



Supplier Requirements

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1. Introduction

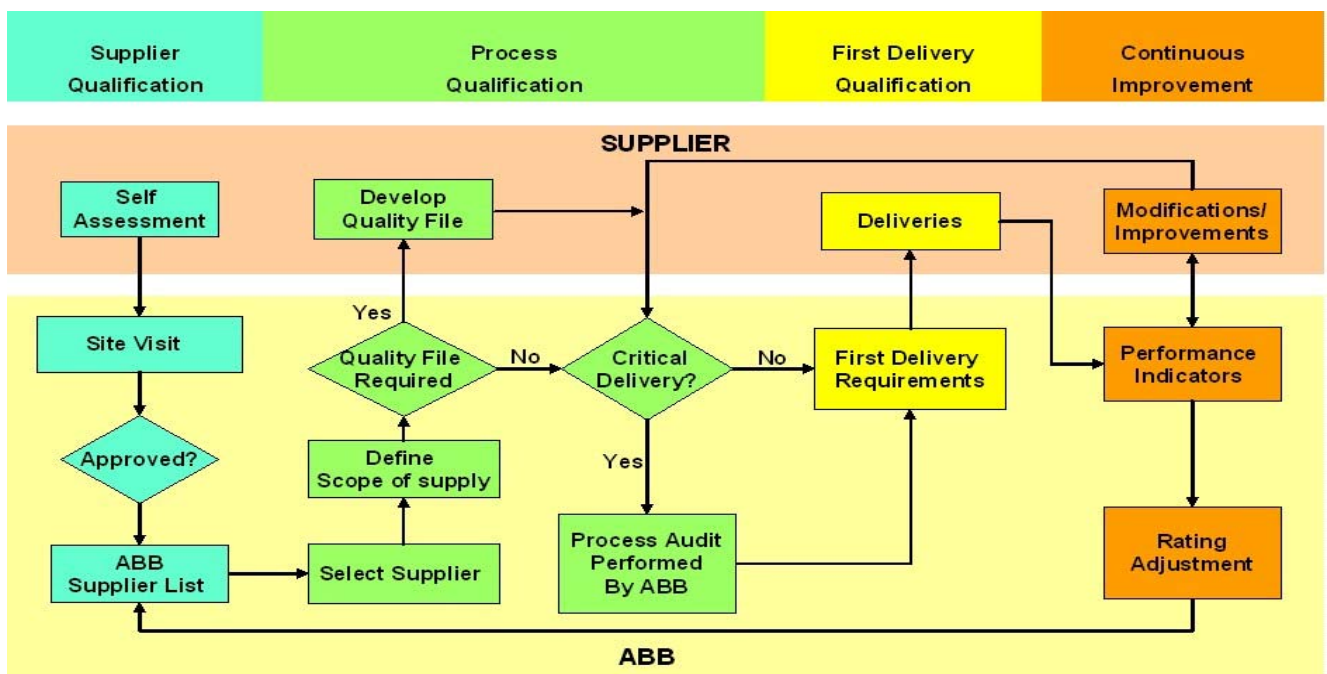
This document describes the process by which a supplier of components, products, systems, and/or services can get qualified to supply ABB.

The process starts with the initial qualification of the supplier, which permits ABB to determine if a new supplier meets the minimum requirements established by ABB and can be added to the ABB Supplier List. The next step covers the qualification of the Supplier's process (manufacturing, designing, sub-contracting) which will be used to supply ABB with a specific component, system, or service.

The qualification of the first delivery is performed next with approval of initial samples and deliveries. Finally the last step of this process covers the measurement and improvement of the Supplier performance.

This process is meant to be a cooperative effort between ABB and its supplier to ensure and maintain good quality and deliveries throughout the supply chain. This is achieved by ABB working with the supplier to develop and maintain a controlled process which addresses ABB requirements, and ensures minimal quality costs for both ABB and the supplier.

2. Supplier Qualification Process



3. Supplier Qualification

The initial step in Supplier Qualification is based on these Supplier Requirements and the Supplier Qualification Questionnaire 9AKK102951, available for download at www.abb.com/supplying to ABB. All Suppliers are required to complete the Supplier Qualification Questionnaire and return it to ABB. This provides us with the basic information about our Suppliers. Based on the Questionnaire responses, the Supplier may be visited by ABB to validate information provided in the Questionnaire. The local ABB unit will review the information and determine if the Supplier will be added to the Supplier List. This qualification is valid for one particular Supplier site.

3.1 Qualification Process Steps

3.1.1 Self Assessment

Suppliers must download the questionnaire and respond to all questions. Include:

- Documentation to support their self-assessment
- a comment explaining a 'partial' or 'no' response
- current actions being taken to address weak areas (enter this on the Summary Sheet)

Once completed, the questionnaire and all supporting documentation are to be sent to ABB.

3.1.2 Review and Site Visit

ABB will review the questionnaire, supporting documents, and action plans sent by the supplier. ABB will decide whether it is necessary to perform a counter-assessment at the supplier site or to directly approve the supplier based on information provided. ABB reserves the right to adjust the score of individual questions based on its evaluation of the information provided by the supplier.

3.1.3 Supplier Qualification Status

Suppliers can determine their potential qualification status by looking at the Summary Sheet of the Supplier Qualification Questionnaire. According to the qualification level achieved you can see below the actions that need to be taken.

Rejected: Your score is under 20%: your company is too far from ABB requirements. If and when you have implemented corrective actions which permit you to reach a score of more than 20%, you can get in touch with ABB again.

Under Development: Your score is between 20% and 50%: you can be part of the ABB Supplier List, provided your Quality, Costs and Delivery (QCD) performance is best in class and you have a plan to reach 50% within one year.

Qualified: Your score is above 50%: you can be part of the ABB Supplier List, provided your Quality, Costs and Delivery (QCD) performance is best in class. We will ask you to implement continuous improvement plans to increase your score year over year, and communicate to us the results on a regular basis.

The decision to include a supplier on the ABB supplier list will be based on the combination of the score and the action plan to address weak areas.

3.2 Key Focus Areas

3.2.1 Quality Management

Suppliers must agree to introduce and maintain a quality management system according to ISO 9001:2000, or equivalent third party certification recognized by ABB, with the obligation to defect free delivery and to continuously improve their performance. Certified suppliers must send a copy of their quality system certifications to ABB. Suppliers who are not certified shall present to ABB their plan for management of Quality and may be subject to a Quality Management System audit by ABB.

3.2.2 Environmental Management

ABB's environmental management principles also apply to its suppliers (link to [ABB Sustainability Policies](#)). As a general objective, ABB wants to do business with suppliers who have implemented environmental management systems complying with the requirements of ISO 14001. Suppliers not yet having implemented ISO 14001 must at least have implemented an environmental policy and ensured that all operations and processes comply with relevant standards, legislation and international conventions. Suppliers must have identified and documented the significant environmental aspects of their manufacturing or supply processes, covering their scope of supply to ABB. Suppliers must also have implemented processes to ensure continuous improvement of their environmental performance, and must adhere to ABB's list of prohibited and restricted materials and substances when fulfilling their supply contracts.

3.2.3 Social Responsibility

ABB's management principles for social responsibility also apply to its suppliers. Suppliers must ensure that all operations and processes comply with relevant standards, legislation and international conventions. A senior manager shall be responsible for ensuring that systems and procedures for social responsibility are in place.

Suppliers must support and respect the protection of internationally proclaimed human rights and ensure equality of opportunity. Suppliers must also comply with applicable laws and industry standards on working hours and offer adequate wages to their employees. Suppliers must not employ children or support the use of child labor, make use of forced labor or make use of harassment or disciplinary practices nor discriminate. Suppliers must have appropriate procedures to evaluate and select sub-suppliers on their ability to meet these principles and to maintain reasonable evidence that these principles are continuing to be met.

3.2.4 Health and Safety Management

ABB's management principles for occupational health and safety also apply to its suppliers. Suppliers must provide and ensure a safe and healthy working environment for their own employees and sub-suppliers. Suppliers should implement a health and safety policy and establish objectives to meet this policy. As a minimum, suppliers must ensure that their operations and processes comply with relevant standards and legislation. Suppliers must also identify the health and safety risks in the scope of their supply to ABB and implement controls to eliminate or reduce these risks. ABB favors suppliers who have implemented OHSAS 18001 or equivalent systems for occupational health and safety management.

4. Process Qualification

In this section we will look at the process (manufacturing, designing, sub-contracting), which will be used to supply ABB with a specific component, system, or service. We are interested in making sure that the process used will meet all ABB Requirements and that it has all the necessary elements and checkpoints to ensure it remains under control. A controlled process is the key to good quality and deliveries. Some of the key tools in this section are the "Quality File" and the "Process Control Plan".

4.1 Process Qualification Steps

4.1.1 Select Supplier from ABB Supplier list

ABB will select a supplier from the ABB Supplier List, based on its technical ability to supply a specific component, system, or service, and to meet Quality, Costs and Delivery criteria.

4.1.2 Define Scope of Supply

ABB unit determine the Scope of Supply to be sourced. Based on the risk associated with the supply, ABB will determine the level of control and follow-up required by ABB and will decide on the requirements for a Quality file and/or a Process Audit. (i.e. The Quality File is not required for Suppliers of standard, catalog items or products.)

4.1.3 Quality File

Suppliers will create a Quality File to maintain all the relevant information related to the scope of supply. The quality file should include:

4.1.3.1 Basic Documents

Minimum required documents to be contained in the Quality File.

- *Drawings and specifications* (The supplier must maintain the latest revisions of the ABB drawings and specifications as part of the quality file)
- *Purchase Order and Purchase order changes*

4.1.3.2 Additional Documents

The quality file may also include additional documents based on the complexity and criticality of the scope of supply to ABB. As these documents are created, they should be added to the Quality File. Some of these documents are described below: (*Product Design documents are only required if the Supplier has responsibility for the design of the Component Product*).

- *Products Design Development Plan:* Suppliers shall document plans that identify the responsibility for each design and development activity, as well as a precise planning, which matches ABB project needs. The plans shall describe or reference the design and development activities and shall be updated immediately as the design evolves.
- *Product Design Review:* Design output shall be documented and expressed in terms of requirements, calculations, and analysis. The design review shall verify that all requirements have been met by the design output.
- *Product Design Change:* Suppliers shall establish and maintain procedures for the identification, documentation, and appropriate review and approval of all changes and modifications to a design. For ABB specific component, systems, or services, ABB must approve all changes prior to implementation.
- *Approved Sub-Supplier List:* Suppliers will establish the list of sub-suppliers that have been approved using their own internal supplier qualification process.
- *Sub-Supplier Initial Sample Approval:* Suppliers will maintain approved samples of key components, products, or systems manufactured by their sub-suppliers, which will be used in the supply of the ABB component, system, or service in question. Initial Samples reports shall be kept by the supplier at ABB's disposal.
- *Process Control Plan:* Suppliers shall map out the process to be used to supply the component, system, or service to ABB. For each step in this process (or component used in that step), the plan should include: component/process step number, operation description, production equipment, characteristics to be controlled, methodology for measurement including tolerances, measurement equipment, size and frequency of measurement sample, corrective action procedure. You may use the ABB Control Plan 9AKK102950 available on www.abb.com/Supplying to ABB or an equivalent document, as long as it includes all elements listed above.
- *Gauge Capability Study:* Suppliers shall control, calibrate, and maintain inspection, measuring, and test equipment, whether owned by the Supplier, on loan, or provided by ABB, to demonstrate the conformance of the product to the specified requirements. Equipment shall be used in a manner, which ensures that the measurement capability is known and is consistent with the required measurement capability.
- *Process/Product Capability Study:* Suppliers will determine if they are capable of meeting the material, component, system, or service requirements as provided in the ABB contract and that the proposed process for creating the component, system, or service is capable of meeting all requirements.
- *Preventive Maintenance Plan:* Suppliers will keep their preventive maintenance plan for all equipment involved in the creation of the component, system, or service in question, at ABB's disposal.
- *Process Failure Mode Effects Analysis:* Suppliers will utilize the FMEA tool to analyse the process used to fulfil the scope of supply and determine potential failure modes. These failure modes will be reviewed for adequate controls and modifications to the Process Control Plan may be necessary as a result of the analysis.

4.1.4 Process Audit

For critical components, products, systems, or services, ABB will perform a process audit at the supplier site according to ABB Process Audit Questionnaire 9AKK102952, available on www.abb.com/Supplying to ABB for download. The process audit is meant to evaluate the process described in the Process Control Plan and observe its effective implementation and capability to deliver good quality and delivery of the scope of supply.

This audit will be performed prior to initial supply. ABB may perform Process Audits on a regular basis to ensure there is no deviation over time. Process audits may also be performed by ABB in case of recurring non-conformances, or any other reason at ABB discretion.

Suppliers commit to give full access to their processes, documents and personnel during the Process Audits.

A process is considered as qualified for similar material, components, products or systems produced according the same process, at the same supplier site.

5. First Delivery Qualification

5.1 First Delivery Plan

Supplier will develop a plan to monitor the initial delivery of components, products, systems or services to ensure that the manufacturing/delivery process is generating the quality level expected by ABB. The plan may involve submittal of initial samples or demonstration of services by the supplier.

Initial samples, if required, must be manufactured with the final means and be representative of the normal production components and/or systems. They must be dispatched on time for the attention of ABB Supply Chain Management department. A specific label 'Initial Samples' with at least the following information: quantity, number, and index of the drawing, will be provided by the Supplier.

ABB will use its own means to carry out the checking of the measurements presented by the Supplier and will check of the scope of supply under practical conditions of use. ABB will issue the results to Suppliers.

The plan should include necessary actions to detect and contain any non-conformity. This containment plan should be submitted and approved by ABB.

5.2 Deliveries

Once approved, Supplier can deliver the scope of supply to ABB.

6. Continuous Improvement

Once deliveries of the component, system, or service have started, ABB will monitor the Supplier's performance to establish a trend of Continuous Improvement. Quality and On-Time Delivery are the minimum metrics which will be tracked for Supplier performance. Additional performance measures may be required by certain ABB units.

Resolution of non-conformances in the supply to ABB will be addressed in a manner that will best support ABB's requirements. Expenses associated with supply non-conformances will be the responsibility of the Supplier.

6.1 Performance Indicators

ABB will monitor supplier's performance and report it on a regular basis.

Supplier Performance Indicators are as follows:

- **Product Quality:** % defect free deliveries received
- **On-time delivery:** % of all shipped received complete and on time, based on agreed Incoterms

Suppliers are expected to work with ABB to improve performance and/or process capability where needed. ABB may modify the level of control exercised based on the Suppliers on-going performance. In cases of repeated poor performance or failure to improve, suppliers will be removed from the ABB Supplier List.

6.2 Containment of Non-conforming Supply

In the event a non-conforming material, component, system, or service is detected, ABB will determine the best method of securing conforming supply to meet our production requirements:

- ABB to return the entire lot of non-conforming material, component or systems to suppliers
- Suppliers to sort/rework/repair the non-conformance at ABB site
- ABB to identify an external resource (certified by ABB Quality Department) to perform the sort/rework/repair

- ABB personnel to perform sort/rework/repair

6.2.1 Cost Recovery

Suppliers shall assume the costs incurred by ABB as a result of defective supplies, services or product liability issues.

Suppliers must have liability and third party insurance policy in amounts which are agreeable to ABB.

6.3 Modification/Improvement Process

Any change to the original product or process design must be approved by ABB prior to implementation. A Request for Change needs to be submitted to ABB and approved prior to implementing the change. The supplier shall keep records of all requests and corresponding ABB approvals.

For all modifications/improvements submitted, ABB will determine whether a new First Delivery Plan is necessary.

In particular, an Initial Sample submission will be requested in the following cases:

- New product
- New tooling
- Change in supplier's manufacturing unit

7. Revision Control

Rev A – Revised process flow to improve universal application to all types of suppliers, revised Sustainability requirements for consistency, clarified Quality File document requirements. PB 15/01/2007

Rev B – Reworded document to clarify requirements. LL23/12/2008