

Quality Control Guidelines for Suppliers

Sumitomo Electric Industries, Ltd.

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Contents of Quality Control Guidelines

Guidelines	Page
<ul style="list-style-type: none"> [1.1] Purpose [1.2] Application [1.3] General requirements [1.4] Requirements for a quality control system 	4
<ul style="list-style-type: none"> [2.1] Management commitment [2.2] Customer focus [2.3.1] Obligations of Supplier's top management [2.3.2] Obligations of Supplier's management representative 	5
<ul style="list-style-type: none"> [3.1] Cooperation with the Purchaser [3.2.1] Special processes and qualifications [3.2.2] Inspection processes and qualifications [3.3] Assurance of manufacturing capacity [3.4] Work environment 	6
<ul style="list-style-type: none"> [4.1] Confirmation of order specifications [4.1.1] Handing of maintenance parts after product delivery [4.2.1] Confirmation of specifications [4.2.2] Supplier's drawings for internal use 	7
<ul style="list-style-type: none"> [4.2.3] Drawings, specifications and other documents supplied by the Purchaser [5.1] Design control 	8
<ul style="list-style-type: none"> [5.2] Conducting reliability tests [Recommendation] [5.3] Design change control 	9
<ul style="list-style-type: none"> [6.1] Purchasing process [6.2.1] Order requirements [6.2.2] Use of vendors 	10
<ul style="list-style-type: none"> [6.2.3] Quality system Audit [6.2.4] Discontinuation of products and suspension of business 	11
<ul style="list-style-type: none"> [6.3] Verification of purchased products [7.1] Process quality control for mass-produced products <ul style="list-style-type: none"> [7.1.1] Prototyping and launching [7.1.2] Initial production quality control [7.1.3] Mass production quality control 	12
<ul style="list-style-type: none"> [7.2] Quality control procedures [7.3] Application of work standards [7.4] Process condition change <ul style="list-style-type: none"> [7.4.1] Change in process condition 	13

<p>[7.4.2] Change in personnel[Recommendation] [7.5] Acceptance inspection,on-site inspections and construction completion inspections by the Purchaser</p>	1 4
<p>[7.6] Dispatch of engineers [7.7] Quality Assurance for delivered products and construction results</p>	1 5
<p>[7.8] Quality control records (lot control, history of manufacturing and quality states) [7.9] Control of supplied goods and loaned goods</p>	1 6
<p>[7.10.1] Control of products in stock [7.10.2] Packaging, rust prevention, shipping and transportation [7.11] Measuring instruments and testing devices used for inspection</p>	1 7
<p>[8.1] Customer satisfaction [8.2] Attainment of quality objectives [8.3.1] Inspections and tests [8.3.2] Indication and record of inspection states [8.4] Treatment of deficient products</p>	1 8
<p>[8.5] Concession [8.6] Corrective action [8.7] Feed Forward of quality issued at the suppliers</p>	1 9
<p>< Description ></p>	2 0

[1.1] Purpose

(1) This Quality Control Guidelines document hereafter the document supplements quality control related rules specified in Purchase Agreement. This document specifies quality assurance requirements for assurance and improvement of good quality, which shall be satisfied by suppliers who design, manufacture and/or construct products or software purchased by the Purchaser, except the products listed below, to ensure that the suppliers satisfy quality requirements specified in individual contracts when fulfilling orders placed for supply, manufacturing or part thereof, designing, construction and/or maintenance of purchased products, or designing, manufacturing, testing, maintenance and other development processes of software, based on the principle of mutual trust.

<Products not covered herein>

Transportation, inspection and calibration of equipment and measuring instruments, materials for prototyping, samples and office supplies

(2) If there is any discrepancy between this document and an individual contract, the individual contract and Purchase Agreement shall have priority.

[1.2] Application

(1) For requirements for green procurement, refer to the separately specified Green Procurement Guidelines.

(2) This document requires conformance with ISO 9000 and consists of chapters corresponding to those in ISO 9000 to describe quality control required by the Purchaser.

[1.3] General requirements

The Supplier shall establish, document, implement and maintain its own quality management system and continually improve its effectiveness to reflect the on the quality management system.

When the Supplier chooses to outsource a process of its own and control over it, the Supplier shall ensure the outsourced process is properly controlled.

[1.4] Requirements for a quality control system

(1) The Supplier shall ensure that supply, manufacturing or part thereof, designing, construction and maintenance of purchased products or designing, manufacturing, testing, maintenance and other development processes of software, which are performed based on orders placed by the Purchaser, conform to required specifications. For this purpose, the Supplier shall establish and maintain a quality control system, which is composed of economical processes to fulfill the contract, including designing, purchasing of materials, manufacturing/construction, shipping, delivery to customers and measures to be taken in case of a deficiency.

(2) This quality control system shall enable prevention and early detection of deficient products and also enable proper and timely corrective measures. Responsibilities for quality control of purchased products specified in purchase specifications and other documents shall be clarified in the Supplier's organization.

(3) The Supplier shall provide the Purchaser with quality assurance system charts, complaint handling system charts and organization charts (or ISO 9001 quality manuals as a substitute for these three types of charts), and QC process charts of the Supplier and of vendors specified in the supply chain list specified in [6.2.2].

* The concept of materials among four Ms (men, machines, materials and methods) does not apply to software. QC process charts for software shall include work flows in lieu of materials.

(4) The Purchaser shall carry out field audits based on quality assurance system charts, complaint handling system charts and organization charts (or ISO 9001 quality manuals as a substitute for these three types of charts), and QC process charts, and shall require the Supplier to correct any deficiency pointed out in the audits.

(5) When the Supplier changes a document specified in (3) after submitting it to the Purchaser, the Supplier shall submit a revised document to the Purchaser without delay whether or not the Purchaser requires the Supplier to do so. The Supplier shall submit a design/process change application form (refer to [7.4.1]) before changing any content of a QC process chart.

Required records

- **Record of management reviews**
- **Record of qualified workers**
- **Record of changes in drawings, specifications and other documents**
- **Record of actions taken against deficiencies pointed out in design reviews**
- **Record of serial numbers affected by design changes**
- **Record of inspections on purchased products**
- **Record of serial numbers affected by process changes**
- **Record of on-site inspections (Minutes: Progress of rework and other measures taken against deficiencies pointed out)**
- **Record of manufacturing or construction and inspection of purchased products (Record of in-process inspections and history of manufacturing and construction)**
- **Record of defective products**

[2.1] Management commitment

The Supplier shall continually improve quality for stable delivery of products. For this purpose, top management shall maintain and control the quality management system and shall take total responsibility for quality of the Supplier's products.

[2.2] Customer focus

The Supplier shall establish, maintain and improve a mechanism to do the following tasks in order to ensure delivery of products that satisfy the Purchaser.

- (1) Confirmation of product specifications required by the Purchaser
- (2) Management of responses to the Purchaser

[2.3.1] Obligations of Supplier's top management

Supplier's top management shall conduct management reviews on the following matters at planned intervals to ensure its continuing suitability, adequacy and effectiveness and keep a record of the reviews.

- (1) Assessing opportunities for improvement
- (2) Assessing the need for changes to the quality management system, including the quality policy and quality objectives

[2.3.2] Obligations of Supplier's management representative

The Supplier's management representative shall submit the following information to top management as an input to management reviews.

- a) Results of internal audits, customer audits and audits by auditing organizations,
- b) Customer feedback regarding customer satisfaction, including complaints,
- c) Performance of designing, manufacturing, purchasing and other processes 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.

[3.1] Cooperation with the Purchaser

When Supplier's products do not satisfy quality requirements specified by the Purchaser, the Supplier shall provide resources (such as personnel, articles, equipment and environment) required by the Purchaser.

[3.2.1] Special processes and qualifications

(1) A special process is a process in which it is difficult to assure quality through inspections conducted after products are finished or after construction is completed.

(Examples: welding, plating, vapor deposition, heat treatment, quenching, chemical treatment, brazing, soldering, metal bonding and excavation)

(2) The supplier shall establish and maintain control standards for special processes. The Supplier shall take photos or other measures to maintain evidence of work results, such as excavation, as needed.

The Supplier shall submit a list of special processes, indicating the types of special processes, a list of qualified workers and evidence of qualification, such as standards and certificates, as required by the Purchaser.

If there is any change in the content of a list, the Supplier shall submit the revised list to the Purchaser.

(3) For workers engaged in a special process, the Supplier shall:

- ① provide the workers with education and training to maintain their skills,
- ② register qualified workers and maintain a record of them, and
- ③ confirm their qualifications before assigning them to work in a special process.

[3.2.2] Inspection processes and qualifications

(1) The Supplier shall establish and maintain control standards for inspection processes.

(2) For workers engaged in an inspection process, the Supplier shall:

- ① provide workers with education and training to maintain their skills and determine whether their skills are being maintained,
- ② register qualified workers and maintain a record of them,
- ③ confirm their qualifications before assigning them to work in inspection processes, and
- ④ clearly indicate these requirements.

(3) Educate workers about the importance of in-process inspections.

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[3.3] Assurance of manufacturing capacity

The Supplier shall ensure manufacturing capacity sufficient to manufacture products for the Purchaser.

[3.4] Work environment

(1) The Supplier shall implement a 5S program (5S stands for *Seiri*, *Seiton*, *Seiketsu*, *Seiso* and *Shitsuke* in Japanese, which mean orderliness, tidiness, cleanliness, cleaning and discipline) to avoid unexpected trouble and make abnormalities transparent in the work environment.

(2) The Supplier shall ensure a work environment that does not introduce foreign material or foreign matter, to assure quality assurance consistent with green manufacturing (for example, in lead-free processes).

[4.1] Confirmation of order specifications

(1) When the Purchaser issues order specifications, such as purchase specifications, drawings and purchase orders, these documents shall state necessary and sufficient requirements. The Supplier shall maintain a record of communications and negotiations that are made with the Purchaser before specifications are finalized.

Order specifications for commissioning of processing or manufacturing of products are issued on the basis that the Supplier has equipment and manufacturing capacity conforming to the specifications. If not, the Supplier shall consult the Purchaser.

When the Supplier receives order specifications from the Purchaser, the Supplier shall review the specifications, and consult the Purchaser if there is any concern or question.

(2) When intended use and common-sense usage of purchased products are self-evident but not specified in order specifications, the Supplier shall include requirements for such use in designing, manufacturing, installation and other conditions, and/or inform the Purchaser in advance.

(3) Observance of laws and regulations: The Supplier shall observe laws and regulations in force in the locale where products are used, ensuring compliance with, and preventing deviation from, applicable laws and regulations.

The Supplier shall check if a design or process change affects compliance with laws and regulations. If so, the Supplier shall ensure compliance with such laws and regulations.

Examples: PSE(Product Safety of Electrical appliance & materials), VCCI(Voluntary Control Council for Interference by Information Technology Equipment), ARIB(Association of Radio Industries and Businesses) and other regulations in Japan

(4) The Supplier shall submit delivery specifications that clarify specifications of delivered products. --> Refer to [4.2.1].

(5) Green procurement

For requirements related to green procurement, refer to the Green Procurement Guidelines.

The Supplier shall submit documents about green procurement in advance when it is required by the Purchaser to do so. If the Supplier fails to submit required documents, the delivered products may be rejected as not appropriate for use as green products.

[4.1.1]Handing of maintenance parts after product delivery

When producing maintenance parts that have been discontinued since delivery of the product, the Supplier shall provide the same quality control for procurement and provision of such parts as for the product itself.

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[4.2.1] Confirmation of specifications

(1) The Supplier shall submit approved production drawings and delivery specifications (or construction procedures for constructions) to the Purchaser promptly after receiving the purchase specifications.

(2) The Supplier shall submit inspection procedures and other documents to the Purchaser before starting inspections.

(3) If the Supplier or the Purchaser has any questions about the content of the purchase specifications, approved production drawings, delivery specifications, inspection procedures and other drawings, the party shall inform the other party of it and take actions according to written instructions.

[4.2.2] Supplier's drawings for internal use

(1) The Supplier shall maintain drawings, specifications and other documents in their latest states so that the documents are readily available to the Supplier's inspection and other departments that require the documents.

(2) When the Supplier makes any change to a drawing, specification or other document, the Supplier shall record the change to prevent use of obsolete documents.

(3) When the Supplier makes any change to a drawing, specification or other document that affects the Purchaser's purchase specifications, the Supplier shall clarify details of the change and get the approval of the Purchaser.

[4.2.3] Drawings, specifications and other documents supplied by the Purchaser

(1) The Supplier shall not use any drawings, specifications and other documents supplied by the Purchaser, without the approval of the Purchaser, for any purpose other than manufacturing and constructing purchased products, and shall not copy such documents for any purpose other than the intended use.

(2) When the Purchaser makes a change to a drawing, specification or other document supplied by the Purchaser, the Supplier shall return all obsolete documents and use the latest drawings.

The Supplier shall revise its own drawings, specifications and other documents that are affected by the Purchaser's changes and use the latest drawings.

(3) When the Supplier delivers products to the Purchaser after manufacturing or construction is completed, the Supplier shall, in principle, return all supplied drawings by appending them to the delivered products. (Construction drawings need not be appended to products.) The Supplier shall delete any electronic drawings.

The Purchaser may ask the Supplier to keep supplied drawings and replace them with revised versions, if continued orders are expected and the Purchaser gives approval for such control of documents. In this case, the Supplier need not return supplied drawings at the time of delivery. To prevent storage of too many supplied drawings, the Purchaser shall discuss with the Supplier disposal of drawings for products that are unlikely to be produced in the future.

[5.1] Design control

(1) The Supplier shall fully grasp the Purchaser's requirements in designing products and carry out design reviews in each stage of design, manufacture and test.

<Design reviews for hardware or software>

The design review shall cover functionality, performance, reliability, operability, maintainability, expandability, ease of manufacturing, and other aspects of product safety (PS). During design review, the Supplier shall take into consideration feedback from deficiencies found in the past, and the usage environment and operation.

For safety reviews, the Supplier shall take into consideration not only normal use but also use in severe or bad environments, use for other purposes, improper use, alteration and use of products in deteriorated or malfunctioning states.

To realize environmentally-friendly products, the Supplier's product design shall consider reducing materials and parts, increasing the product's service life, improving recycling and ease of recovery, and minimizing impact on work, facilities and environments.

<Design reviews for construction>

The design review shall cover safety of construction, operating states at customers, impact on existing equipment, move-in of equipment, materials and construction equipment into the construction site, identification of move-in routes with distinction between public lands and private lands, reliability, maintainability, ease of construction, protective covering, and disposal of construction waste.

For safety reviews, the Supplier shall take into consideration safety of construction, safety of nearby residents, and traffic safety.

(2) The Supplier may conduct design reviews with the Purchaser's engineers at the request of the Supplier or the Purchaser.

(3) The Supplier shall keep a record of design reviews to enable follow-up of progress on actions taken against deficiencies pointed out. The Purchaser may require the Supplier to submit the record.

(4) The Supplier shall specify evaluation test items for products for which the Purchaser requires the Supplier to conduct initial product evaluation tests, and shall submit results of the evaluation tests to the Purchaser.

[5.2] Conducting reliability tests [Recommendation]

(1) The Supplier shall fully understand the Purchaser's requirements, clarify methods and conditions of reliability tests, and conduct the reliability tests to assure reliability of purchased products before delivering them to the Purchaser. The Supplier shall submit test results immediately upon request by the Purchaser.

(2) The Supplier shall conduct periodic reliability tests, if it is required by the Purchaser to do so. If any abnormality occurs, the Supplier shall inform the Purchaser of the state immediately in writing.

(3) Consider conducting the above-mentioned reliability test for single parts used in the product or combinations thereof. Examples include formed parts, electrolytic capacitors, optical parts, adhesive, and chemical adhesive.

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(4) Even if a part specified by the Purchaser is deficient, the Supplier shall cooperate with the Purchaser to solve the problem.

[5.3] Design change control

(1) The following are defined as design changes. Addition of notes and correction of errors are not considered to be design changes.

- Addition, change and deletion of functions (for system, equipment or software design)
- Adoption of new parts or components (for equipment design)
- Change to substrate patterns (for equipment design)
- Change to dimensions, shapes, materials, plating specifications and painting specifications in drawings of structural and mechanical parts (for equipment design)
- Change to wiring and connection diagrams (for equipment design)
- Addition, change and deletion of basic software structure and data structure (for software design)
- Addition, change and deletion of interfaces between main pieces of software (for software design)
- Addition, change and deletion of external interfaces (for equipment or software design)
- Addition, change and deletion of operating environment (OS and middleware) (for software design)
- Change to the development environment (compilers, test tools and their versions) (for software design)

When a design change occurs, the Purchaser may require the Supplier to submit product samples for verification.

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The Purchaser shall deliberate or audit (refer to [6.2.3]), approve and return the samples. If there is any possibility that one or more deficiencies may occur, the Purchaser may require the Supplier to take corrective actions, such as an additional evaluation.

(2) At the time of design change, the Supplier shall:

- change inspection procedures, QC process charts and other related documents,
- conduct required evaluation tests,
- record serial numbers affected by the design change, and
- verify adequacy of the design change and conduct a design review to examine risks caused by the design change and actions to be taken against the risks.
- Before changing design of products custom-ordered by the Purchaser (products not listed in catalogs), the Supplier shall submit a design/process change application form to the Purchaser.

[6.1] Purchasing process

To ensure realization of required products, the Supplier shall carry out the following:

- (1) The Supplier shall manage purchased materials, including clarifying any conditions to product manufacturing.
- (2) When purchasing materials from a vendor, the Supplier shall evaluate the vendor according to a standard based on criteria such as technical capabilities and supply capacity, and shall get the approval of the Purchaser in advance.
- (3) The Supplier shall get certificates of inspection for purchased materials from vendors of the materials.
- (4) The Supplier shall audit a new vendor before starting business with it, and shall continuously audit it thereafter.

[6.2.1] Order requirements

When purchasing materials or outsourcing work, the Supplier shall clarify the following:

- (1) To prevent problems from occurring, the Supplier shall verify adequacy of specifications of purchased materials or details of outsourced work before placing the order.
- (2) The Supplier shall determine specific order requirements and also confirm them mutually with a vendor. The Supplier shall include manufacturing processes, equipment to be used, and qualifications of workers in the order requirements.

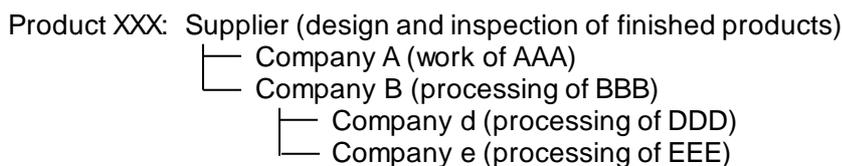
[6.2.2] Use of vendors

(1) When the Supplier outsources manufacturing or construction of products entirely or partially to a third party, the Supplier shall submit a supply chain list at conclusion of an individual contract. The supply chain list shall contain details on the business conducted by the Supplier or the Supplier's subcontractors or vendors (hereinafter, Subcontractors, etc.) for each product or each construction. It shall clarify manufacturing or construction contractors engaged in processing or construction. It shall also clarify vendors of products listed in catalogs and materials. It need not clarify further vendors except for special parts required by the Supplier.)

(a) Equipment

The Supplier shall submit a supply chain list not only for purchased products based on purchase specifications but also for general-purpose products of the Supplier.

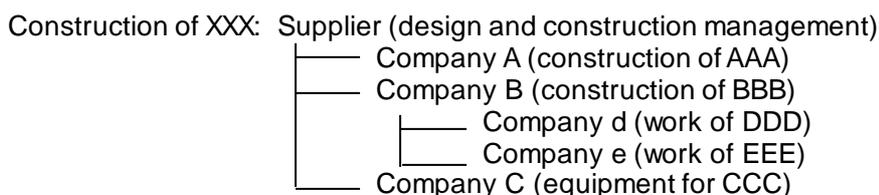
(Example)



(b) Construction

The Supplier shall submit a construction system chart, a safety management system chart and a supply chain list as shown below:

(Example)



The Supplier shall also clarify judgment criteria for selecting vendors and manufacturing/construction contractors and provide the Purchaser with grounds for adequacy of the vendors and contractors before starting production. The Supplier shall hold a preparation meeting to review adequacy before starting production.

(2) Before changing any content of the supply chain list, the Supplier shall submit a design/process change application form to the Purchaser to get the approval.

The Supplier shall notify the Purchaser in writing of details, such as the vendor's name, personnel, responsible persons, the scope of outsourcing, the reason for outsourcing, the relationship with the Supplier and the quality control state of the vendor, before getting the approval of the Purchaser.

As in the case of selecting vendors, the Supplier shall also clarify selection criteria and provide the Purchaser with grounds for vendor adequacy before starting production. The Supplier shall hold a preparation meeting to review adequacy before starting production.

(3) The Supplier shall be responsible for leading subcontractors and conducting audits of them (refer to [6.2.3]) to ensure that they satisfy quality requirements specified by the Purchaser. The Purchaser shall check the progress of audits conducted by the Supplier on subcontractors when the Purchaser audits the Supplier.

Even if the Purchaser allows the Supplier to outsource products or construction entirely or partially to a third party, the Supplier shall still be responsible for quality of the products or construction.

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(4) Even if a part specified by the Purchaser is deficient, the Supplier shall cooperate with the Purchaser to solve the problem.

[6.2.3] Quality System Audit

(1) The Purchaser has the right to audit factories and construction sites of the Supplier and its vendors to confirm and evaluate that the quality assurance systems are maintained and quality control is implemented properly. The Supplier shall cooperate with the Purchaser for this purpose.

(a) Types of work to be audited in principle: Processing, plating, substrates, sheet metals, assembling, and important or special electronic parts

(b) Audit timing: When adopting a new Supplier, when launching a new product, when changing a process, when defects occur frequently, when a severe defect occurs, or periodically

(c) Items to audit: As per the audit sheet

(d) The Purchaser may specially examine the state of subcontractor audits conducted by the Supplier.

(2) Before conducting an audit, the Purchaser may request the Supplier to submit materials necessary for the audit as well as self-audit results based on the Purchaser's audit sheet.

(3) If any deficiency is pointed out in an audit, the Supplier shall immediately correct it and submit a correction report.

(4) The Supplier shall audit its vendors according to the Purchaser's audit procedures specified above.

[6.2.4] Discontinuation of repair/maintenance parts and as long as the production at purchaser goes on

(1) Discontinuation of products and repair services

The Supplier shall assume an obligation to provide maintenance services (repairs and delivery of products for maintenance) as long as products are used. When it becomes difficult to continue to provide maintenance services because raw materials, parts, manufacturing equipment or other resources become unavailable or repairs become impossible, the Supplier shall notify the Purchaser of the situation with a written description of the reason, alternative measures and other details.

When the Purchaser accepts it as unavoidable, the Purchaser shall take actions, such as calculating the required number of products for maintenance and making final procurement in consideration of customers' operation schedules and the state of occurrence of product failures.

When the Supplier decides to discontinue manufacturing of products or change specifications, model names or other details of products listed in the Supplier's catalogs or products made according to purchase specifications (semi-custom products manufactured by adding the Purchaser's required specifications to the products listed in

the Supplier's catalogs), the Supplier shall notify the Purchaser of the decision with a written description of the reason, alternative measures and other details in order to enable the Purchaser's continued production. When the Purchaser accepts it as unavoidable, the Purchaser shall take actions, such as calculating the required number of products and making final procurement in consideration of the volume of continued production.

(2) Suspension of business

When it becomes difficult for the Supplier to continue business, the Supplier shall notify the Purchaser of the situation with a written description of the reason, alternative measures and other details.

When the Purchaser accepts it as unavoidable, the Purchaser shall take necessary measures in consideration of customers' operation schedules and the state of occurrence of product failures.

[6.3] Verification of purchased products

(1) The Supplier shall confirm through inspections that purchased materials and/or outsourced products satisfy requirements and shall keep a record of the results.

(2) The Supplier shall audit the vendor's state of quality to ensure that products satisfy requirements.

[7.1] Process quality control for mass-produced products

[7.1.1] Prototyping and launching

(1) During the prototype and launch stages, the Supplier shall clarify differences from mass-production design, simulate manufacturing conditions in mass production as much as possible, and do a trial of the same process control as in mass production.

(2) With regard to the results of measures taken to address deficiencies that the Engineering or Development Department finds under their control,

the Supplier shall utilize acquired statistical quality control data to prevent the occurrence of deficiencies and outflow during the mass-production process by validating the process design and additionally establishing a quality control system at the start of mass production.

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[7.1.2] Initial production quality control

(1) At the start of mass production, the Supplier shall determine the production period and quality target values, such as process capability indexes, and carry out the initial production quality control to verify the quality control system examined in the prototype and launch stages.

(2) If there is any deficient product, particularly, when it could not be found during prototype and launch, the Supplier shall be make a full analysis to prevent occurrence during, or escape from, the mass-production process.

[7.1.3] Mass production quality control

(1) After the initial production control is finished, the Supplier shall control mass-produced products by utilizing quality control techniques to maintain stable quality, making efforts to improve quality through daily quality improvement activities, and carrying out trend management.

(2) After making a significant change to any of the four Ms, the Supplier shall carry out steps (1) and (2) in [7.1.2] Initial production control by paying attention to the same points as those in the initial production control. (Four Ms: Men, machines, materials and methods)

[7.2] Quality control procedures

- (1) The Supplier shall develop written procedures required for performing tasks specified in these requirements, maintain the procedures in the latest state and keep them available for the Purchaser for reference or use.
- (2) The Supplier shall submit the written procedures upon request by the Purchaser.
- (3) When the Purchaser finds any deficiency in the written procedures, the Purchaser shall require the Supplier to correct it after consultation.

[7.3] Application of work standards

- (1) The Supplier shall carry out work based on its own work standards in principle. The Supplier may request the Purchaser to present work standards.
- (2) The Purchaser has the right to require the Supplier to present work standards, and examine them as needed. If any deficiency is found in the examination, the Purchaser may require the Supplier to take corrective actions.

(3) Before performing a task not defined in the predetermined work standards above or in the quality control process chart, analyze the work risk (FMEA), notify the concerned departments at the Purchaser of the necessity of the task, and ask the Purchaser for instructions.

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[7.4] Process condition change

Changes must be addressed without being overlooked even if multiple departments at the Supplier are concerned. (For example, changes must be notified not only to the Supplier's quality control department but also to related parties in their manufacturing, design and development, and procurement departments.)

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[7.4.1] Change in process condition

(1) A process change is defined as a change in a process flow chart or QC process chart. Examples are listed below.

- ① Changing the place of manufacturing (Establishment of a new factory or change to another factory)
- ② Changing secondary, tertiary or further vendors (Adoption of a new subcontractor or change to another vendor)
- ③ Changing Supplier's processes (Introduction of new equipment, expansion or reconstruction of a process, change in a die or molded product or change in a production system)
Note) If there are multiple lines and/or equipment of the same type, a change from the designated line or equipment to a different one is also defined as a process change.
- ④ Changing production methods (Forging, casting, heat treatment, welding, washing, painting, processing, assembling, pressing, forming, sintering or other methods <construction methods, procedures, auxiliary materials, etc.>
- ⑤ Changing manufacturing conditions (Temperature, pressure, electric power, voltage, current, speed or other condition)
- ⑥ Changing materials (Change of manufacturers, change to another material with the same specifications, change of auxiliary materials or change of roughly formed materials)
- ⑦ Changing inspection methods (Change of inspection equipment or inspection methods)
- ⑧ Changing compiler, linker, machine or source language for software

(2) At the time of process change, the Supplier shall:

- ① Change inspection procedures, QC process charts and other related documents,
- ② Conduct required evaluation tests,
- ③ Record serial numbers affected by the process change,

- ④ Verify adequacy of the process change and conduct a review to examine risks caused by the process change and actions to be taken against the risks, and
- ⑤ Submit a design/process change application form to the Purchaser before changing a process for products other than those listed in catalogs.

<Notes>

The design/process change application form shall have description or appendices of the following information:

- ① Reason for the change
- ② Details of the change and affected characteristics
- ③ A quality assurance plan indicating all important confirmation activities required to implement the change
- ④ An evaluation plan indicating characteristics to be evaluated, the number of samples and a schedule
- ⑤ QC process charts and inspection procedures (in which changes shall be clarified)

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Characteristic values before or after change

The Purchaser may ask the Supplier to provide not only the final characteristic values but also the control items for interim characteristics.

When a design or process change occurs, the Purchaser may require the Supplier to submit product samples for verification.

The Purchaser shall deliberate or audit (refer to [6.2.3]), approve and return the samples. If there is any possibility that one or more deficiencies may occur, the Purchaser may require the Supplier to take corrective actions, such as an additional evaluation.

[7.4.2] Change in personnel [Recommendation]

(1) When there is a change in managers who handle products for the Purchaser (persons responsible for design control, process control, production control or quality control), the Supplier shall notify the Purchaser of the change immediately.

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When there is a change in manager, clarify the management policies.

(2) When there is a change in workers who handle products for the Purchaser, the Supplier shall notify the Purchaser of the change as needed. The Supplier shall notify the Purchaser before making a change that may greatly affect quality, such as a change to workers who have not been trained or a change of all workers.

[7.5] Acceptance inspection, on-site inspections and construction completion inspections by the Purchaser

The Supplier shall cooperate with the Purchaser on on-site inspections. When conducting an on-site inspection, the Purchaser shall keep a record of it (minutes including deficiencies pointed out) for mutual confirmation. The Purchaser shall give the approval for shipping products from the Supplier depending on the result of the on-site inspection as follows.

(1) Products to be delivered to the Purchaser

The on-site inspector(s) shall give the following directions depending on the inspection results.

Products that have passed the inspection: Allowed to be shipped.

Products that need rework: Allowed to be shipped after the on-site inspector(s) checks documents or conducts an inspection again and confirms that the product has been reworked completely.

(2) Products to be delivered directly to a customer of the Purchaser

The Quality Assurance Group Manager or Section Manager shall give the approval based on a report submitted by the on-site inspector(s).

If a product needs to be reworked, the on-site inspector(s) needs to check documents or conduct an inspection again and confirms that the product has been reworked completely.

(3) If an on-site inspection has revealed that a product needs to be reworked, the Supplier shall notify the on-site inspector(s) of the completion of rework in writing (a record of on-site inspection describing the completion of rework or other corrective actions) to enable the shipping approval procedure specified above.

(4) Delivered products shall pass the Purchaser's acceptance inspections (including on-site inspections).

The Purchaser may make a concession in acceptance inspections at its discretion.

(5) Products directly delivered to customers of the Purchaser

The Purchaser may ask the Supplier to deliver products directly to customers of the Purchaser if it is unavoidable to do so for observance of delivery time or if the products have been supplied repeatedly and are proven to have stable quality.

In this case, the Supplier shall submit a certificate of inspection or a quality warranty to the Purchaser and get the approval of quality assurance personnel of the Purchaser before shipping the products.

<Construction>

(1) The Purchaser shall conduct a construction completion inspection (together with a customer of the Purchaser in some cases) immediately after construction is completed. The Purchaser shall give the Supplier an instruction how to conduct a construction completion inspection (whether it is an on-site inspection or a documentary examination) before completion of construction.

(2) The Supplier shall develop a written inspection procedures based on purchase specifications and other documents and submit it to the Purchaser to get approval. If there is any remaining work at the time of construction completion inspection, the Supplier shall submit a list of remaining work together with the inspection procedures.

(3) The Supplier shall correct deficiencies pointed out in a construction completion inspection by reworking or other means and complete remaining work as its responsibility. The Supplier shall submit a notification of completion, indicating completion of each item in the list of deficiencies and the list of remaining work.

[7.6] Dispatch of engineers

The Purchaser may request the Supplier to dispatch the Supplier's specialized engineers to a place specified by the Purchaser to take action remedying deficiencies found in acceptance inspections or for early resolution of problems when any of the following problems have occurred in a witness inspection or in a process of the Purchaser.

Allocation of engineers shall be determined after consultation between both parties.

- ① When a high defect rate is found or products need to be sorted at an acceptance inspection
- ② When a defect rate is high or products need to be sorted in the Purchaser's processes
- ③ When some action needs to be taken in the Purchaser's processes in response to complaints from the Purchaser's customers

[7.7] Quality Assurance for delivered products and construction results

(1) The Supplier shall manufacture products or perform construction based on its own work standards, inspect the products or constructions according to the inspection procedures approved by the Purchaser, and deliver the products that have passed inspection.

(2) If any deficiency is found in a product after it is accepted by the Purchaser (and also after it is delivered to a customer) and it is obviously attributable to design, manufacturing or construction performed by the Supplier, the Supplier shall repair the product free of charge or manufacture a new product immediately according to instructions given by the Purchaser.

(3) When the Supplier delivers a product to, or completes construction for, the Purchaser, the Supplier shall submit a certificate of inspection which proves that the product or construction has passed the Supplier's finished product inspection and/or a written confirmation of completion of construction.

(4) The Supplier and the Purchaser must agree on the determined limit sample for inspection. The Supplier and the Purchaser must also agree on the setting values for measuring instruments, testing devices, and jigs and tools (e.g. measurement accuracy or field of vision).

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[7.8] Quality control records (lot control, history of manufacturing and quality states)

(1) Traceability and lot (serial number) control

The Supplier shall control products to be delivered to the Purchaser by assigning a lot number or serial number to each product to ensure traceability in manufacturing. (Products that cannot be controlled by assigning a lot number or serial number due to their nature shall be controlled to prevent mixing based on their order numbers or production numbers.)

* Example of history of manufacturing (including manufacturing at vendors of the Suppliers):

Place of manufacturing, date and time of manufacturing, workers and inspectors, quality data for important processes and important inspection items, quality of materials and parts used for products, manufacturing equipment and jigs and tools

(2) The Supplier shall keep records of manufacturing, construction and inspection of purchased products (a record of in-process inspections and history of manufacturing/construction) and keep them ready for submission at the request of the Purchaser.

* In particular, if any deficiency occurs, the Purchaser shall require the Supplier to submit records in the range related to the deficiency.

(3) Submission of reports on quality states

The Supplier shall quantitatively grasp the state of quality for products (for example, the quality state in an acceptance inspection and the defect state in a process) and periodically report the states to the Purchaser regarding products continuously ordered by the Purchaser. (The interval should be six months in principle but may be determined after consultation.) The Supplier shall provide the Purchaser with samples of lot-controlled parts or purchased goods, if any, in advance.

[7.9] Control of supplied goods and loaned goods

(1) The Purchaser may supply materials, parts, software and other goods required for manufacturing of products or performance of construction.

(2) When the Supplier receives materials, parts or other goods supplied by the Purchaser, the Supplier shall submit a receipt to the Purchaser, and check the model, quantity, state of appearance, and other pertinent points. If the Supplier finds any abnormality, such as excess or shortage of a quantity or a poor state of appearance, the Supplier shall notify the Purchaser of it immediately and receive instructions of the Purchaser.

(3) The Supplier shall properly identify and store materials and parts supplied by the Purchaser and take measures to prevent damage or deterioration. The Supplier shall not use other materials as substitutes for supplied materials or use supplied materials for other products or purchased goods without approval of the Purchaser.

(4) The Supplier shall handle loaned goods in the same way as specified in (2) and (3).

(5) The Supplier shall treat software and other intellectual property supplied by the Purchaser as confidential to prevent leakage.

[7.10.1] Control of products in stock

(1) The Supplier shall control products in stock, including parts and half-finished products, by using proper methods of identification, rust prevention, and periodic inspections upon and during storage.

(2) The Supplier shall reinsert products that have been in stock for more than one year after manufacture and make sure that they still have good quality and they have not deteriorated, before delivering the products to the Purchaser. The Supplier shall follow separately issued purchase specifications for products with a shelf life.

(3) The Supplier shall determine limited storage periods for parts and materials that chemically change or deteriorate during storage or that have a shelf life, such as electrolytic capacitors, plated parts, rubber parts and adhesives, and shall dispose of or otherwise treat them after expiration of the period.

(4) If multiple parts have similar appearance, model numbers or other characteristics, control them in such a way to avoid mixing them (For example, pay attention to their locations on storage shelves and color coding used for display methods or bags).

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[7.10.2] Packaging, rust prevention, shipping and transportation

(1) The Supplier shall carry out necessary control to ensure that requirements for rust prevention, packaging, shipping and transportation are fully satisfied.

(2) Even if there is no particular specification required by the Purchaser, the Supplier shall carry out rust prevention, packaging, shipping and transportation in such a way that purchased products arrive at the Purchaser in good conditions.

Note) The Purchaser shall determine packaging standards when placing an order for electronic equipment or the like from a company subject to the Subcontracting Law.

[7.11] Measuring instruments and testing devices used for inspection

(1) The Supplier shall prepare and maintain measuring instruments for inspections and testing devices that are required for checking whether purchased products or construction results conform to purchase specifications and other requirements.

(2) The Supplier shall calibrate and inspect these measuring instruments and testing devices at appropriate intervals against measurement standards traceable to national measurement standards.

(3) The Supplier shall check precision of jigs and tools and inspection software before using them as a means of inspection.

(4) If any deficiency is found in a calibration or inspection of measuring instruments, testing devices and jigs and tools, the Supplier shall check whether the deficiency affects purchased products or construction results since the last calibration or inspection, by attempting an inspection or adjustment using the measuring instrument or other device in question to check if any problem occurs in the performance of purchased products or construction results, and shall report the result to the Purchaser and receive instructions from the Purchaser.

(5) If any deficiency is found in a daily inspection or an inspection at start of work of measuring instruments, testing devices, jigs and tools and inspection software, the Supplier shall check whether the deficiency affects purchased products or construction results since the last calibration or inspection, by attempting an inspection or adjustment using the measuring instrument or other device in question to check if any problem occurs in the performance of purchased products or construction results, and shall report the result to the Purchaser and receive instructions from the Purchaser.

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(6) If measuring instruments, testing devices, jigs, and tools contain consumables, control them by, for example, periodically replacing them (e.g. connector (contact part) or contact-type gauges).

(7) Control the measuring instruments, testing devices, jigs, and tools supplied by the Purchaser by following each item above as well.

(8) After adjusting a measuring instrument, testing device, jig, tool, or software for inspection, check that the inspection range (coverage rate) remains the same.

[8.1] Customer satisfaction

The Supplier shall collect or receive information from the Purchaser on how the Purchaser evaluates the Supplier, and shall sincerely review and evaluate the information and establish a mechanism to make use of the information for the Supplier's activities.

[8.2] Achievement of quality objectives

(1) The Supplier shall continually evaluate the degree of achievement of quality objectives that are consistent with a quality policy and carry out periodical audits to ensure that the Supplier is capable of providing products meeting customers' requirements.

(2) If evaluation or audit results indicate that quality objectives have not been achieved yet, the Supplier shall take appropriate corrective actions.

(3) The Supplier shall include vendors as subjects of audits.

[8.3.1] Inspections and tests

First of all, the Supplier shall establish procedures necessary for ensuring that products or construction satisfy purchase specifications and other requirements, and conduct in-process inspections and tests and finished product inspections and tests.

And in the next, the quality control department shall monitor and improve the modes where defects occur.

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<Notes>

For example, when disassembling an assembly at inspection, be careful not to use parts from a different product when reassembling it.

If accessories are included with the product but the number of accessories cannot be checked, check the number before starting the process or take other measures to include the exact number of accessories.

When performing inspection by taking samples randomly from a lot, take care that samples represent the characteristic values of the production lot. In other words, do not mix multiple production lots. This leads to the sampled population not representing the parent population.

[8.3.2] Indication and record of inspection states

(1) Inspection of equipment

The Supplier shall mark and record products to differentiate and identify products inspected from those not inspected and those accepted as good from those rejected as defective.

(2) Inspection of construction

The Supplier shall record and control construction results to differentiate those inspected from those not inspected and those accepted as good from those rejected as defective.

(3) The Supplier shall submit the above-mentioned records for product or construction that has been rejected by inspection and corrected accordingly, at the request of the Purchaser.

[8.4] Treatment of deficient products

(1) The Supplier shall identify deficient products by marking them and indicate details of deficiencies to prevent deficient products from being mixed with good-quality products.

(2) The Supplier shall establish procedures for handling deficient products and nonconforming construction by reworking, repairing, concession without repair, disposal and new production or other means, and treat such

products and construction properly. The Supplier shall also investigate the cause and the scope of influence and take measures to prevent recurrence.

(3) When reworking deficient products prior to inspection, the Supplier shall record the work done and control the changes made by, for example, marking the relevant sections.

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[8.5] Concession

The Supplier shall notify the Purchaser in writing and get the approval of the Purchaser to make a concession that affects the Purchaser's purchase specifications, drawings and other documents.

[8.6] Corrective action

(1) When the Supplier finds any state that may cause a deficiency of semi-finished products in processes, parts or purchased goods or construction, the Supplier shall immediately carry out a review with related departments, determine corrective actions and measures against outflow, and confirm their effects. The Supplier shall also prepare a deficiency report to describe sharing roles about the deficiency, details of the deficiency, the causes of occurrence and outflow, the scope of influence, corrective actions, recurrence prevention measures and effects of measures.

(2) If any deficiency is found by the Purchaser or a customer after a product or construction is delivered to the Purchaser, the Supplier shall carry out a review with related departments and take immediate actions to eliminate the cause and report the progress and results of the actions to the Purchaser. The Supplier shall prepare a correction report to describe sharing roles about the deficiency, details of the deficiency, the causes of occurrence and outflow, the scope of influence, corrective actions, recurrence prevention measures and effects of measures.

(3) The Supplier shall not only determine a cause of a nonconforming event but also determine a true cause of nonconformity. The Supplier shall determine causes arising from characteristic techniques and management techniques, and take recurrence prevention measures, including preventive actions.

[8.7] Feed forward of quality issued at the suppliers

If any deficiency occurs in a product, whether it is for the Purchaser or for other companies, the Supplier shall determine if the same deficiency may occur in products for the Purchaser. If so, the Supplier shall notify the Purchaser and take measures to prevent occurrence.

<Description>

Note 1) *Supplier*

This Quality Control Guidelines document refers to a primary supplier specified in ISO 9001:2008 as a *Supplier*, which is a company that undertakes the following based on orders placed by the Purchaser: supply, manufacturing or part thereof, designing, construction management, construction and/or maintenance of purchased products, or designing, manufacturing, testing, maintenance and other development processes of software.

Note 2) *Vendors*

Those who supply goods to the *Supplier* (detailed in Note 1).

Note 3) Determination of details of recommendations

The term of *Recommendation* used in this Quality Control Guidelines document indicates that details shall be determined at consultations between the Supplier and companies and divisions of Sumitomo Electric Industries Group.

- History of revisions -

Version	Date of revision	Details	Revised by
First edition	2010/10/1	The first edition is established.	Subcommittee for subcontracted and purchased products
Edition A	2014/08/04	<p>Deleted the requirements of JIS Q 9001(2008). Added text to A actions against past problems and other issues) highlighted by bold and underlining.</p> <ul style="list-style-type: none"> - Changed item numbers that did not take into consideration ISO 9001 numbering. - Corrected other phrases. 	Subcommittee for subcontracted and purchased products