weekly production meetings.

D. Posted customer performance measures.

E. Quarterly communication meetings.

5.3 QUALITY POLICY

Structural Ceramic’s top management ensures that the quality policy (Attachment A):

A. Is appropriate to the purpose of the organization.

B. Includes a commitment to meeting requirements and to continually improve the effectiveness of the QMS.

C. Provides a framework for establishing and reviewing quality objectives.
D. Is communicated to and understood by our employees.

E. Is reviewed for continuing suitability, at Management or STECO reviews

5.4 PLANNING

5.4.1 Quality Objectives
Structural Ceramic’s top management shall ensure quality objectives at relevant functions and levels within the organization are established. The following list is our main quality objectives detailed further in attachment A:

A. Product Quality & performance
B. Customer Satisfaction
C. Health & Safety

These objectives are measurable and consistent with the quality policy.

5.4.2 Quality Management System Planning

Structural Ceramic’s top management will ensure the following:

A. The planning of the quality management system is carried out in order to meet the requirements given in section 4.1, as well as the quality objectives.

B. The integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

Structural Ceramic’s business planning process is largely dictated by Saint-Gobain corporate requirements. This process includes:

A. Long term strategic planning.
B. Market assessment.
C. Research and development support
D. Long term operational planning.
E. Capacity and capital planning.
F. Annual budgeting.

The outcome of the business planning process may result in changes to the Quality Management System necessary to assure continued adherence to the requirements of section 4.1 and the quality objectives.
5.5 RESPONSIBILITIES, AUTHORITY, and COMMUNICATION

5.5.1 Responsibility and Authority

Top management ensures that responsibilities and authorities are defined and communicated within the organization. (See Top Management Element Responsibility Matrix on the last page of this section)

In addition to the specific elements of the standard, the following Quality Management System roles and responsibilities are carried throughout the organization as noted:

5.5.2 Management Representative

The Quality Systems Manager a member of top management is appointed as the top management representative irrespective of other responsibilities with the defined authority and responsibility to ensure that

A. The processes of the QMS are established, implemented and maintained including the managing of the facility Quality Manual.
B. Reports are made to top management on the performance of the QMS, including any needs for improvement.

C. Awareness of customer requirements is promoted throughout the organization.

D. Act as the external liaison for matters related to the QMS.

(The Structural Ceramics Quality Engineer will act as the deputy management representative if required.)

5.5.3 Internal Communication

The top management of Structural Ceramics ensures that communication between the various levels and functions of its organization occurs regarding the effectiveness of the QMS. Some methods of this communication are plant communication meetings, newsletters, postings, and individual department meetings.

5.6 MANAGEMENT REVIEW

5.6.1 General

STECO and/or management reviews are conducted, and recorded to provide regular, systematic review of the QMS to ensure its continuing suitability, adequacy and effectiveness. These reviews will cover the topics noted on attachment B at least once per year or as needed to assess opportunities for improvement and the need for changes to the QMS, including the quality policy and objectives.

5.6.2 Review Input

The input to management review and/or STECO shall include information on the following:

A. Results of audits.

B. Customer feedback.

C. Process performance and production conformity.

D. Status of preventive and corrective actions.

E. Follow-up actions from previous management reviews.

F. Planned changes that could affect the quality management system.

G. Recommendations for improvement.
5.6.3 Review Output

The output from the management review and/or STECO shall include any decisions and actions related to the following:

A. Improvement of the effectiveness of the quality management system and its processes.

B. Improvement of product related to customer requirements.

C. Resource needs.
# Top Management Element Responsibility Matrix

Note: "P" denotes primary position responsible for element section

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6.0 RESOURCE MANAGEMENT

6.1 PROVISION OF RESOURCES

SGC will determine and provide the resources needed to:

A. Implement, maintain and continually improve the effectiveness of the QMS.

B. Enhance customer satisfaction by meeting customer requirements.

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. Conformity can be affected directly or indirectly by personnel performing any task in the QMS.

6.2.2 Competence, Training and Awareness

The organization shall:

A. Determine the necessary competence for personnel performing work affecting conformance to product requirements through annual business planning, management review meetings or as dynamic business opportunities arise.

B. Where applicable, providing training or other appropriate actions to achieve the necessary competency. This training will include, but not be limited to:
   i. Saint-Gobain Ceramics QMS indoctrination.
   ii. Procedures and work instructions for the tasks/jobs performed by the employee.
   iii. On the job training overseen by a company employee or by a company recognized and approved operator/trainer.
   iv. Safety and OSHA training, conducted both individually or in a group setting covering areas pertinent to the specific work environment.

C. Evaluate training effectiveness through supervisory/management assessment, equipment capabilities or testing where applicable.

D. Ensure that personnel are aware of the relevance and contribution to achieve the quality objectives.

E. Records of skills, education, training and experience are maintained as noted in the matrix below
All training documentation should note the employee trained, date and description of the course/instruction trained against.

### 6.3 INFRASTRUCTURE

The organization determines, provides and maintains the infrastructure needed to achieve conformity to product requirements. Within this scope is the generation of a five-year capital plan. This plan is generated and published annually to determine and meet the product requirements for process improvements, equipment effectiveness, capacity, work area optimization and building needs. Infrastructure includes the following:

A. Buildings, workspace and associated utilities.

B. Process equipment, both hardware and software.

C. Supporting services such as engineering, maintenance, communication, information systems and transportation.

### 6.4 WORK ENVIRONMENT

The management team will be responsible to determine and manage the work environment needed to achieve conformity to product and service requirements. Job descriptions, physical and safety requirements, EMS and QMS documentation will cover the work environment important to achieve conformity to product requirements. The human resource manager is responsible for maintaining and periodically reviewing job descriptions. The Health & Safety Coordinator is responsible to ensure safety records, training, recommendations for improvement, and program reviews are maintained.
7.0 PRODUCT REALIZATION

7.1 PLANNING of PRODUCT REALIZATION

Structural Ceramics plans and develops the processes for product realization. This planning is consistent with the other process requirements of the QMS and includes determining the following (See procedure MG-7.1-1p, Planning of Product Realization):

A. Quality & safety objectives and requirements for the product.

B. The need to establish processes, documentation, and provide resources specific to the product.

C. Required verification, validation, monitoring, measurement, inspection and test activities specific to the product, and product acceptance criteria.

D. Statutory and regulatory requirements applicable to the product.

E. Any additional requirements considered necessary by Structural Ceramics.

F. Records that are necessary to provide evidence for the realization processes and resulting product have met requirements.

The output of this planning will take the form of the “quality plan” for that product and will include as necessary drawings, process sheets, routings, shop orders, work instructions and other documentation deemed necessary to assure the product requirements are met.

7.2 CUSTOMER-RELATED PROCESSES

7.2.1 Determination of Product Requirements

SGC determines product requirements to include the following:

A. Requirements specified by the customer, including the requirements for shipment and post-shipment activities.

B. Requirements not stated by the customer but necessary for specified use or intended use.

C. Safe, statutory and regulatory requirements applicable to the product.

D. Any additional requirements determined by SGC which may include post delivery activities

7.2.2 Review of Requirements Related to the Product

SGC reviews the identified product requirements together with any additional internally identified requirements (See procedure CS-7.2-1p, Contract Review). This review is conducted prior to SGC commitment to supply a product to the customer to ensure:
A. Product requirements are defined, current and documented.

B. Where the customer provides no documented statement of requirements (e.g. verbal orders), the customer requirements are confirmed by SGC before order acceptance.

C. Order requirements differing from those previously expressed are resolved by customer service, engineering or marketing (See procedure CS-7.2-2p, Amendment to Contract).

D. SGC has the ability to meet the defined requirements either internally or externally or has a plan to meet the defined requirements.

E. Changes to product requirements are communicated, relevant documents are changed and relevant personnel are made aware of the changed requirements.

Records of the results of the review and actions arising from the review are maintained.

7.2.3 Customer Communication

SGC determines and implements effective arrangements for communication with customers related to:

A. Product information.
B. Inquires, order handling, including amendments.
C. Customer feedback, including customer complaints.

7.3 DESIGN AND DEVELOPMENT

This facility is a manufacturing site only. Part design, material research and development are provided by a separate facility or by our customers.

7.4 PURCHASING

7.4.1 Purchasing Process

To establish uniform procedures for the procurement of raw materials, products and services, either utilized or consumed during the production process to ensure conformance to specified requirements and adherence to plant policies and procedures.

Critical suppliers of materials or services are selected and approved by capability, tested product samples, pre-production and/or production test runs. Previous vendor history, ISO certification, site audits/visits and surveys will also be taken into consideration as noted on vendor survey.

Purchasing has the responsibility to select qualified suppliers and communicate our requirements to them for the purchase of raw materials, goods and services to meet the plant production schedule and to serve as the contact point in resolving any procurement related issues or problems (See procedure PR-7.4-1p, Supplier Selection). The purchasing department will establish audit criteria for the evaluation of suppliers.

Re-evaluations will take place to ensure continual improvement. Records relating to selection, evaluation and re-evaluation will be maintained (See procedures PR-7.4-2p, Supplier Audit and PR-7.4-3p, Verification of Purchased Products).
Quality Assurance and/or Process Engineering have the responsibility to provide the necessary support to ensure that raw materials and goods purchased conform to plant specifications, drawing and/or requirements.

Material Control/Receiving has the responsibility to evaluate incoming shipments for damage and verify goods received conform to the terms of the purchase order.

7.4.2 Purchasing Information

Purchasing will see that requirements for raw materials, goods and sub-contracted services, including industry standards for testing, calibration and certification of equipment where applicable, are clearly stated on the purchase order or contract and that the current specification, drawing, along with the most recent revision level, industry standard and all other pertinent information is referenced.

The critical supplier has the responsibility to provide raw materials, goods and services that meet our requirements and provide all data requested by the purchase order or contract. We reserve the right to reject purchased raw material, goods and services if they do not meet stated requirements.

7.4.3 Verification of Purchased Products

Critical suppliers are monitored to ensure that they provide quality materials in a timely manner and maintain an effective quality system. We reserve the right, and our customer's right, to perform audits, system surveys and product verification at a critical supplier facility.

Critical supplier and quality system audits will be conducted on an as needed basis to ensure their systems are adequate to meet our QMS and expectations. A critical supplier list will be annually reviewed and a report card forwarded summarizing the results.

The Purchasing Manager may arrange for vendor audits as deemed necessary. The Audit Team can be made up of personnel from Purchasing, Quality, Engineering and anyone else deemed necessary by our customer or plant management.

7.5 PRODUCTION AND SERVICE OPERATIONS

7.5.1 Control of Production

Structural Ceramics plans, releases and controls the production operations (See procedure EG-7.5-1p, Engineering Change Notice) by:

A. Information that specifies the characteristics of the product (e.g., current and/or revised drawings, specifications).
B. Shop packets and work instructions defining process activities, (e.g. process sheets, and current drawings).

C. The use, maintenance and inventory of suitable process equipment, tools, supplies and production fixtures.

D. The availability and use of measuring and monitoring equipment.

E. The implementation of monitoring and measuring activities (See procedure QA-8.1-3p, Inspection & Testing).

F. The implementation of defined processes for product release, delivery and post-delivery activities.

7.5.2 Validation of Processes for Production
There are no special processes at Structural Ceramics that require validation. All product characteristics and specifications are tested and inspected prior to release to the customer.

7.5.3 Identification and Traceability
Systems and procedures are established for product identification during all stages of production from receipt through delivery, including the maintenance of records or as specified by the customer or contract. The status of the product is identified with respect to the QMS measuring and monitoring requirements throughout product realization (See procedures MG-7.5-2p, Identification, Traceability & Material Handling and QA-8.1-3p, Inspection & Testing).

7.5.4 Customer Property
Structural Ceramics exercises care and control of customer supplied property which is primarily customer drawings and intellectual properties for the mutual understanding of the application for the intended Hexoloy® engineered solution. Structural Ceramics will engage an NDA (non-Disclosure Agreement) as needed to protect the mutual interest of the opportunity. In the event tooling or gages are supplied by a customer, they would be identified, verified and protected. If any customer supplied property, including intellectual property and personal data, is lost, damaged or otherwise unsuitable for use, Structural Ceramics shall report this to the customer and maintain a record of actions as required.

7.5.5 Preservation of Product
All products from receipt to delivery are maintained to ensure preservation that includes part number identification, material handling systems, packaging, assessment and location/bin storage. As applicable, preservation shall include the constituent parts of the product.

7.6 CONTROL of MEASURING and MONITORING EQUIPMENT
Structural Ceramics determines the measurements and monitoring to be utilized, and the equipment required to assure product conformance to specified requirements. We assure that these processes can be and are carried out in a manner consistent with the monitoring and measurement requirements.

Equipment used for inspection and measuring to demonstrate product conformance to specifications is controlled calibrated and maintained (See procedure QA-7.6-1p, Calibration Systems). This procedure ensures that the following conditions are met, where necessary to ensure valid results:

A. A measuring equipment master list is maintained to identify the type of gage, identification number, calibration interval, gage location, calibration history, calibration date and due date.

B. Equipment is calibrated or verified (or both) at prescribed intervals, or prior to use, against measurement standards having a known valid relationship to N.I.S.T. or other national or international standards. Where no such standard exists, the basis used for calibration or verification is recorded.

C. Documented calibration procedures are established and maintained, including details of equipment type, identification number, and frequency of checks, check method, acceptance criteria, and the action to be taken when results are unsatisfactory.

D. Engraving, labeling, or other appropriate means for identification and traceability identifies all inspection and measuring equipment.

E. Calibration and verification records for inspection and measuring equipment are maintained by the Quality Assurance Department.

F. The validity of previous results, when equipment is found not to conform to requirements, is assessed and recorded. Appropriate action is taken on the equipment and any product or servicing affected. Records of the results of calibration and verification are maintained.

G. Outside calibration services utilized for equipment calibration are qualified for N.I.S.T. traceability of calibration standards, checked for adequacy of calibration system, and validity of supplier calibration certification and ISO-17025 certified where applicable.

H. When necessary, gages will be safeguarded from adjustments that would invalidate the measurement result.

I. All equipment is protected from damage and deterioration during handling, maintenance, and storage.

When computer software is used for monitoring and measuring of specific requirements, it is confirmed to satisfy its application prior to use.
8.0 MEASUREMENT, ANALYSIS AND IMPROVEMENT

8.1 GENERAL
Structural Ceramics plans and implements the measurement, monitoring, analysis and improvement activities needed to demonstrate conformity to product requirements. This plan ensures the conformity, continual improvement and the effectiveness of the QMS. These activities determine the need, and extent of the statistical techniques and other applicable methods to be utilized (See procedure QA-8.1-3p, Inspection & Testing).

8.2 Monitoring and Measurement

8.2.1 Customer Satisfaction
SGC monitors information on customer perception as to whether SGC has fulfilled customer requirements as one of the QMS performance measurements.

The approaches used for customer feedback collection include:

A. Customer visits soliciting feedback on performance against customer requirements and other improvement opportunities.

B. Call reports that contain customer feedback.

C. Customer driven performance indicators rating SGC performance to customer requirements.

D. Monitoring returns and complaint data

This information will be reviewed in management reviews, STECO meetings or daily operation reviews for actions if required.

8.2.2 Internal Quality Audits
A yearly schedule of planned and documented Internal Quality Audits, to verify compliance with ISO 9001:2008, and QMS requirements will be utilized to determine the effectiveness of the implementation and maintenance of the QMS (See procedure QA-8.2-2p, Internal Auditing).

The Quality Engineer is responsible for the scheduling and implementation of the Internal Quality Audit program defining the areas to be audited including the results of previous audits. The scope of these audits ensures that all elements of ISO 9001:2008 and the QMS are audited yearly.

Audits are conducted by trained and qualified personnel who have completed 3rd party sponsored training or trained by a peer previously certified, and performed in accordance with documented audit procedures utilizing checklists that identify essential characteristics.
An audit program shall be planned considering the status and importance of the processes, areas to be audited, and the results of previous audits. The audit criteria, scope, frequency, and methods shall be defined. Auditor selection and conduct shall ensure objectivity and impartiality of the audit process. Auditors will not audit their own work.

Audit deficiencies will be documented and followed for corrective actions as identified during the audit. Management responsible for the area audited will ensure that actions are taken to eliminate detected nonconformities and their causes.

Non-compliances, follow-up and verification will be reviewed during the Management Review Meetings. Records of the audits and their results are maintained.

8.2.3 Measurement and Monitoring Of Processes
Structural Ceramics applies suitable monitoring methods including statistical techniques as required in measuring the QMS processes. This monitoring and measurement demonstrates the ability of the processes to achieve planned results. When planned results are not achieved, appropriate corrective action is taken. (See procedure QA-8.5-1p, Corrective & Preventive Action).

8.2.4 Measurement and Monitoring Of Product
Structural Ceramics measures and monitors the characteristics of its material and products to verify that requirements are met through:

A. Receiving Inspection.
B. In-Process Inspection.
C. Final Inspection
D. As specified in the purchase order.

Evidence of conformity with the acceptance criteria is documented, maintained and records indicating the person(s) authorizing release of the product for delivery to the customer. Product release will not proceed until all planned tests and inspection have been satisfactorily completed or unless otherwise approved by a relevant authority by the customer.

8.3 CONTROL OF NON-CONFORMING PRODUCT
Material or product identified as non-conforming to requirements during production is labeled and segregated to prevent unintended use or delivery. The controls, related responsibilities and authority for dealing with nonconforming product are defined in a procedure (See procedure QA-8.3-4p, Non-Conforming Product).
When non-conforming product is detected before delivery, Structural Ceramics will take appropriate action regarding consequences of the non-conformity including stop shipment, stop production and confinement of available inventory. Records of the non-conformities and any subsequent action taken, including concessions obtained are maintained.

Disposition of non-conforming items shall be taken as soon as practical, in accordance with the decisions made in review. Where applicable, Structural Ceramics shall deal with non-conforming product by;

A. Approved product deviation.

B. Scrap.

C. Sort and/or Rework, with re-verification of reworked product to demonstrate conformity to requirements.

D. Return to supplier or customer.

When non-conforming product is detected after delivery or use has started, Structural Ceramics takes appropriate action regarding the consequences of the nonconformity, including stop shipments, recalls, or any other agreed to customer prescribed actions, as applicable.

Deviation disposition for customer product requires customer notification and approval prior to shipment.

8.4 ANALYSIS OF DATA

The top management of Structural Ceramics determines and analyzes appropriate data to demonstrate the suitability, effectiveness and where continual improvements of the QMS can be made. This analysis includes data generated by measurement and monitoring activities including other relevant sources if necessary (i.e. customer returns, scrap analysis reports, production reports, P&L, and call reports).

This data is reviewed to provide information on:

A. Customer satisfaction.

B. Conformity to product requirements.

C. Characteristics of the processes, product and their trends including opportunities for preventive action.

D. Suppliers.

8.5 IMPROVEMENT

8.5.1 Continual Improvement

Structural Ceramics continually improves the effectiveness of the QMS through the use of the quality policy, WCM Pillar Teams, business objectives, audit results, analysis of data, corrective and preventive actions and management review.
8.5.2 Corrective Action

Structural Ceramics shall take action to eliminate the root cause of non-conformities to prevent recurrence. The actions will be appropriate to the effect of the non-conformity (See procedure QA-8.5-1p, Corrective & Preventive Action). This procedure includes:

A. Reviewing non-conformities (including customer complaints).
B. Determining the root cause(s) of non-conformities.
C. Reviewing immediate and permanent corrective actions taken.
D. Determining and implementing the corrective actions.
E. Recording results of actions taken.
F. Verify the effectiveness of the corrective actions taken through internal audits of the QMS.

8.5.3 Preventive Action

Structural Ceramics identifies preventive actions through WCM activities and other means to eliminate and or prevent the causes of potential non-conformities. Preventive actions taken are appropriate to the impact of the potential problems (See procedure QA-8.5-1p, Corrective & Preventive Action) which defines requirements for the following:

A. Utilize WCM Pillar Teams
B. Determining potential non-conformities and their causes.
C. Evaluating the need for action to prevent the occurrence of nonconformities.
D. Determining and implementing action needed.
E. Recording results of action taken.
F. Reviewing the effectiveness of the preventive action taken.
QUALITY POLICY

Structural Ceramics will strive to continually improve our skills, process capabilities, Quality Management System and organizational activities to drive a zero-defect culture to meet or exceed our customers' requirements for Hexoloy® engineered product solutions.

QUALITY OBJECTIVES

A. Product Quality and Performance
   a. Maintain Corrective and Preventive Action responses
   b. Decrease Plant Scrap as a % of SVP
   c. Measure and Improve Process Flow Team Metrics
   d. Measure % Scrap and Yield Rate

B. Customer Satisfaction
   a. Improve on-time delivery
   b. Decrease Customer Complaints ($ as % of Sales)
   c. Review & Communicate customer report cards & feedback

C. Safety & Environmental Compliance
   a. Eliminate Plant Injuries (TF1-TF2 = O)
   b. Improve on Energy, Water & Waste Objectives
   c. Monitor & Control Significant Aspects of business
Annual or Monthly STECO Management Meeting Topics
Attachment B Revision: 10-1-2015

Overview

- **Attendees**
  - Plant Mgr.
  - Quality Mgr. (Quality Management Rep.)
  - Facility Engineer (HSE Management Rep.)
  - Manufacturing Mgr.
  - Health & Safety Supervisor
  - Flow Team Mgr.
  - HR Mgr.
  - Group Controller
  - Worldwide Sales Director
  - WCM - Continuous Improvement Mgr.
  - Product & Plan Engineer Mgr.

- Review prior meeting actions
- Review KPI actual versus goals and/or Ytd targets
- Review QMS, EMS Policies and business objectives
- Record meeting minutes including action plan (assign actions for follow-up)

**Items / Metrics for Review**

A. **Product Conformity/Quality Systems (Quality Mgr.)**
   a. Quality Management System Internal Audits
   b. Customer Complaints (% of Sales)
   c. Corrective/Preventive Action System (CPAR)
   d. Customer/Supplier Performance Reports and/or site audits
   e. Internal Scrap (% of SVP)

B. **Plant Performance & WCM (Plant Mgr.)**
   a. Eliminate Plant Injuries (TF1-TF2)
   b. On-time Delivery vs Promise Date (% on-time)

C. **Financial & Internal Controls as needed (Comptroller)**

D. **Customer Satisfaction (Product Engineer & Marketing Mgr.)**
   a. Customer visits, surveys & feedback

E. **Resources & Training (HR Mgr.)**
   a. New or additional training requirements

F. **ISO 14001 (HSE Management Rep)**
   a. Environmental Internal Audits
   b. Compliance to customer or SGC legal requirements
   c. Communication from external parties or complaints
   d. SGC environmental performance
   e. Status of 14001 targets/objectives
   f. Any changes to legal or environmental aspects
   g. Improvement recommendations
1.0 CHANGE HISTORY:

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>10-1-2015</td>
<td>Change Matrix responsibilities, expanded roles to levels of plant &amp; added STECO to reviews, combined sections for manual</td>
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