

# Quality Systems Manual

**Zehrco-Giancola Composites, Inc.**

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## Management Approval

Name	Signature	Date
Chief Operating Officer	Tony Giancola _____	3-3-08 _____
Plant Manager	Rick DeGeorge _____	3-3-08 _____
President of Sales & Marketing	Joe Rellick _____	3-3-08 _____

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## Record of Revisions

Section	Revision	Approved By
Revise manual to comply with format and requirements of ISO 9001:2000	7/17/03	D. DeLAAT
Revise titles and descriptions.	3/9/04	D. Lyon/Tony Giancola
Revise titles	3/22/04	D. Lyon/Tony Giancola
Revise goals and titles	10/7/04	Tony Giancola
Final Revision for Submission to Registrar	3/1/05	Tony Giancola
Add new employees to organizational chart	3/3/08	Tony Giancola
Revise manual to comply with format and requirements of ISO 9001:2008	6/27/11	Dave Lyon

## Quality Policy

Zehrco-Giancola Composites, Inc. is dedicated to delivering products that meet or exceed customer expectations of support, service and satisfaction.

We are committed to complying with established requirements and continually improve the effectiveness of the quality management system. Top management has established measurable quality objectives to assess organizational performance.

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## Introduction to the Company

Zehrco-Giancola Composites, Inc. is a hi-tech custom composite molder serving a broad range of industries (Electric, Electronics, Mass Transit, Appliance, Reprographics, Medical, Construction, Business Machines, Office Equipment, Agriculture, Entertainment Industry, etc.) The Company employs approximately 100 associates at two facilities with combined area of 250,000 square feet.

Utilizing straight compression and transfer molding presses with press tonnage ranging between 25 and 2500 tons, composites are molded in our two facilities utilizing sheet molding compound (S.M.C) and bulk molding compound (B.M.C.). Vacuum assisted molding and extensive side pull actions on various molds provide capabilities to mold an array of geometries. Products from molded composites are produced utilizing internal mix formulations or commercial compound. Post molding capabilities include hand finishing, CNC finishing, painting, sub-assembly and final assembly.

The teams of empowered associates at Zehrco-Giancola bring together a broad variety of expertise that encourages continuous improvement, training and knowledge, cost effectiveness and partnerships with customers and suppliers. These principles are set forth to meet and/or exceed the expectations of Zehrco's stakeholders.

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## Quality Objectives

1. Achieve a maximum returns & allowances level of .5 percent of sales dollars
2. Achieve a maximum scrap level of 2.5 percent of sales dollars
3. Achieve a maximum material cost level of 37.6 percent of sales dollars
4. Achieve a productivity level of 100 percent
5. Achieve Lost Time Accident Level of 0.0
6. Achieve Recordable Injury Level of 0.0
7. Continually improve measurable Customer Satisfaction
8. Continually improve On-time Shipment performance

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## 1 Purpose

Quality at Zehrco-Giancola Composites, Inc. consists of providing products and services that meet or exceed our customer's requirements and specifications.

We totally support the concept that superior levels of performance result from sound management practices deliberately and systematically applied. Management that works toward clearly defined goals creates a Quality System program that works. The program for assuring Product Quality at Zehrco-Giancola Composites, Inc. is planned in accordance with the ISO 9001:2008 "Quality System Requirements", which we believe provides a logical structure for implementation.

Commitment to quality begins with quality people, a major prerequisite for the successful application of this manual. Zehrco-Giancola Composites, Inc. has that commitment.

## 2 Scope

This manual sets forth the Quality Assurance organization and system at Zehrco-Giancola Composites, Inc.

It is intended to provide our customers with objective evidence of compliance to their standards for performance and quality applicable to the precision production of sophisticated products.

The contents of this manual provide an in-depth overview of Zehrco-Giancola Composites, Inc.'s quality program and are intended to be current. Enhancements will occur requiring periodic updates. Review of the manual will be made annually.

It is Zehrco-Giancola Composites, Inc.'s policy to maintain an innovative quality management system which will assure that all product and services conform to contract requirements whether manufactured and/or processed by us or by our suppliers. The material compiled in this manual outlines the standard that will be used in the manufacture of products for all our customers.

Changes or temporary deviations to the quality policies and control systems are not permitted without the approval of the designated person who is responsible for its integrity.

The procedures described within this manual are intended to comply with the requirements of ISO 9001:2008 with the exception that Zehrco-Giancola does not engage in product design. Further, Zehrco-Giancola verifies conformance of products and services provided to its customers, thus validation of process requirements are not applicable.

## 3 Business Principles

Zehrco-Giancola's team members are treated respectfully and are provided with an opportunity to pursue intellectual and career growth in an organized, safe and healthy work environment.

Zehrco – Giancola's customers are supplied with quality products in response to their needs. Zehrco-Giancola Composites, Inc. conducts business openly and honestly to achieve the highest possible level of customer satisfaction.

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Company actions stress planning and attention to detail. Success is measured by results, not effort or intention. The highest level of personal and professional integrity is maintained at all times. Our commitments are met without exception.

## 4 Quality management System

### 4.1 General requirements

Zehrco-Giancola has established, documented, implemented and maintains a quality management system and continually improves its effectiveness in accordance with the requirements of ISO 9001:2008.

These identify how we:

- a) identify the processes needed for the quality management system and their application throughout the organization,
- b) determine the sequence and interaction of these processes (see Appendix B),
- c) determine criteria and methods needed to ensure that both the operation and control of these processes are effective (Page 7, Quality Objectives),
- d) ensure the availability of resources and information necessary to support the operation and monitoring of these processes,
- e) monitor, measure and analyze these processes, and,
- f) implement actions necessary to achieve planned results and continual improvement of these processes.

Where Zehrco-Giancola chooses to outsource any process that affects product conformity with requirements, Zehrco-Giancola ensures control over such processes. Control of such outsourced processes is identified within the quality management system.

### 4.2 Documentation requirements

#### 4.2.1 General

The quality management system documentation includes

- a) documented statements of a quality policy and quality objectives,
- b) a quality manual,
- c) documented procedures required by ISO 9001:2008 (see Appendix A),
- d) documents needed by Zehrco-Giancola to ensure the effective planning, operation and control of its processes, and,

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e) records required by ISO 9001:2008 and the quality management system (see 4.2.4).

## 4.2.2 Quality manual

Zehrco-Giancola established and maintains a quality manual that includes:

- a) the scope of the quality management system, including details of and justification for any exclusions,
- b) the documented procedures established for the quality management system, or reference to them, and
- c) a description of the interaction between the processes of the quality management system.

## 4.2.3 Control of documents

Documents required by the quality management system are controlled. Records are a special type of document and are controlled according to the requirements given in 4.2.4.

A documented procedure is established to define the controls needed:

- a) to approve documents for adequacy prior to issue,
- b) to review and update as necessary and re-approve documents,
- c) to ensure that changes and the current revision status of documents are identified,
- d) to ensure that relevant versions of applicable documents are available at points of use,
- e) to ensure that documents remain legible and readily identifiable,
- f) to ensure that documents of external origin are identified and their distribution controlled, and
- g) to prevent the unintended use of obsolete documents, and to apply suitable identification to them if they are retained for any purpose.

## 4.2.4 Control of records

Records are established and maintained to provide evidence of conformity to requirements and of the effective operation of the quality management system. Records remain legible, readily identifiable and retrievable. The Quality Records Retention Schedule is established to define the controls needed for the identification, storage, protection, retrieval, retention time and disposition of records.

## 5 Management responsibility

### 5.1 Management commitment

Top management provides evidence of its commitment to the development and implementation of the quality management system and continually improving its effectiveness by:

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- a) communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements,
- b) establishing the quality policy,
- c) ensuring that quality objectives are established,
- d) conducting management reviews, and
- e) ensuring the availability of resources.

## 5.2 Customer focus

Zehrco-Giancola top management ensures that customer requirements are determined and are met with the aim of enhancing customer satisfaction (see 7.2.1 and 8.2.1).

## 5.3 Quality policy

Zehrco-Giancola top management ensures that the quality policy:

- a) is appropriate to the purpose of the organization,
- b) includes a commitment to comply with requirements and continually improve the effectiveness of the quality management system,
- c) provides a framework for establishing and reviewing quality objectives,
- d) is communicated and understood within the organization, and,
- e) is reviewed for continuing suitability.

## 5.4 Planning

### 5.4.1 Quality objectives

Zehrco-Giancola top management ensures that quality objectives, including those needed to meet requirements for product (see 7.1a), are established at relevant functions and levels within the organization. The quality objectives are measurable and consistent with the quality policy and are identified on page 7 of this manual.

### 5.4.2 Quality management system planning

Zehrco-Giancola top management ensures that:

- a) the planning of the quality management system is carried out in order to meet the requirements given in 4.1, as well as the quality objectives, and

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- b) the integrity of the quality management system is maintained when changes to the quality management system are planned and implemented.

## **5.5 Responsibility, authority and communication**

### 5.5.1 Responsibility and authority

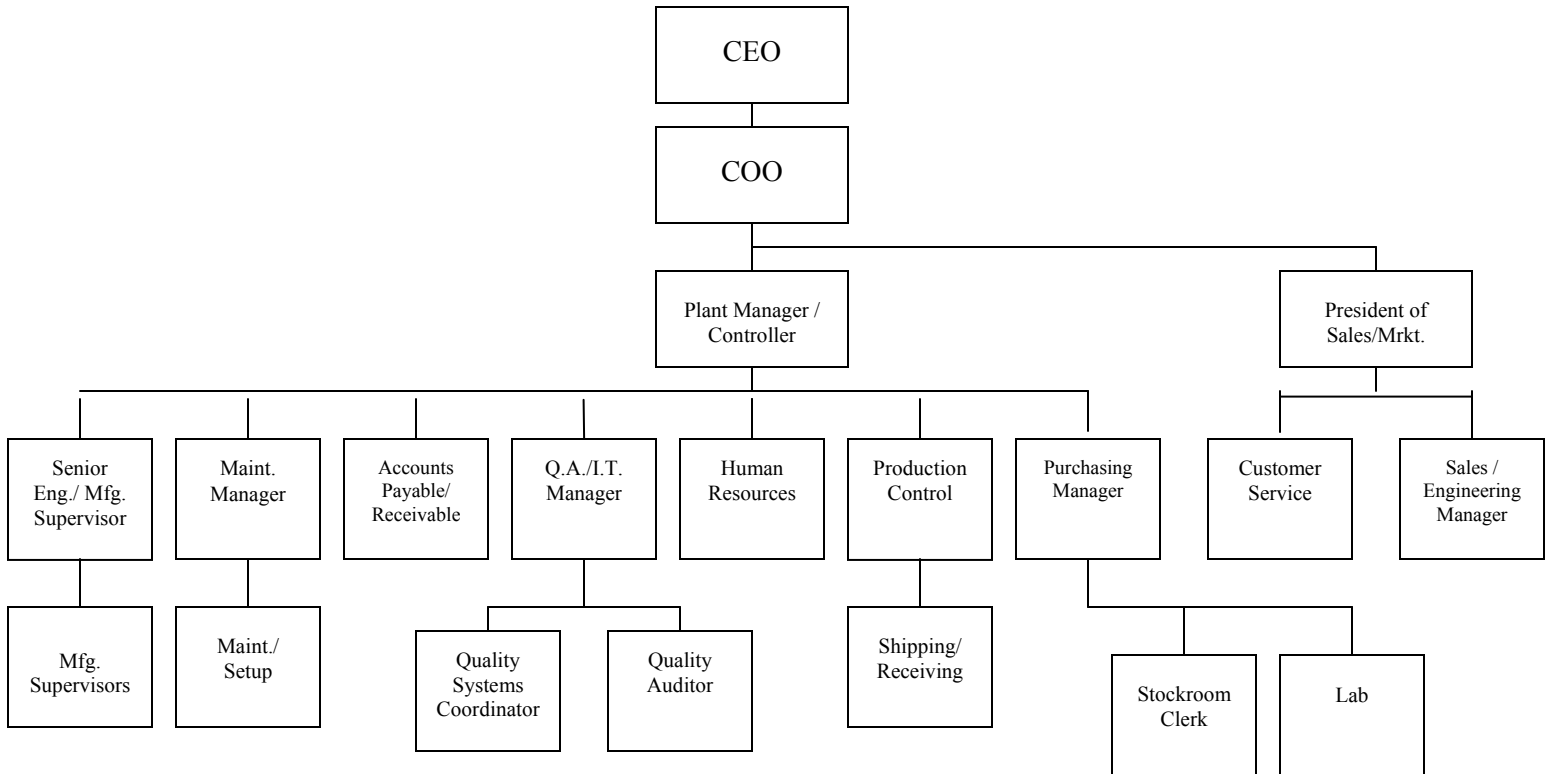
Zehrco-Giancola top management ensures that responsibilities and authorities are defined and communicated within the organization.

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## ORGANIZATIONAL CHART



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Title	Responsibility
Senior Engineer/ Manufacturing Supervisor*	<p>Oversees the implementation of all customer tooling, revision and/or corrections as direct by Sales Engineer, within the quoted time frame or better.</p> <p>Issues necessary paperwork coordinates the pressing, inspection, finishing, and shipping of samples. Also, formulates and creates manufacturing process routing information. Provides pertinent information relative to production set-up and run criteria.</p> <p>Coordinates and works within the schedule of all sample runs so that the impact upon production pressing and finishing capacities is minimized while satisfying customer requirements. This coordination is a cooperative effort between Senior Engineer, Production Controller, and applicable pressing and finishing department heads. The Senior Engineer may perform sampling and finishing duties but may require assistance from department lead personnel.</p> <p>Provides information regarding tool (mold) status, through appropriate assigned individual(s), as requested by the customer.</p> <p>The Senior Engineer is personally responsible for the tuning-in of tooling to achieve the part dimension desired by the customer, while maintaining the parts' general quality of appearance and the efficiency with which it is produced.</p> <p>When assigned, will work to reduce scrap percentages and variance reduction programs.</p> <p>Undertakes special project work, as assigned, which is of a technical nature to provide new methods to assure high quality products at competitive costs.</p> <p>Assumes responsibility for the manufacturing of new products; establishes an engineering file on each new job and participates in the Engineering Meetings on new tooling programs to specify basic tooling and finishing requirements.</p> <p>Actively supports and participates in the design and tuning-in procedures of new molds, inserts, insert loaders, finishing fixtures, gages, and coordinates efforts to secure the necessary equipment and materials thereto.</p> <p>Responsible for maintenance of housekeeping, along with other production supervisors.</p>
Manufacturing Supervisor*	<p>The responsibility and the authority for insuring those whom are responsible for adherence to processes, procedures and policies that govern the manufacturing of fiberglass reinforced plastics. To provide a safe and organized work environment to enhance production of quality products in a timely manner. Provide leadership, communicate and challenge each associate to become an</p>

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Title	Responsibility
	<p>effective member of the team.</p> <p>Responsible for maintenance of housekeeping, along with other production supervisors.</p>
Engineering Manager*	<p>Has the responsibility and authority to carry out appropriate activities relating to molding compounds and other materials used at Zehrco-Giancola Inc. These activities include but are not limited to developing/identifying materials that meet/exceed customer specifications, testing or having materials tested to insure specifications are met, overseeing random sampling for verification of production molding compounds, selecting and approving appropriate raw materials, tracking trends in the performance of material and providing technical support to all departments.</p> <p>Responsible for overseeing all engineering support including new project launches, in process manufacturing support, deviations, and interface with customers. Responsible and the authority to establish and maintain procedures for development and verification of process and product capabilities and customer supplied tools. Provides technical support to Zehrco-Giancola's marketing/sales associates and internal/external manufacturing representatives. To direct tooling / fixture related vendors on repair and procedures for tooling.</p>
Quality / I.T. Manager*	<p>The responsibility and authority to carry out the implementation, of the Quality System. This includes evaluating results to determine strengths and weaknesses in the Quality System, assisting with seeking root causes of non-conformances and verifying the effectiveness of corrective actions. Also responsible for verifying processes and procedures to prevent departures from specifications, providing current documentation, quality reports and to foster a quality environment where organizational-wide participation fosters.</p> <p>As the ISO Management Representative, is responsible and has the authority for ensuring that the quality system meets the ISO 9001:2008 revision requirements and reports to management on the performance of the quality system.</p> <p>As I.T. Manager has the responsibility to install, upgrade, and maintain all computer hardware, network, virus and firewall protection, and all other software applications. This includes maintaining a data backup scheme that will ensure no loss of data. It also includes training users on any new hardware or software. The I.T. Manager will recommend, purchase and install new hardware and software as needs arise. Zehrco-Giancola's Information Technology will keep pace with current trends and remain in sync with the company's Quality system.</p> <p>Responsible for maintenance of IT and communications.</p>

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Title	Responsibility
Quality Systems Coordinator/Engineering Assistant*	The responsibility and authority to carry out the maintenance and documentation of the Quality System. This also includes the planning and scheduling of internal audits, evaluating results to determine strengths and weaknesses in the Quality System. Assists in activities relating to Engineering.
Quality Auditor*	The responsibility to verify parts are conforming to quality documentation, ISO procedures are being followed and training on new and existing employees.
Purchasing Manager*	Has the responsibility for buying manufacturing products, maintenance items, and office supplies. Also, responsible for pricing and vendor qualifications. Renews and setup new contracts.
Human Resources/Controller*	<p>As the HR Manager, administration of employee benefits including: health insurance, workers compensation, vacation, sick leave, and 401(k) retirement plan. Hire, develop, discipline, and terminate employees. Preparation of payroll.</p> <p>As the controller, oversee accounting department, prepare and pay monthly and quarterly payroll tax reports, monthly financial statements, and monthly bank reconciliations.</p>
President of Sales/Mrkt.*	Overall management of sales and marketing functions, to include market studies, pricing guidelines, and set overall business direction.
Customer Service*	The responsibility of the Customer Service Rep is to interface between the customer and ZGC by providing information in response to inquiries about our services and/or orders placed with us. Responsibilities include; order entry, handling of customer complaints, updating of data, assisting with pricing, and general office tasks.
Production Control	Schedule all manufacturing exercises, including materials, personnel, and manufacturing.
Shipping/Receiving Associate*	The responsibility to receive and ship products.
Maintenance Manager*	The responsibility and authority to direct the maintenance associates to specify, install and maintain the company's facilities and equipment to ensure the highest level of safety, quality and production. To develop capital investment requests, technical details of new equipment and equipment modifications, approve procedures affecting equipment installation, maintenance, repair and operation. Responsible for maintenance of facilities, equipment and trucks.
Maintenance/Setup	The responsibility to maintain equipment either preventive maintenance or breakdown maintenance. The responsibility to setup molds in the presses.

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Title	Responsibility
*	
All Associates*	All associates are responsible to know and apply Zehrco-Giancola Quality System. Those associates that perform manufacturing operations and/or verification of product quality have the responsibility and authority to hold material and/or pause production whenever nonconformances exist. Correction must be verified by the associate with the proper authority before production continues.
*	Irrespective of other responsibilities, has the freedom and authority to intervene in circumstances of procedural, product or process non-conformance, recommend solutions and support actions to resolve them.

## 5.5.2 Management representative

Zehrco-Giancola top management has appointed a member of management who, irrespective of other responsibilities, has responsibility and authority that includes:

- a) ensuring that processes needed for the quality management system are established, implemented and maintained,
- b) reporting to top management on the performance of the quality management system and any need for improvement, and
- c) ensuring the promotion of awareness of customer requirements throughout the organization.

## 5.5.3 Internal communication

Zehrco-Giancola top management ensures that appropriate communication processes are established within the organization and that communication takes place regarding the effectiveness of the quality management system. The methods used may include, but are not limited to, meeting minute publications, quality objectives performance reports, bulletin postings, departmental and company-wide meetings.

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## 5.6 Management review

### 5.6.1 General

Zehrco-Giancola top management reviews the organization's quality management system, at least quarterly, to ensure its continuing suitability, adequacy and effectiveness. This review includes assessing opportunities for improvement and the need for changes to the quality management system, including the quality policy and quality objectives.

Zehrco-Giancola management staff reviews elements of the Quality System on a yearly basis to ensure the continuing suitability and effectiveness in satisfying the requirements of ISO 9001:2008.

Records from management reviews are maintained (see 4.2.4).

### 5.6.2 Review input

The input to management review includes information on:

- 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 quality management system, and
- g) recommendations for improvement.

### 5.6.3 Review output

The output from the management review includes any decisions and actions related to:

- a) improvement of the effectiveness of the quality management system and its processes,
- b) improvement of product related to customer requirements, and
- c) resource needs.

## 6 Resource management

### 6.1 Provision of resources

Zehrco-Giancola determines and provides the resources needed:

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- a) to implement and maintain the quality management system and continually improve its effectiveness, and
- b) to enhance customer satisfaction by meeting customer requirements.

## 6.2 Human resources

### 6.2.1 General

Personnel performing work affecting product quality are competent on the basis of appropriate education, training, skills and experience.

### 6.2.2 Competence, awareness and training

Zehrco-Giancola:

- a) determines the necessary competence for personnel performing work affecting product quality,
- b) provides training or takes other actions to satisfy these needs,
- c) evaluates the effectiveness of the actions taken,
- d) ensures that its personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the quality objectives, and
- e) maintains appropriate records of education, training, skills and experience (see 4.2.4).

## 6.3 Infrastructure

Zehrco-Giancola determines, provides and maintains the infrastructure needed to achieve conformity to product requirements. Infrastructure includes, as applicable

- a) buildings, workspace and associated utilities,
- b) process equipment (both hardware and software), and
- c) supporting services (such as transportation or communication).

(reference QA-INF-6.3 infrastructure)

## 6.4 Work environment

Zehrco-Giancola determines and manages the work environment needed to achieve conformity to product requirements.

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## 7 Product realization

### 7.1 Planning of product realization

Zehrco-Giancola plans and develops the processes needed for product realization. Planning of product realization is consistent with the requirements of the other processes of the quality management system (see 4.1).

In planning product realization, Zehrco-Giancola determines the following, as appropriate:

- a) quality objectives and requirements for the product;
- b) the need to establish processes, documents, and provide resources specific to the product;
- c) required verification, validation, monitoring, inspection and test activities specific to the product and the criteria for product acceptance;
- d) records needed to provide evidence that the realization processes and resulting product meet requirements (see 4.2.4).

The output of this planning is in a form suitable for Zehrco-Giancola method of operations.

### 7.2 Customer-related processes

7.2.1 Determination of requirements related to the product, Zehrco-Giancola determines:

- a) requirements specified by the customer, including the requirements for delivery and post-delivery activities,
- b) requirements not stated by the customer but necessary for specified or intended use, where known,
- c) statutory and regulatory requirements related to the product, and
- d) any additional requirements determined by the organization.

7.2.2 Review of requirements related to the product

Zehrco-Giancola reviews the requirements related to the product. This review is conducted prior to commitment to supply a product to the customer (e.g. submission of tenders, acceptance of contracts or orders, acceptance of changes to contracts or orders) and ensures that:

- a) product requirements are defined,
- b) contract or order requirements differing from those previously expressed are resolved, and
- c) Zehrco-Giancola has the ability to meet the defined requirements.

Records of the results of the review and actions arising from the review are maintained (see 4.2.4).

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Where the customer provides no documented statement of requirement, the customer requirements are confirmed by Zehrco-Giancola before acceptance.

Where product requirements are changed, Zehrco-Giancola ensures that relevant documents are amended and that relevant personnel are made aware of the changed requirements.

## 7.2.3 Customer communication

Zehrco-Giancola determines and implements effective arrangements for communicating with customers in relation to:

- a) product information,
- b) enquiries, contracts or order handling, including amendments, and
- c) customer feedback, including customer complaints.

## 7.3 Development

### 7.3.1 Development planning

Zehrco-Giancola plans and controls the development of product. During the development planning, Zehrco-Giancola determines:

- a) the development stages,
- b) the review, verification and validation that are appropriate to each development stage, and
- c) The responsibilities and authorities for development.

Zehrco-Giancola manages the interfaces between different groups involved in development to ensure effective communication and clear assignment of responsibility.

Planning output is updated, as appropriate, as the development progresses.

### 7.3.2 Development inputs

Inputs relating to product requirements are determined and records maintained (see 4.2.4). These inputs include:

- a) functional and performance requirements,
- b) applicable statutory and regulatory requirements,
- c) where applicable, information derived from previous similar designs, and
- d) other requirements essential for Development.

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These inputs are reviewed for adequacy. Requirements are complete, unambiguous and not in conflict with each other.

## 7.3.3 Development outputs

The outputs of development are provided in a form that enables verification against the development input and are approved prior to release.

Development outputs:

- a) meet the input requirements for Development,
- b) provide appropriate information for purchasing, production and for service provision,
- c) contain or reference product acceptance criteria, and
- d) specify the characteristics of the product that are essential for its safe and proper use.

## 7.3.4 Development review

At suitable stages, systematic reviews of development are performed in accordance with planned arrangements (see 7.3.1)

- a) to evaluate the ability of the results of development to meet requirements, and
- b) To identify any problems and propose necessary actions.

Participants in such reviews include representatives of functions concerned with the Development stage(s) being reviewed. Records of the results of the reviews and any necessary actions are maintained (see 4.2.4).

## 7.3.5 Development verification

Verification is performed in accordance with planned arrangements (see 7.3.1) to ensure that the Development outputs have met the Development input requirements. Records of the results of the verification and any necessary actions are maintained (see 4.2.4).

## 7.3.6 Development validation

Development validation is performed in accordance with planned arrangements (see 7.3.1) to ensure that the resulting product is capable of meeting the requirements for the specified application or intended use, where known. Wherever practicable, validation is completed prior to the delivery or implementation of the product. Records of the results of validation and any necessary actions are maintained (see 4.2.4).

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## 7.3.7 Control of development changes

Development changes are identified and records maintained. The changes are reviewed, verified and validated, as appropriate, and approved before implementation. The review of Development changes include evaluation of the effect of the changes on constituent parts and product already delivered.

Records of the results of the review of changes and any necessary actions are maintained (see 4.2.4).

(Reference ENG-PD-7.3 Product Development)

## 7.4 Purchasing

### 7.4.1 Purchasing process

Zehrco-Giancola ensures that purchased product conforms to specified purchase requirements. The type and extent of control applied to the supplier and the purchased product is dependent upon the effect of the purchased product on subsequent product realization or the final product.

Zehrco-Giancola evaluates and selects suppliers based on their ability to supply product in accordance with Zehrco-Giancola requirements. Criteria for selection, evaluation and re-evaluation are established. Records of the results of evaluations and any necessary actions arising from the evaluation is maintained (see 4.2.4).

### 7.4.2 Purchasing information

Purchasing information is 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, and
- c) quality management system requirements.

Zehrco-Giancola ensures the adequacy of specified purchase requirements prior to their communication to the supplier.

### 7.4.3 Verification of purchased product

Zehrco-Giancola establishes and implements the inspection or other activities necessary for ensuring that purchased product meets specified purchase requirements.

Where Zehrco-Giancola or its customer intends to perform verification at the supplier's premises, Zehrco-Giancola states the intended verification arrangements and method of product release in the purchasing information.

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## 7.5 Production and service provision

### 7.5.1 Control of production and service provision

Zehrco-Giancola plans and carries out production and service provision under controlled conditions. Controlled conditions 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 devices,
- e) the implementation of monitoring and measurement, and
- f) the implementation of release, delivery and post-delivery activities.

### 7.5.2 Validation of processes for production and service provision

Zehrco-Giancola is capable of verifying conformance of products and services provided to its customers, therefore section 7.5.2 is not applicable.

### 7.5.3 Identification and traceability

Where appropriate, Zehrco-Giancola identifies the product by suitable means throughout product realization. Zehrco-Giancola identifies the product status with respect to monitoring and measurement requirements.

Where traceability is a requirement, Zehrco-Giancola controls and records the unique identification of the product (see 4.2.4).

### 7.5.4 Customer property

Zehrco-Giancola exercises care with customer property while it is under Zehrco-Giancola control or being used by Zehrco-Giancola. Zehrco-Giancola identifies, verifies, protects and safeguards customer property provided for use or incorporation into the product. If any customer property is lost, damaged or otherwise found to be unsuitable for use, this is being reported to the customer and records are maintained (see 4.2.4).

### 7.5.5 Preservation of product

Zehrco-Giancola preserves the conformity of product during internal processing and delivery to the intended destination. This preservation includes identification, handling, packaging, storage and protection. Preservation also applies to the constituent parts of a product.

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## 7.6 Control of monitoring and measuring devices

Zehrco-Giancola determines the monitoring and measurement to be undertaken and the monitoring and measuring devices needed to provide evidence of conformity of product to determined requirements (see 7.2.1).

Zehrco-Giancola establishes processes to ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

Where necessary to ensure valid results, measuring equipment:

- a) is calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification are recorded;
- b) is adjusted or re-adjusted as necessary;
- c) is identified to enable the calibration status to be determined;
- d) is safeguarded from adjustments that would invalidate the measurement result; and
- e) is protected from damage and deterioration during handling, maintenance and storage.

In addition, Zehrco-Giancola assesses and records the validity of the previous measuring results when the equipment is found not to conform to requirements. Zehrco-Giancola takes appropriate action on the equipment and any product affected. Records of the results of calibration and verification are maintained (see 4.2.4).

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 as necessary.

## 8 Measurement, analysis and improvement

### 8.1 General

Zehrco-Giancola plans and implements the monitoring, measurement, analysis and improvement processes needed

- a) to demonstrate conformity of the product,
- b) to ensure conformity of the quality management system, and
- c) to continually improve the effectiveness of the quality management system.

This includes 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 quality management system, Zehrco-Giancola monitors information relating to customer perception as to whether Zehrco-Giancola has met customer requirements. The methods for obtaining and using this information are determined.

### 8.2.2 Internal audit

Zehrco-Giancola conducts internal audits at planned intervals to determine whether the quality management system

- a) conforms to the planned arrangements (see 7.1), to the requirements of ISO 9001:2008 and to the quality management system requirements established by Zehrco-Giancola, and
- b) is effectively implemented and maintained.

An audit program is 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. Selection of auditors and conduct of audits ensure objectivity and impartiality of the audit process. Auditors do not audit their own work.

The responsibilities and requirements for planning and conducting audits, and for reporting results and maintaining records (see 4.2.4) are defined in a documented procedure.

The management responsible for the area being audited ensures that 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 (see 8.5.2).

### 8.2.3 Monitoring and measurement of processes

Zehrco-Giancola applies suitable methods for monitoring and, where applicable, measurement of the quality management system 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.

### 8.2.4 Monitoring and measurement of product

Zehrco-Giancola monitors and measures the characteristics of the product to verify that product requirements have been met. This is carried out at appropriate stages of the product realization process in accordance with the planned arrangements (see 7.1).

Evidence of conformity with the acceptance criteria is maintained. Records indicate the person(s) authorizing release of product (see 4.2.4).

Product release and service delivery do not proceed until the planned arrangements (see 7.1) have been satisfactorily completed, unless otherwise approved by a relevant authority and, where applicable, by the customer.

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## 8.3 Control of nonconforming product

Zehrco-Giancola 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 a documented procedure.

Zehrco-Giancola deals 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 to preclude its original intended use or application.

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, are maintained (see 4.2.4).

When nonconforming product is corrected it is subject to re-verification to demonstrate conformity to the requirements.

When nonconforming product is detected after delivery or use has started, Zehrco-Giancola takes action appropriate to the effects, or potential effects, of the nonconformity.

## 8.4 Analysis of data

Zehrco-Giancola determines, collects and analyzes appropriate data to demonstrate the suitability and effectiveness of the quality management system and to evaluate where continual improvement of the effectiveness of the quality management system can be made. This includes data generated as a result of monitoring and measurement and from other relevant sources.

The analysis of data provides information relating to:

- a) customer satisfaction (see 8.2.1),
- b) conformity to product requirements (see 7.2.1),
- c) characteristics and trends of processes and products including opportunities for preventive action, and
- d) Suppliers.

## 8.5 Improvement

### 8.5.1 Continual improvement

Zehrco-Giancola continually improves the effectiveness of the quality management system through the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

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## 8.5.2 Corrective action

Zehrco-Giancola takes action to eliminate the cause of nonconformities in order to prevent recurrence. Corrective actions are appropriate to the effects of the nonconformities encountered.

A documented procedure is established to 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 corrective action taken.

## 8.5.3 Preventive action

Zehrco-Giancola 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.

A documented procedure is established to define requirements for:

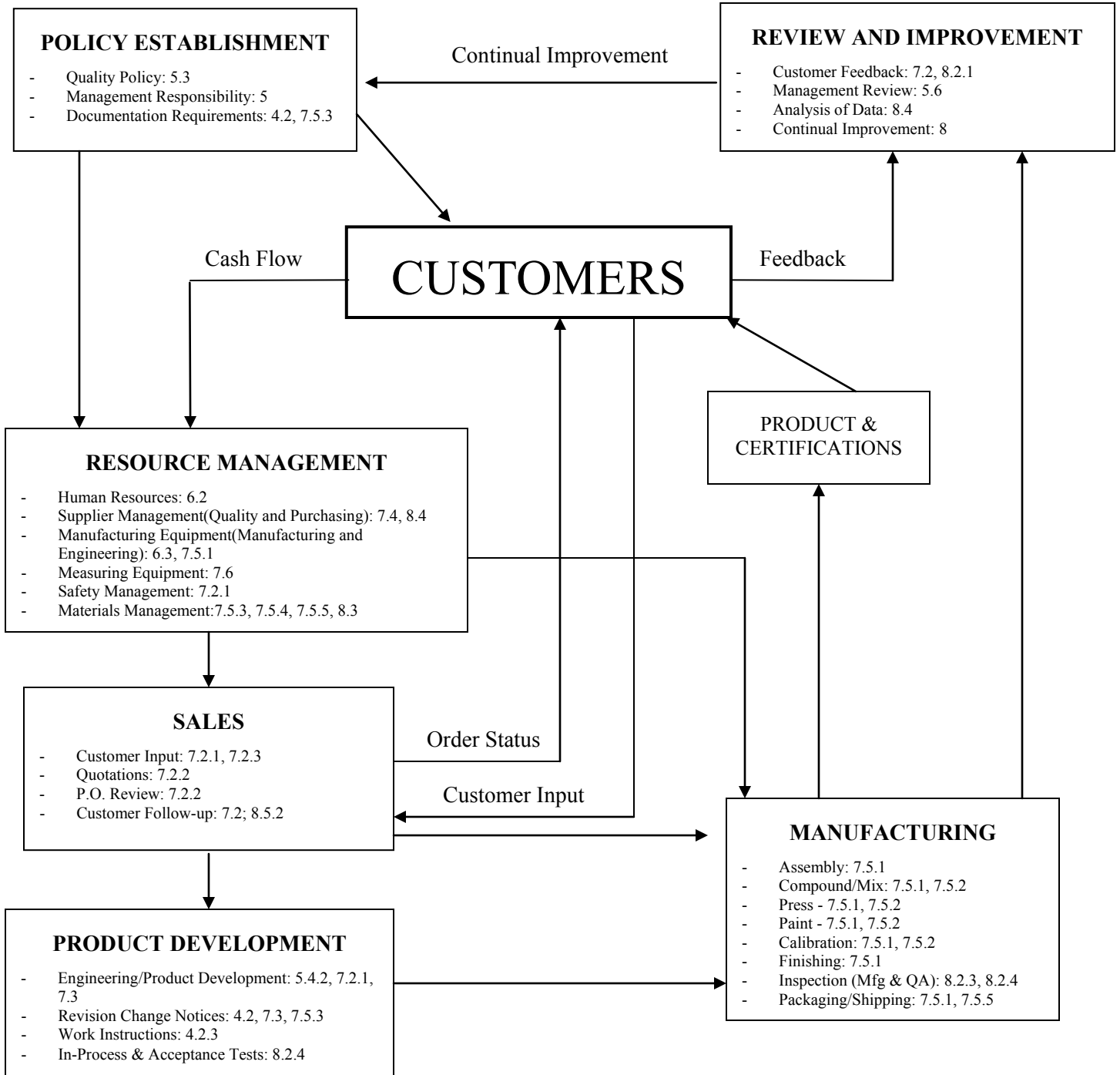
- a) determining potential nonconformities and their causes,
- b) evaluating the need for action to prevent occurrence of nonconformities,
- c) determining and implementing action needed,
- d) records of results of action taken (see 4.2.4), and
- e) reviewing preventive action taken.

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## Appendix B - Process Interaction Flow Chart



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