

# QRL 06.002

## GUIDELINE FOR QUALITY ASSURANCE OF SUPPLIERS IN THE ELBE GROUP

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## Foreword

Our standing and position on the global market are largely determined by the quality of our products. The quality of your deliveries has a direct impact on our products. As our partners, our suppliers are responsible for the quality of their products.

This guideline is intended to contribute to the implementation of a common quality strategy based on the currently valid standards and regulations of the automotive and commercial vehicle industry in order to ensure smooth processes between our suppliers and the ELBE Group and to minimize costs. However, it does not constitute a restriction of these regulations.

A comprehensive philosophy of continuous improvement (CIP) must be introduced throughout the entire supplier organization. This applies in particular to:

- Quality
- Cost
- Products and processes
- Deadlines

Another key factor contributing to delivery reliability is effective energy and environmental management, which ensures compliance with the relevant national environmental regulations and continuously and efficiently improves the supplier's environmental performance.

Due to the different quality management systems between the Elbe and Elso locations, different requirements may be passed on to suppliers in some cases.

To simplify this quality guideline, the following applies to distinguish between the different requirements:

### **Elbe plants**

- Elbe Bietigheim-Bisingen
- Elbe Italia Abbadia (Northern Italy)
- Elbe Italia Grumento Nova (Southern Italy)
- Elbe do Brazil
- Elbe USA

### **Elso Works**

- Elso Hofheim in Lower Franconia
- Elso Hungary

### **ELBE Group**

- All Elbe & Elso plants

Management

Gundram Elbe

# 1. General requirements

## 1.1 Scope

This guideline on quality assurance for deliveries to the ELBE Group applies to all deliveries of production materials.

It also applies to services that have an impact on the fulfillment of customer requirements. These would include, for example, mechanical work carried out off-site, heat treatment processes, coating processes, sorting, reworking, washing, and calibration services.

It applies to all suppliers in the supply chain who supply products to the ELBE Group, as well as to suppliers specified by external customers (set suppliers).

The ELBE Group requires that the following requirements be passed on to subcontractors (suppliers of suppliers).

The ELBE Group provides this document in German and English. Only the German version of this quality guideline is a controlled document and is binding. The translations into other languages provided by the ELBE Group are for information purposes only.

## 1.2 Quality management

A prerequisite for a supplier relationship with the ELBE Group is an effective quality management system in accordance with the currently valid DIN ISO 9001. This represents the minimum requirement for delivery to the ELBE Group.

The effectiveness of the QM system is reflected in:

- Continuous and verifiable improvement of processes, procedures, and products
- Delivery quality
- Delivery reliability
- Effectiveness and speed of implementation of corrective measures
- Communication at all levels
- Content-related and timely processing of new and change projects

This is intended to achieve the common goal of "zero defects."

Unsolicited information must be forwarded to the ELBE Group if the certificate

- has been revoked,
- has expired without successful recertification, or
- has been temporarily suspended.

If no recertification is planned, the supplier must send this information to the ELBE Group at least 6 months before the expiry date.

After successful recertification, the new certificates must be sent to the responsible supplier manager/developer without being specifically requested.

Certifications are only valid if issued by accredited certification bodies.

### *ELSO-specific requirement:*

Suppliers of automotive parts must have valid certification in accordance with the current IATF 16949. If suppliers are not certified according to this quality standard, a corresponding plan for achieving this standard must be developed and submitted to ELSO. The responsible supplier manager/developer will support you in achieving this goal.

### 1.3 Audits

The ELBE Group shall be granted unrestricted access during normal business hours after prior notification and consultation. The responsible representative of the ELBE Group or a third-party representative may audit the following:

- Quality management systems (ISO 9001, IATF 16949)
- Energy management systems
- Environmental management systems
- Product audits
- Process audits according to VDA 6.3 and the ELBE Group's process audit questionnaire for suppliers

### 1.4 Business language

The business language is German. Alternative languages are English and the national language of the ordering plant, if both contracting parties are familiar with it.

The ELBE Group requires suppliers to write product- and process-related documents in English. In addition, these may be written in the native language of the ELBE Group recipient plant, if both parties are familiar with it.

### 1.5 Quality objectives

The supplier defines internal and external quality objectives to measure and evaluate the quality achieved. In this context, the following minimum requirements apply:

- Determination of internal and external error costs
- Development of the quality management system
- Determination of customer satisfaction

The data determined must be analyzed. Appropriate improvement measures must be initiated and documented on this basis.

### 1.6 Compliance with regulatory and legal requirements

Suppliers must comply with all applicable regulatory and legal requirements and pass these on to their suppliers throughout the supply chain.

The ELBE Group requires its suppliers and subcontractors to adopt and fulfill the minimum legal requirements for corporate ethics, working conditions, human rights, and environmental protection.

Upon request, suppliers must provide evidence of compliance with these requirements.

## 1.7 Environment

Effective environmental management, which ensures compliance with the applicable environmental regulations and continuously and efficiently improves the supplier's environmental conditions, is an essential contribution to delivery reliability. The ELBE Group is committed to protecting the environment and has implemented management systems in accordance with DIN EN ISO 14001 and DIN EN ISO 50001.

We therefore also expect our suppliers to take the initiative to implement an equivalent environmental management system.

Suppliers operating foundries, electroplating and painting shops, as well as companies performing any type of surface treatment using chemicals, dyes, resins, leather, fats, and oils must provide proof of certification according to ISO 14001 or an equivalent system. If this is not available, a corresponding plan for achieving the standard must be drawn up and submitted to the ELBE Group.

## 1.8 (Special) features

Requirements for products and services are described by the ELBE Group in technical drawings, specifications, and the relevant purchasing documents.

All characteristics must be complied with. There are characteristics with higher risks that require special attention. Deviations from these characteristics can impair product safety, service life, installability, function, and quality, and may also violate official or legal regulations. (Special) features are specified by Elbe and documented on the drawing and/or in the specifications. These must also be determined from the supplier's risk analysis (e.g., P-FMEA).

The consistency of (special) characteristics must always be ensured in the following documents:

- Drawings
- FMEA
- Production control plan
- Test plan / test instructions

### 1.8.1 Marking of (special) characteristics

- **Diamond** – **Product feature** or **production process parameter** with an impact on:
  - Safety or compliance with regulatory requirements
  - The fit
  - The function
  - The performance or further processing of the product



Compliance with these special characteristics must be ensured by means of a process capability certificate or a 100% inspection.

- **Zeppelin** – Feature applicable to suppliers of forged parts. **Product features** with an impact on:
  - The fit
  - The function
  - Further processing of the product



Compliance with these characteristics must be ensured by regular checks during production. These are control measures that must be documented.

- **Triangle** – Safety components: **Product characteristics** or **process parameters** with documentation requirements in accordance with legal specifications, customer requirements, and internal risk assessment



Compliance with these special characteristics must be ensured by means of a process capability test or a 100% inspection.

### 1.9 Subcontractor management

Subcontractors have a significant influence on the quality of the end product. A documented supplier management system is therefore also required for these suppliers.

Suppliers are responsible for the development of their suppliers (subcontractors). Suppliers must have the necessary procedures, competencies, and capacities to manage their suppliers (subcontractors) and monitor their performance. This also applies to component suppliers. All requirements of this guideline must be complied with throughout the entire supply chain. If the supplier places orders with subcontractors, the requirements of this guideline must also be met by the subcontractor.

The supplier is obliged to regularly audit its suppliers who have a relevant influence on the quality of the products. The type, scope, and frequency of an audit are determined by the supplier on the basis of risk analyses, requirements, and the performance of its suppliers.

The ELBE Group reserves the right to audit its subcontractors itself in cases of urgent need and after consultation with the suppliers.

*ELSO-specific:* External customers may audit ELSO's suppliers and subcontractors after consultation with ELSO.

## 1.10 Change management supplier

The supplier must have a documented process for controlling and implementing changes that affect the product and manufacturing.

Any change must be assessed, verified, and validated in terms of its impact. Risks must be analyzed and evaluated. A corresponding risk assessment must be documented. All changes that deviate from the last valid product and production process release are subject to change management at the supplier.

### 1.10.1 change request

The supplier's change request must be submitted in advance using the "**Supplier Change Request**" form. Submission of this form does not entitle the supplier to implement the requested change. Only the approval of the responsible ELBE Group plant is a prerequisite for the implementation of the desired changes. The approved changes must be released in accordance with the sampling requirements specified by the ELBE Group.

**In order to continue to meet the ELBE Group's requirements in series production, the planned changes must be approved in parallel with series production!**

### 1.10.2 Parts life cycle

Each approved change request means that the "**Parts Lifecycle**" form for the item concerned must be updated and sent along with the sample. The supplier is solely responsible for entering these changes. If the supplier has already made changes to the component that deviate from the initial samples before the introduction of the "Parts Lifecycle" form, these changes must also be added to the parts lifecycle as soon as a new resampling takes place.

A completed "Parts Lifecycle" form must be enclosed with every type of sampling (initial sampling/resampling).

### 1.10.3 Trigger criteria for changes subject to notification

The following criteria trigger the change management process for suppliers:

- Product changes
- Process changes (e.g., machine, plant, tool)
- Change of a sub-supplier (e.g., heat treatment, steel mill)
- Change of production site
- Changes to packaging

Once the planned changes regarding the process, subcontractor, and production location have been approved, the supplier may switch between previous and current versions of the item without having to initiate a new change process.

**ATTENTION: Once other agreements have been made between customers, Elbe/Elso, and the supplier, these requirements must be complied with!**

#### 1.10.4 Procedure for changing subcontractors

The effort involved in the process from a change request to final series approval can vary, as different items have very different requirements. In the case of ELSO items in particular, the processing time for these change requests cannot be influenced, as there is often an external customer behind the product who must also approve the planned changes via a change request.

The work instruction for suppliers, "**Process flow for change management at the supplier**," describes the process in the form of a flow chart.

#### 1.11 Steelworks

**The customer-specific standards on the drawings are leading and must be adhered to.** If no special customer requirements are included on the drawing, the ELBE Group's steel mill list applies.

The work instruction "Approved Steelworks of the Elbe Group" serves as an overview of the various approved steel manufacturers for the forged part suppliers of the ELBE Group.

Changing a steel supplier is a change in the process. This change must be requested in advance using the "Supplier Change Request" document and the described process chain "Supplier Change Management" (QRL, Section 1.10) must be followed.

#### 1.12 steel mill certificates

##### 1.12.1 Cast and forged parts

Each delivery of cast and forged parts must be accompanied by a steel mill certificate 3.1 in accordance with DIN EN 10204:2004.

The minimum requirements of the ELBE Group for a steel mill certificate 3.1 are described in the work instruction "**Approved steel mills of the Elbe Group**." These must be strictly adhered to and taken into account.

Further specific requirements of external customers for a steel mill certificate are noted on the drawings in the individual customer standards. **These must be complied with as a matter of priority.**

##### 1.12.2 Steel/pipes and finished parts

A steel mill certificate in accordance with the order must be enclosed with every delivery of steel, pipes, and finished parts.

### 1.12.3 Delivery conditions for steel mill certificates

When preparing the delivery documents, the steel mill certificates must be sent to the designated email addresses of the respective ELBE Group ordering plant:

- Elbe in Bietigheim-Bissingen – **we\_elbe@elbe.elbe-group.de**
- Elso in Hofheim – **QS.Elso@elso.elbe-group.de**
- Elso Hungary (Eger – **we\_elbehu@elbeun.elbe-group.de**
- Elbe Italy North (Abbadia) – **certificati@elbeitalia.it**
- Elbe Italy South (Grumento Nova) – **qualità@itsud.elbe-group.de**

The following rules must be observed when sending steel mill certificates:

1. To: "Email from recipient plant of the ELBE Group"
2. Subject: "Mill certificate" / Item number "(e.g., 2.900.000.0001)" / Material batch / Order number
3. Attachment: Corresponding mill certificate  
→ **IMPORTANT:** It must be possible to clearly identify the attachment (no two attachments, no two item numbers, only the mill certificate in the PDF). Only one part per email with batch may be sent.

The steel mill certificate no longer needs to be enclosed with the delivery in paper form once it has been delivered electronically.

### 1.13 Product safety

The supplier must have documented processes for managing products and production processes relevant to product safety. Where applicable, these must include at least the following:

- Identification of legal and regulatory product safety requirements + Notification of the responsible Elbe plant about the identified requirements
- Identification of characteristics relevant to product safety
- Identification of safety-related characteristics and control measures for the product in the corresponding manufacturing process
- Separate approval of production control plans and P-FMEA
- Response plans
- Defined responsibilities
- Communication of product safety requirements throughout the entire supply chain
- Product traceability

## Contingency plans

The supplier must identify and assess internal and external risks in all manufacturing processes and infrastructure facilities. Timely delivery to the ELBE Group must be ensured.

Appropriate emergency plans must be developed for each production site that could jeopardize the supply to the ELBE Group. In the event of damage, the responsible supplier manager/developer at the relevant ELBE Group plant must be notified immediately.

In the event of damage (e.g., an interruption in externally supplied products or services, natural disasters, fires, etc.), the responsible ELBE Group plant must be informed immediately. In this case, suppliers must grant Elbe/Elso access to Elbe/Elso's own tools and allow them to be used.

The emergency plans developed must be reviewed at least once a year and updated if necessary. Emergency plans are subject to change. Any changes must be recorded in writing.

### 1.14 Handling of defective products

The supplier must apply a documented process for handling defective products if they cannot be reworked or repaired.

In the case of defective products, the supplier must decide for itself whether the defect in the product impairs its function, safety, or other legal requirements in any way.

#### The defective product could still be used:

In the event of deviations during series delivery from the samples, the supplier must obtain written approval in advance from the responsible ELBE Group plant. The "Construction deviation request" form must be used for this purpose. The product may only be delivered after confirmation from the responsible ELBE Group plant. The construction deviation request is then reviewed by the ordering plant. Once the construction deviation request has been approved, the product may then be delivered. Elbe/Elso reserves the right to pass on all costs incurred to the supplier.

#### The defective product can no longer be used:

The supplier must ensure that a product that does not meet the requirements and is therefore to be scrapped is rendered unusable before disposal, unless otherwise agreed with the responsible Elbe/Elso plant.

### 1.15 Control of reworked or repaired products

The supplier must have a documented process for reworking and repairing products and must carry out a risk analysis (e.g., FMEA). Any repairs or reworking that are not included in the agreed production control plan for the sampling phase must be submitted as a construction deviation request.

### 1.16 Retention periods

The supplier must specify and comply with retention periods for documents and records. The industry-specific retention periods and the nature of the relevant documents are described in the following standards:

#### **Automotive**

- IATF 16949 (Section 7.5.3.2.1) – Retention requirements
- VDA 1 – Documentation and archiving – Guidelines for the documentation and archiving of quality requirements
- AIAG (6) – Retention requirements

#### **Non-automotive**

For non-automotive components, the requirements may differ from the automotive standards listed above. In view of the limitation periods for product liability claims, retention periods of up to 30 years are recommended here.

This specification and summary do not replace the legal requirements.

### 1.16 Customer-specific requirements

Suppliers are obliged to comply with the specific requirements of customers in the ELBE Group. General quality requirements of customers are already included in this quality policy. Additional customer-specific requirements in the ELBE Group will be communicated during the project phase. In addition, all customer requirements noted on the drawing must be understood and complied with. The application is subject to the agreement between the supplier and the responsible plant of the ELBE Group.

### 1.17 Escalation model "Supplier / Purchased Parts"

Suppliers of products and services who do not comply with the quality, delivery, or planning agreement and its requirements are included in the escalation process so that improvement measures can be implemented more quickly and take effect.

## 2. Planning

The ELBE Group's goal is to involve suppliers in the quality planning of a new project at the earliest possible stage. The ELBE Group generally requires its suppliers to carry out systematic planning within the framework of project management. This planning applies both to the products manufactured by the supplier and to the parts purchased by the supplier.

All project managers (project team) must be named to the ELBE Group.

For the respective part or project, at least all of the planning steps listed below must be carried out by the supplier. Each section describes a necessary planning point. Unless otherwise specified by the ELBE Group, all of these requirements are mandatory.

Project-specific requirements that go beyond the content of this quality guideline will be agreed separately between Elbe and the supplier.

### 2.1 Work plan

A work plan must be created for all individual parts and assemblies. This must contain all information about process parameters, internal/external transport steps, and the machines and operating resources to be used.

### 2.2 Process flow chart

The supplier must create a process flow plan for the product to be delivered. This must cover the entire process chain from the incoming goods inspection to the shipment of the product. FMEA and production control plan must be consistent with the process flow plan.

### 2.3 Production control plan

The production control plan is a tool for process assurance. It is created in a multidisciplinary manner through systematic analysis of manufacturing, assembly, and testing processes.

The production control plans must take into account the results of the FMEA, experience from similar processes and products, and the application of improvement methods.

A production control plan must be created for all cast and forged parts purchased by the ELBE Group.

### 2.4 Test plan

Based on the production control plan, the supplier must create a test plan. This plan must specify all characteristics to be tested with the associated test equipment for each work step. Furthermore, the inspection frequency and the type of documentation of the results must be specified in the inspection plan. The characteristics to be inspected and the inspection frequency are determined by the supplier itself based on its experience. Exceptions to this are the characteristics described in the drawings under point "1.8.1 Marking of (special) characteristics".

## 2.5 Product description

The product description begins at a very early stage of the procurement process. This ensures that all requirements of the ELBE Group and its customers are recorded and included in all relevant documents (e.g., specifications, drawings, internal standards, etc.).

All problems identified during the product description process are tracked using a jointly agreed action plan.

When drawings are designed by the supplier, approval by the responsible ELBE Group ordering plant is required. For this purpose, the drawing and the corresponding 3D model must be submitted. The approval process only begins after the above-mentioned data has been submitted in full.

## 2.6 Traceability

Traceability must be designed in such a way that a clear assignment from the delivery data to the production and test batches is guaranteed. A functioning derivation system down to the subcontractor must be ensured.

## 2.7 Manufacturability analysis

The manufacturability analysis must be carried out in a multidisciplinary manner before the bid is submitted and presented to the ELBE Group upon request. The supplier must analyze all technical documentation, the general terms and conditions of purchase, and these quality guidelines as part of the contract review.

In the event of changes to the product and/or process: It must be checked whether a new manufacturability analysis is necessary with regard to this change.

Before awarding the contract, the ELBE Group reserves the right to carry out a joint detailed technical review with representatives of the supplier.

## 2.8 Project evaluation

Project progress reports form the basis for regular project evaluation. These must be carried out and submitted at the request of the ELBE Group.

## 2.9 Project handover to series production

Only after all activities planned in the project have been positively reviewed may the handover for the start of production take place.

This handover must be carried out by the supplier in a multidisciplinary manner and documented with the date and signature.

## 2.10 Prototype production

For prototype parts, a prototype test report must be submitted upon initial delivery and in the event of changes (index/part number). In accordance with the requirements of the ELBE Group, the initial sample form VDA Volume 2 or AIAG PPAP must be used for this purpose.

### 2.11 Coordination of series monitoring

In principle, all product and process characteristics are important and must be complied with. Special characteristics require proof of process capability. For this purpose, the supplier must monitor the characteristics using suitable methods, e.g., quality control charts (SPC). If process capability cannot be implemented, a 100% inspection must be carried out.

Special characteristics that cannot be measured or can only be tested destructively must be monitored and documented using suitable methods. The supplier must determine the test intervals and sample size. The planned series monitoring of the special characteristics must be coordinated with the responsible ELBE Group plant. This coordination must be documented accordingly in the production control plan.

The supplier must define the monitoring of series production in such a way that the selected test intervals, test characteristics, and test equipment ensure error-free production.

### 2.12 Product and Process FMEA

Failure Mode and Effects Analysis (FMEA) must be performed to investigate possible risks and evaluate them in terms of significance, probability of occurrence, and the possibility of detection. The risks must be minimized by introducing measures. The FMEA must take into account all phases of the product life cycle, such as design, production, assembly, packaging, transport, recycling, and disposal. The FMEA is to be used as a tool for continuous improvement.

FMEA must be created/updated in the following cases:

- Development and production of new parts
- Introduction of new manufacturing processes
- Relocation
- Drawing changes
- Process changes
- Occurrence of defects
- Complaints

Any deviating agreements must be discussed directly with the responsible ELBE Group plant.

### 2.13 Planning for preventive and predictive maintenance

To ensure delivery capability, a system of preventive and predictive maintenance for production equipment and tools must be developed. A maintenance plan must be drawn up, which includes maintenance intervals and the scope of maintenance. Consistent implementation must be documented in writing. In addition to defining preventive maintenance intervals, an emergency plan must be drawn up for all processes that have an impact on delivery capability. This includes, for example, machines with capacity bottlenecks, special tools, and the appropriate handling of critical spare parts for production equipment based on a risk analysis.

## 2.14 Status of subcontractors and purchased parts

If a supplier places orders with subcontractors, they must meet the requirements of this quality guideline and, if applicable, customer-specific requirements. This also includes the introduction of a system for quality planning and feedback.

The use of qualified subcontractors in the project must be guaranteed. If the requirements are not met, plans for improvement must be submitted. Implementation must be guaranteed before sampling of the entire product.

A list of all subcontractors used must be submitted to the ELBE Group. As part of the sampling process, the supplier must enclose a copy of the cover sheet of the respective sampling approval for each of its subcontractors.

Changes to subcontractors are subject to the change process and must therefore be treated as described in section "1.10 Supplier change management."

## 2.15 Logistics

The supplier is responsible for the packaging of its components. It must be designed in such a way that the product cannot be damaged or contaminated by external influences during transport.

The currently valid packaging regulations of the ELBE Group must be observed as a matter of priority.

## 3. Product and production process approval

### 3.1 Initial samples and documentation

Initial samples are products manufactured and tested under series production conditions.

The test results for all characteristics must be documented in an initial sample test report. Unless otherwise agreed, three reference samples must be documented. The initial samples must be delivered to the respective ELBE Group ordering plant on the agreed date, together with the initial sample test report and the documents in accordance with the agreed sampling stages. Missing initial sample documentation will not be processed and may result in a negative evaluation. Follow-up costs may be charged to the supplier.

Clear identification as a first sample and specification of the manufacturing location are required. To identify the characteristics, identical numbers must be sent in the first sample test report and in the current drawing approved by Elbe, which must be supplied. The mesh boxes in which the first samples are delivered must also be marked separately. The method of marking is left to the supplier.

Assemblies manufactured according to an Elbe design must be subjected to an initial sample inspection, including the individual parts, and presented to the responsible ELBE Group plant.

For products of the supplier's own design, the supplier must sample the assembly and present it to the responsible ordering plant of the ELBE Group. Initial sampling must also be carried out for individual parts and, if necessary, sub-assemblies. The ELBE Group must be granted access to this documentation as required.

Deviations from specifications that were not identified during product and production process approval entitle the ELBE Group to make a complaint at a later date.

Full payment of tooling costs shall only be made after process and product approval, or as agreed.

### 3.2 Reason for initial sampling/re-sampling

In accordance with the aforementioned regulations, approval processes in accordance with PPF/PPAP are required:

- When a product is ordered for the first time (noted in the order)
- After a change of subcontractor by the supplier
- After a product change to all affected features
- After a change to the drawing index affecting all relevant characteristics
- After a delivery interruption of more than one year
- In the event of a change in production processes (change in the process)
- After relocation of production facilities using new or relocated machines or equipment
- After the use of alternative materials and designs
- After the use of new/modified molding equipment

### 3.3 Initial sampling according to 3D data model

If applicable, measurements must be carried out against the valid 3D data model. The number of measuring points must be selected so that all geometries are reliably determined. Details of the measurements must be agreed with the responsible ordering plant of the ELBE Group.

### 3.4 Initial sample documentation

The initial samples must **be** documented and presented in accordance with the procedures required by the responsible ELBE Group ordering plant in accordance with **PPF VDA Volume 2** or **PPAP AIAG**.

**Series delivery may only take place after process and product approval by the ELBE Group.**

Required documentation according to PPF VDA Volume 2:

The work instruction "**Documentation and implementation of product and production process approval**" serves as an appendix to this quality guideline for suppliers. This work instruction specifies the product and process documentation required by the ELBE Group, which must be complied with by the supplier, where applicable.

Required documentation according to PPAP AIAG:

If no further information on initial sample documentation has been provided by the responsible ordering plant of the ELBE Group, submission level 3 applies.

Compliance with customer-specific requirements

The ELBE Group reserves the right to request a validation package from the supplier, which contains additional documents and forms that go beyond the scope required by AIAG/VDA. These are stored in the order text and on the drawings.

### 3.5 Deviations in initial samples

In the event of deviations from the valid specifications, written approval must be obtained in advance from the responsible ordering plant of the ELBE Group. The "Construction Deviation Request" form must be used for this purpose. This must be enclosed with the initial sample documentation.

## 4. Additional requirements

### 4.1 Special tests

Special tests are tests that go beyond the usual series tests. These include, for example, stress tests, reliability tests, and technically complex tests. These are listed separately in the orders.

### 4.2 Complaint processing

Once potential problems relating to safety, quality, or supply have been identified, the supplier is required to immediately notify all potentially affected ELBE Group plants and any third parties involved in the supply chain.

After every complaint by an ELBE Group plant, corrective measures must be initiated immediately in the form of an 8D report. The status of the corrective measures up to D3 must be reported to the affected ELBE Group plant within 48 hours and updated regularly. The 8D report must be completed in full (D1–D8) within 30 days and sent to the responsible ELBE Group plant. Completion of the 8D report (implementation and validation of the measures) must be verified within 60 days. All time specifications apply from the date of receipt of the complaint by the supplier. All remaining stock that could be affected by this complaint must be 100% checked before the next delivery. The ELBE Group reserves the right to have the next three deliveries 100% checked. Subsequent deliveries must be marked until the corrective action has been implemented. This and other exceptions (e.g., deadline changes) must be considered individually for each complaint case. The requirements in the complaint email must be observed as a priority.

Root cause analyses must always be carried out using suitable problem-solving methods and must be submitted to the responsible ELBE Group plant in an 8D report. The root cause analyses must be carried out with regard to the occurrence and non-detection of the deviation. The 8D report must always be written in German or English. It can only be completed with the consent of the ELBE Group.

### 4.3 Product and process audits

The supplier must conduct regular product and process audits to ensure that all applicable specifications are met. The results must be documented, including the measures taken. The effectiveness of the measures must be demonstrated.

### 4.4 Requalification test

Unless otherwise agreed with the ELBE Group, all products must undergo an annual requalification test. For similar parts, requalification can be carried out after prior consultation with the responsible supplier manager of the ELBE Group for each product group ("family"), or results from current series tests can be included. This includes, for example:

- Cyclical approval of series production
- Product audits
- Records of initial and final piece inspections
- SPC evaluations
- Initial sampling
- Incoming goods inspection

The basis for requalification/revalidation is the applicable ELBE specifications. A requalification test usually includes the following points:

- Dimensions/strengths

- Material
- Function

Other test scopes must be agreed with the receiving plant of the ELBE Group. The requalification test/annual revalidation must be planned and submitted together with the ELBE initial sampling. It must also be included in the production control plan. The results must be documented and made available for evaluation by ZF. The corresponding initial sample test report forms from VDA Volume 2 (PPF) or PPAP from AIAG must be used for this purpose. In the event of negative test results, the supplier must immediately contact the responsible supplier manager at the ELBE Group. The risk to the ELBE Group, the cause of the error, and corrective measures must be specified. The results of the requalification test must be submitted to the ELBE Group upon request.

#### 4.5 Heat treatment processes

Heat treatment processes are a crucial performance element and must therefore be monitored particularly closely.

If a service provider for the heat treatment of the ELBE Group is not yet known, the supplier must submit a valid CQI-9 self-assessment during the offer or planning phase. In addition, they must understand and comply with all requirements described in this quality guideline – this includes, above all, the required sampling documents.

The CQI-9 self-assessment must be carried out at least once a year by heat treatment service providers. If necessary, the ELBE Group can request and view the most recent CQI-9 self-assessment. The action plan for deviations must be submitted to the ELBE Group in the event of changes or upon request.

The ELBE Group reserves the right to audit the selected heat treatment service provider itself and to approve or reject it in the process.

#### 4.6 Coating processes

The CQI-12 self-assessment must be carried out at least once a year by service providers for coating processes. The ELBE Group may request and view this if necessary. The action plan for deviations must be submitted to the ELBE Group in the event of changes or upon request.

#### 4.7 Capability indices

The determination of capability indices can be found in the technical publications of VDA Volume 2, VDA Volume 4, or AIAG SPC.

The minimum requirements are as follows:

- Machine capability  $cmk \geq 1.67$
- Preliminary process capability  $ppk \geq 1.67$
- Continuous process capability  $cpk \geq 1.33$

The following applies to safety-related characteristics:

- Machinability  $cmk \geq 2.0$
- Preliminary process capability  $ppk \geq 2.0$
- Continuous process capability  $cpk \geq 1.67$

Any deviating requirements shall be agreed between the supplier and the ELBE Group.

#### 4.8 Construction deviation request

In the event of deviations from the technical documentation, delivery approval must always be obtained from the responsible ELBE Group ordering plant prior to delivery. This must be done via the construction deviation request.

If the goods have already been delivered, the ELBE Group must be informed immediately. The further procedure will then be determined.

The construction deviation will only be reviewed on the basis of a submitted 8D report. In addition, a re-sampling of the affected characteristics must be carried out during the next scheduled production run.

The following documents must be submitted with the construction deviation request:

- 8D report
- An action plan for returning to the planned series conditions
- The planned date for returning to planned series conditions

#### 4.9 Additional requirements for the delivery of forged parts

Batch-separated delivery (separate packaging) with a minimum quantity of 50 raw parts. Deviating batch sizes must be agreed with the responsible ordering plant of the ELBE Group.

## 5 Applicable documents

F10.4-1	Construction deviation request
AA04.1-1	Elbe Marking and characteristics of forged blanks
KP03.2-AA1	Approved steelworks of the Elbe Group
KP03.11-F1	Change request suppliers
KP03.11-F2	Parts history supplier
KP03.11-AA1	Supplier change management - Process flow
KP03.1-AA2	Documentation and implementation of product and production process approvals (PPF)