

Quality Management Guideline for Suppliers

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1 Introduction

The quality of our products mainly depends on the quality of purchased parts and components. Thus our aim is only to purchase quality products with an above-average price performance ratio.

In order to achieve this aim, it is necessary that our suppliers have an effective quality management system. This Guideline describes the demands Vorwerk Dichtungssysteme GmbH & Co. KG places on this system. Over and above that there is the possibility of reaching supplier-specific agreements.

The Quality Management Guideline is an integral part of every purchase contract for products which are subsequently machined or processed on our premises or are marketed through us.

2 Quality Management System

Our quality management system complies with the requirements of DIN EN ISO 9001:2000 and the additional requirements of ISO TS 16949. Therefore, we expect our suppliers at least to be certified according to DIN EN ISO 9000:2000. Furthermore activities should be going on to develop the quality management system according to the additional requirements of ISO TS 16949:2002. We reserve ourselves the right to check this system by audits.

In addition the requirements of QS 9000 and the VDA are also taken into consideration.

3 Advanced Quality Planning

3.1 Feasibility Study

In the case of products which are neither standard nor catalogue articles, we expect our suppliers to check, prior to conclusion of contract, whether the product required can be manufactured and delivered in the quality and quantity required and according to deadline.

It is the task of the supplier to discuss and, if necessary, obtain additional information from the Vorwerk Dichtungssysteme Purchasing Department in the event of any unclear requests. This also includes the definition of critical and significant product features.

If corrections to specifications are required due to the feasibility study, then the Purchasing Department is also to be notified of this.

3.2 Quality Planning

The quality of products is substantially defined by their development. Thus it is necessary for the supplier to carry out quality-assuring action in the development stage. This action is to contain the elements described below.

3.2.1 Process- and Design-FMEA

The Failure Mode and Effects Analysis (FMEA) is an important instrument for preventing defects, since the causes of potential defects are recognised at an early stage due to the methodical procedure and suitable action can be taken.

A design FMEA is required for all products for which the supplier bears the design responsibility.

Process FMEAs are to be carried out for all new and modified production processes.

3.2.2 Inspection Planning

The inspection planning is to specify:

- Which characteristic
- How often

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- To what extent
- By whom
- In which process step
- Using which test equipment and
- How

are to be tested and where the test result is to be documented. In doing so, quantitative testing is to be given preference over qualitative testing.

The results of the test planning are to be summarised in a control plan.

3.2.3 Planning of Measuring and Monitoring Devices

The type, quantity and accuracy of the measuring and monitoring devices required is to be specified in measuring and monitoring devices planning.

Measurement system analysis are to be carried out for the test equipment selected, in order to ensure that a process control is possible on the basis of the measurement data.

The supplier is to have a test equipment monitoring system.

3.2.4 Process- and Production-Equipment Planning

Production processes and production equipment are to be planned and developed so that with sufficient capacity, the characteristics required can be produced within the tolerances.

The results of the process planning are to be represented in a process flowchart which provides the basis for the Process-FMEA and inspection planning.

The capability of production equipment and processes is to be demonstrated. The minimum requirement for the preliminary process capability is $Ppk \geq 1.67$ and the continuous process capability is ≥ 1.33 .

A minimum of 125 measurement results must be available for the calculation of the preliminary process capability, these measurement results are to originate from a production run of at least 300 parts. The calculation of the continuous process capability is only permissible after at least 20 production days.

3.2.5 Packaging Planning

The packaging is to be stipulated so that damage during transport and storage is avoided. In doing so, environmental aspects are to be taken into consideration together with favourable handling (filling quantity, favourable emptying, transportability and stackability).

If Vorwerk Dichtungssysteme does not set specific requirements for the packaging, then it is the supplier's task to arrange this with the Vorwerk Dichtungssysteme Purchasing Department prior to series delivery.

3.3 Initial Samples

Initial samples are samples (products, materials) which have been produced with series facilities, under series conditions and with the staff intended for series production. They serve the purpose of verifying, prior to series delivery, that quality requirements are complied with.

Initial samples are required with number and date in the case of new products or products modified especially for Vorwerk Dichtungssysteme. In this process, all the quality characteristics agreed in the specifications are to be sampled.

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The initial sample process is to be carried out according to the Production Part Approval Process (PPAP) of QS 9000 or VDA 2, unless any other written agreement has been made. Sampling according to the PPAP guideline is to be carried out in accordance with Submission Level 3 or VDA 2 Submission Level 3, unless any other stipulation has been made. The documents are to be supplemented by the corresponding material entries in IMDS.

The regulations concerning when a sampling process is to be carried out can be taken from the PPAP guideline of QS 9000.

3.4 Hazardous Substances

The corresponding safety data sheets are to be sent, without special request, to the Purchasing Department of Vorwerk Dichtungssysteme prior to the first delivery of hazardous substances.

3.5 Preventative Maintenance

The supplier is to demonstrate a system of preventative maintenance which is to include at least all bottleneck machinery.

3.6 Training

The supplier's employees are to be qualified for the tasks to be fulfilled. The supplier is to ensure this with appropriate, internal or external training courses. These training courses must be verifiable.

4 Assurance of Quality during Series-Production

4.1 Statistical Process Control

The Statistical Process Control (SPC) serves as a process-proximal control instrument to recognise process deviations at an early stage and to intervene correctively in the process before defective products occur.

The supplier must verify using control charts that statistical process controlling is applied to all critical or significant, controllable characteristics. Vorwerk Dichtungssysteme is entitled to inspect these records at any time on request.

If characteristics cannot be checked directly, then SPC is to be applied to the process parameters which affect this characteristic. This possibility is of course also available for testable product characteristics and is of preference in the case of clear correlation.

4.2 Acceptance Inspection

The supplier is to carry out suitable quantitative and qualitative acceptance inspection for processes which are not SPC-capable and is to document this in fault recording charts or test reports. The conditions of the acceptance inspection are to be agreed with the Vorwerk Dichtungssysteme Quality Assurance Department.

4.3 100% Inspection

100% inspection is to be carried out regarding the specified characteristics in the case of non-capable processes ($Cpk < 1.33$).

4.4 Test Certificates

We reserve the right in principle to demand a test certificate according to DIN EN 10204 "3.1.B" per delivery in which the critical and significant product characteristics are to be confirmed. This certificate is to include the nominal values, tolerances and the actual values determined. The product characteristics to be confirmed and the number of measurement values are to be agreed with the Vorwerk Dichtungssysteme Purchasing Department.

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4.5 Product Identification

The identification of the pack units is to be carried out with an Odette label. In doing so, the demands of detailed traceability are to be considered.

4.6 Contingency Strategy

The supplier's system is to be equipped so that a contingency strategy can be run if a bottleneck in delivery should occur. The contingency plan is to be submitted to the Vorwerk Dichtungssysteme Purchasing Department.

5 Corrective Measures

Vorwerk Dichtungssysteme expects its suppliers to pursue targets for the important processes in production and administration and that action plans for the achievement of these targets are available. In the case of complaints, we expect the first written representation of immediate measures within 24 hours and a concluding statement on the cause of defect and action taken within 10 working days. The documentation is to be required on the 8D-Report generated by Vorwerk Dichtungssysteme in case of an rejection.

6 Legal Safety and Environment Regulations

A process is to be applied which ensures the conformity with all applicable legal safety and environment regulations. This also includes the requirements of the recycling laws. Verification is to be provided with appropriate certificates or conformity declarations.

7 Documents and Records

The retention of documents and records is to be regulated in writing.

Vorwerk Dichtungssysteme reserves the right to inspect all documents and records arising in connection with products delivered or to be delivered to Vorwerk Dichtungssysteme.

8 Vendor Rating

All main suppliers are evaluated at least once a year according to the following criteria:

Quality

- Incoming inspection
- Complaints
- Audit

Delivery

- Adherence to deadlines
- Adherence to quantities
- Dispatch regulations

Price

- Price level
- Price behaviour

Service

- Flexibility
- Communication

Due to the evaluation result the classification is carried out in the following categories:

Overall degree of conformity in %	Grading of the process	Description of the grading
90 to 100	full compliance	A
80 to less than 90	predominant compliance	AB
60 to less than 80	partial compliance	B
less than 60	no compliance	C

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The evaluation results are notified to the supplier in writing to indicate any potential for improvement. Suppliers evaluated with a total evaluation < 80% or in a part criteria < 80% are to submit a written action plan to the Vorwerk Dichtungssysteme Purchasing Department within four weeks. Vorwerk Dichtungssysteme reserves the right to check the implementation and effectiveness of this action using audits.

9 Additionally Applicable Documents

- DIN EN ISO 9000:2000
 - ISO TS 16949:2002
 - VDA 6.1 and the appertaining VDA volumes
 - QS 9000 and the appertaining brochures
- (The respective last issue is valid)

10 List of Amendments

Date	Index	Description of amendment
2005-01-27	B	• Chapter 2 "Quality Management System" concretized