



SUPPLIER

QUALITY
&
ENVIRONMENTAL

GUIDELINE

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Introduction

Unibolt use products from suppliers in the manufacture of our products. Consequently, the defect-free quality and reliability of these products has a decisive effect on Unibolt products.

Both the quality potential of suppliers and the quality of the products they supply are therefore determining factors in the choice of suppliers.

Suppliers are responsible for the quality of products they supply.

It is Unibolt environmental policy, that suppliers with a formal documented environmental system will be preferred.

Suppliers are responsible for compliance with the lasted version of Unibolt's "Supplier Quality & Environmental Guideline", see www.unibolt.dk/upload/38.pdf.

1. Quality Management System

The supply of defect-free products can be assured by adopting an effective quality management system. This Quality Guideline for Suppliers has been designed to contribute to such a system. The characteristics of this guideline are:

- consistent application of preventive quality assurance methods.
- fully documented quality assurance records.
- full responsibility of suppliers for the quality of the products supplied.

These characteristics are to be achieved and presented to Unibolt in the form of a fixed written and certified QM-System using at least the ISO 9001:2000 standard.

In view of the considerable importance of quality, Unibolt will, in its role as a co-operative partner, gather information about the (as yet uncertified) supplier's QM-System.

This will take the form of the suppliers self-assessment of its quality system and be followed later, where required, by means of a system audit.

2. Assurance of quality capability before supply commences.

Assurance of quality capability before supply commences implies the supplier carrying out the following procedures before delivering the first series of products.

2.1 Advanced Quality Planning (AQP)

AQP should be carried out by suppliers at their own responsibility and after consultation with the quality assurance department of Unibolt, in the following situations:

- In the development of new processes and products
- Before carrying out changes in processes and products
- In process and product procedures following quality rejections

In Unibolt terms AQP means systematic processing of the following planning elements:

2.1.1 Process flowchart / productionsheet

The flowchart clarifies the relationship between individual production steps and the checkpoints. It provides important information for the application of quality assurance methods.

2.1.2 Feasibility analysis

Feasibility analysis is prescribed in the planning of new products and in product and process changes. Production compliance with technological demands must be demonstrated before Unibolt enters into obligations for tools or equipment.

2.1.3 Failure Mode and Effects Analysis (FMEA)

FMEA assists in avoiding complaints and errors by applying a structural analysis to the likelihood of defects. Process FMEA's have to be established. They are prescribed for all new or altered products and processes. These FMEA's are "living blueprints" and must for this reason be kept up-to-date for the total life of the product or product group in relation to changes in the processes or change of products at all times.

2.1.4 Control plans

Control plans are developed by suppliers for all important process parameters and process and product characteristics. The most important elements of a control plan are:

- a clear identification and short description of each stage in the process,
- the process parameters and the product characteristics for the corresponding process stage,
- the product-related classification of the process stage,
- process monitoring methods: these include evaluation methods, sample sizes and the frequency of controls.
- The methods of analysis or special statistical methods for process control,
- measures to be taken when processes get out of control.

The control plans with the specified content are to be kept and must, on request, accompany the initial sample report.

2.1.5 Planning of gauges / test equipment

The choice of gauges and test equipment is a decisive element in AQP. The supplier shall ensure that the equipment has the required level of accuracy. Regular examination of measuring system variation must be carried out and documented for all measurement equipment.

2.1.6 Planning packaging

The choice of packaging can have considerable influence on the quality of the products and is to be included in assessment of production feasibility. With due consideration of the form of transport and routing, the suppliers shall choose a type of packaging that ensures the total product consignment will reach its destination undamaged and not mixed.

If Unibolt-containers are used, the supplier must assure, that the container is totally empty before back-fill. The supplier must clean-up oil stains on the bottom, - if any.

2.2 Initial samples

Initial samples must always be taken before the first supply series in the following cases:

- when a new product is ordered for the first time (noted specially in the order document),
- following a change in product,
- after a production stop of more than one year,
- in the case of changed production technology,
- in the case of production relocation.

The initial sample test report should accompany the samples (50 parts) ordered from the serial production. All dimensions, characteristics and tests to be carried out which are specified in the documentation must appear in the test report. If a supplier is not able to carry out particular tests with his own equipment, he remains responsible for the quality. In such cases, an appropriate site must be found and the tests must be carried out at his own cost. Each initial sample must be marked by the supplier so that it can be clearly identified. The set quantity of initial samples must be sent separately from other deliveries. The word "initial sample" must be indicated on the delivery document. Deliveries not appropriately documented will be returned.

Clearance for a series will be given when Unibolt has confirmed that the parts have been produced following the specifications. Where conditions are attached to the clearance, the supplier must ensure that the defects mentioned do not arise in serial supply and that only defect-free parts are supplied to Unibolt. Deviations from Unibolt- specifications, not detected in the initial sample, also

give Unibolt the right to reject these at a later date. Serial supply will not be accepted without a final written clearance from Unibolt.

2.3 Procurement from sub-suppliers

The products from sub-suppliers are raw materials, purchased parts and services which are acquired for Unibolt products from third parties. The supplier is responsible for:

- the communication of information on the intended use and the corresponding drawings and technical specifications to sub-suppliers,
- ensuring that the sub-suppliers has an appropriate QM-System,
- ensuring that control plans are available and in use at the sub-suppliers,
- ensuring that the parts and the services supplied by a sub-supplier match the current specification,
- introducing procedures to stop the supply of faulty products from sub-suppliers and for the availability of the appropriate records.

The suppliers must ensure that products from his sub-suppliers meet the required quality standard. This includes the initial sampling and clearance procedure, incoming inspection, supplier assessments and inspection visits. This data is to be documented in the appropriate fashion and provide on request to Unibolt. The supplier is responsible for faulty parts from sub-suppliers and any costs that arise therefrom. Each change of sub-supplier after the clearance of the first sample requires resubmission of an initial sample and information about new sub-suppliers.

3. The assurance of quality during the series

3.1 Tests

Quality tests are imperative in order to ensure that the products to be delivered to Unibolt meet the agreed quality requirements. These tests are subdivided as follows:

- initial sample tests and releases,
- incoming inspection,
- production tests and systematic recording of quality data (e.g. SPC, process parameters)
- final inspection,
- product audits.

The scope and size of the tests must be determined in relation to the degree of process capability, the significance of characteristics concerned, and the potential effects of failure. The results of quality monitoring, quality tests and any measures taken must be documented in writing. Records must be kept for a minimum of 10 years, at which time the data must be still be legible and applicable. The supplier shall permit Unibolt to see these records on request and will provide them for inspection when required.

Final inspection : The defect-free status of the product to be supplied to Unibolt shall be ensured by means of an appropriate final test. This test following the final stage of production may be a 100% test or, with some processes, a random test. Batches with defective units in the random sample provided to Unibolt will not be accepted. In the case of process breakdown and deviation from quality, the defective elements must be removed and their cause must be analysed. Improvements must be made and their efficacy checked. Under no circumstances may defective elements be supplied to Unibolt.

Special releases : Where, in exceptional cases, products not meeting the specifications have to be supplied, a special written release must be obtained for the delivery from the Unibolt quality assurance department.

3.2 Reception of goods

3.2.1 The marking of goods

To ensure the traceability of the batch supplied back to the raw material, each packaging unit must have a durable and visible mark identifying the batch. Each delivery shall be accompanied by a

delivery document. This document shall include the dates given in the order provisions and in the order.

3.2.2 Special conditions for the receipt of goods

Unless otherwise specified by Unibolt, the supplier is responsible for the correct choice of packaging in order to ensure product quality and safe handling of the load unit until it reaches its destination.

3.3 Procedure for defective units

Where defective products are delivered, the supplier shall be informed of the faults by means of a rejection report. In urgent cases, Unibolt will, after consultation with the supplier, itself rework the product or have this done by a third party. The ensuing costs shall be borne by the supplier. If as a consequence of a skip-lot check of the incoming inspection, defects are only detected in the production, the increased costs will also be for the account of the supplier.

In the case of claims, a statement with details of the cause of the error, measures initiated to prevent it including details of measures to exclude these errors arising in future and a confirmation that the successive deliveries are free of defects must be given in writing to Unibolt within the time specified in the rejection report. Rejections and blocked shipments do not release the supplier from his obligation to deliver.

3.4 Delivery times and deadlines, delays

Agreed times and deadlines are binding. Meeting the delivery time or deadline shall be determined by the time of reception of the goods at Unibolt.

4. Parts requiring documentation

In the case of parts requiring documentation, the supplier is required to document quality assurance measures and their results without omissions. The registration requirement for all documents (specifications, drawings, production and working plans, test plans and indications, notes etc.) should be as the ISO/TS 16949 regulations. Documents must be retained for a minimum of 10 years after delivery of the last parts. The dates must still be legible and applicable.

5. Environmental requirements

Environmental aspects and impacts must be known and documented. Unibolt wish to encourage suppliers to establish:

- Environmental policy and environmental goals
- Monitoring of environmental performance and internal environmental audits
- Emergency plans dealing environmental accidents
- Reduction of waste and increased efficiency
- Environmental training and information to the employees.

6. Reference to additional documents (sources)

- ISO 9001:2000.
- ISO/TS16949.
- QS 9000 series (incl. Production Part Approval Process).
- VDA-Schrift 2 (incl. Sicherung der Qualität von Lieferungen).
- ISO 14001.