

# QRL 06.002

Guideline for Quality Assurance of Suppliers in the Elbe Group.

## Table of contents

<b>Preface</b>	4
<b>Section 1: General requirements</b>	5
1.1 Scope	5
1.2 Quality management	5
1.3 Audits	6
1.4 Business language	6
1.5 Quality objectives	6
1.6 Compliance with official and legal regulations	6
1.7 Compliance with regulations, social responsibility and sustainability	6
1.8 Environment	6
1.9 Special characteristics	7
1.10 Sub-supplier management	7
1.11 Product safety	7
1.12 Emergency plans	7
1.13 Control of reworked or repaired products	7
1.14 Handling of defective products	8
1.15 Retention periods	8
1.16 Customer-specific requirements	8
1.17 Changes to the product or process	8
1.18 Escalation model „Supplier/Purchased parts“	8
<b>Section 2: Planning</b>	9
2.1 Work plan	9
2.2 Process sequence plan	9
2.3 Production control plan	9
2.4 Test plan	9
2.5 Product description	9
2.6 Traceability	10
2.7 Feasibility study	10
2.8 Project evaluation	10
2.9 Project approval	10
2.10 Production of prototypes	10
2.11 Coordination of series (production) monitoring	10
2.12 Product and process FMEA	11
2.13 Planning of preventive and predictive maintenance	11
2.14 Status of sub-suppliers and purchased parts	11
2.15 Logistics	11

<b>Section 3: Process and product approval</b>	12
3.1 Initial samples and documentation	12
3.2 Reasons for initial samples	12
3.3 Initial sampling according to 3D data model	12
3.4 Initial sample documentation	13
3.5 Deviations in initial samples	13
3.6 Process and product approval	13
<b>Section 4: Additional requirements</b>	14
4.1 Special tests	14
4.2 Complaint handling	14
4.3 Product audits / Process audits	14
4.4 Layout inspection	14
4.5 Heat treatment processes	15
4.6 Capability indices	15
4.7 Deviation approval	15
4.8 Additional requirements for delivery of forgings	15
<b>Section 5: Appendices</b>	16
5.1 Submission levels	16
5.2 Other relevant documents	17
<b>List of tables</b>	
Table 1: PPF Nachweisführung (Evidence for PPA), (source: VDA Volume 2 Securing the Quality of Supplies“, chapter 6, pages 17-18, Selection of submission levels)	16

## Preface

Our reputation and position on the global market are strongly influenced by the quality of our products. The quality of your supplies has a direct influence on our products. As our partners, our suppliers are responsible for the quality of their products.

This guideline is intended to help implement a common quality strategy on the basis of 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 represent a constraint of these regulations. Within the entire supplier organization, a comprehensive philosophy of continuous improvement (CIP) must be introduced. This applies in particular to:

- Quality
- Costs
- Products and procedures
- Dates (deadlines)

Another significant contribution to supply reliability is effective energy and environmental management, which ensures compliance with the respective national environmental regulations and continuously and efficiently improves the environmental situation of the supplier.

Management

Gundram Elbe

## Section 1: General requirements

### 1.1 Scope

This guideline for quality assurance of deliveries to the Elbe Group applies to all deliveries of production material.

It also applies to services that influence the compliance with customer requirements, such as mechanical work, heat treatment processes, galvanizing processes, sorting, reworking, washing and calibration services.

It applies to all suppliers in the supply chain who supply the Elbe Group with products as well as to the supplies specified by the customer (suppliers of directed parts).

The Elbe Group demands that the following requirements are passed on to their own suppliers and sub-suppliers.

Elbe provides this document in German and English. Only the German version of this quality guideline is a controlled document according to IATF 16949. The German version is binding. The translations into other languages provided by Elbe are for information purposes only.

### 1.2 Quality management

The prerequisite for a supplier relationship with the Elbe Group is an effective quality management system based on the currently valid DIN ISO 9001, which is the minimum requirement for deliveries to the Elbe Group.

The effectiveness of the QM system is demonstrated by:

- Continuous and verifiable improvement of the processes, procedures and products
- Supply quality
- Supply reliability
- Effectiveness and speed of implementation of corrective actions
- Communication on all levels
- Completion of new and change projects in terms of content and on schedule

This quality management system is intended to achieve the common goal of zero defects.

For suppliers of automotive parts the certification according to IATF 16949 is mandatory. If suppliers are not certified according to this quality standard, a corresponding plan to achieve the standard must be worked out and handed over to the corresponding Elbe ordering plant.

The Elbe Group has to be provided with an information without any request if the certificate

- has been withdrawn
- has expired without successful recertification or
- has been temporarily suspended.

If recertification is not planned, the supplier has to send information to Elbe Group at least 6 months before the expiration date.

After successful recertification, the new certificates must be sent to the responsible supplier support/quality manager without explicit request.

Certifications are only valid when they are carried out by accredited certification companies.

Note: The points listed are for clarification purposes and do represent a limitation of the standards and regulations mentioned above.

### 1.3 Audits

Elbe reserves the right to audit the quality management system, procedures and products of the supplier or to have them audited by third parties. The Elbe representatives are to be granted unrestricted access to the premises during normal business hours, after prior notice.

### 1.4 Business language

Business language is German, or alternatively English, as well as the national language of the ordering plant, if both contractual parties are familiar with it.

The Elbe Group requests their suppliers to create documents, including PPF/PPAP and APQP documents, in English. Moreover, these documents can be written in the native language of the supplier or the recipient plant of Elbe Group if both are familiar with them.

### 1.5 Quality objectives

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

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

The data recorded shall be analyzed. Based on this analysis, suitable improvement measures are to be introduced and documented.

### 1.6 Compliance with official and legal regulations

Suppliers need to comply with all applicable official and legal requirements and pass them on to their suppliers within the entire supply chain.

### 1.7 Compliance with regulations, social responsibility and sustainability

Elbe Group demands that their suppliers and sub-suppliers accept and comply with the minimum legal expectations regarding business ethics, working conditions, human rights and environmental protection. Upon request, the suppliers must provide evidence of compliance with these requirements, which can also be done within the scope of an audit.

### 1.8 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 supply reliability. The Elbe Group is committed to the protection of the environment and has implemented the management systems according to **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 who operate foundries, electroplating and paint shops as well as companies for any surface treatment using chemicals or dyes, resins, leather, fats and oils need to have a certificate according to ISO 14001 or an equivalent system. If this is not available, an appropriate plan to achieve the standard must be developed and handed over to the Elbe Group.

### 1.9 Special characteristics

Elbe describes the requirements for products and services in technical drawings, specifications and the respective purchasing documents.

All characteristics need to be observed. There are characteristics with higher risks that require special attention. These are the „special characteristics“. Deviations in these characteristics can affect product safety, service life, ease of assembly, function and quality and can also violate official or legal regulations. Special characteristics are specified by Elbe and documented on the drawing and/or specification. They also need to be determined based on the supplier's risk analysis, e.g. the product/ and/or process FMEA based on the experience and know-how of the supplier.

Special Characteristics as defined by Elbe are represented as followed:

 **besonderes Merkmal mit Gültigkeit für Lieferanten**

### 1.10 Sub-supplier management

Sub-suppliers have a significant influence on the quality of the final product. A documented supplier management system must therefore also be maintained for these suppliers.

Suppliers are responsible for the development of their sub-suppliers. They need to have the necessary procedures, competences and capacities to manage their sub-suppliers and monitor their performance. This also applies to suppliers of directed parts. They need to ensure that their sub-suppliers comply with all requirements of this guideline. If the supplier places orders with subcontractors, the requirements of this guideline must also be fulfilled by the sub-contractor.

Elbe needs to be informed about the change of a subcontractor and the change needs to be approved. Production process approval and production approval need to be carried out according to PPF/PPAP.

### 1.11 Product safety

The supplier needs to have documented processes for the management of product safety relevant products and production processes.

The Elbe Group requests the appointment of a Product Safety & Conformity Representative (PSCR), who shall be responsible according to IATFL 16949, section 4.4.1.2.

### 1.12 Emergency plans

The supplier needs to identify and assess internal and external risks in all production processes and infrastructure facilities. The continuation of timely delivery to the Elbe Group needs to be ensured.

Suitable emergency plans need to be developed for each production site which could endanger the supply to the Elbe Group. In case of damage, the responsible supplier support/quality manager of the responsible Elbe plant needs to be informed immediately.

In the event of a case of damage (e.g. discontinuation of external delivery of products or services, natural disasters, fire, etc.), the responsible Elbe ordering plant needs to be informed immediately. In this case, suppliers need to grant Elbe access to Elbe's own tools or allow replacement of these tools.

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

### 1.13 Control of reworked or repaired products

The supplier needs to have a documented process for reworking and repairs to products and carry out a risk analysis (e.g. FMEA). Any repair or rework not included in the coordinated production control plan for the sampling phase PPF/PPAP phase is considered a process change according to section 1.17 „Product or Process Changes“.

A written approval by the ordering plant of Elbe is required before implementation.

#### 1.14 Handling of defective products

The supplier needs to use a documented process for handling defective products, unless they are reworked or repaired.

The supplier needs to ensure that a product that does not comply with the requirements and is to be scrapped is rendered unusable before disposal, unless otherwise agreed with the ordering plant of Elbe.

#### 1.15 Retention periods

The supplier shall define and comply with retention periods for documents, records and reference samples. The industry-specific retention periods and the nature of the relevant documents are described in the following standards:

##### Automotive industry

- IATF 16949 (section 7.5.3.2.1) – Retention obligations
- VDA 1 - Documentation and Archiving – Guideline for documentation and archiving of quality requirements
- AIAG (6) – Retention obligations

##### Non-Automotive sectors

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

These definitions and this summary do not replace the legal requirements.

#### 1.16 Customer-specific requirements

Suppliers are obliged to comply with the specific requirements of the customers in the Elbe Group.

General customer-specific requirements are already partly included in this quality guideline.

Additional customer-specific requirements within the Elbe Group will be communicated in the project phase. The application is subject to the agreement between the supplier and the responsible Elbe plant.

#### 1.17 Changes to the product or process

The supplier needs to have a documented process for controlling and implementing changes that affect the product and production.

Any change has to be assessed, verified and validated with regard to its impact. Any risks need to be analyzed and evaluated. An appropriate risk assessment has to be documented. All changes that differ from the last valid PPF/PPAP approval are subject to notification.

An implementation of the change is only possible after approval of the responsible Elbe plant.

Any change results in resampling of the affected PPF/PPAP characteristics, which has to be verified upon delivery to the responsible Elbe plant. The change can only be finally approved after checking and approval.

#### 1.18 Escalation model „Supplier/Purchased parts“

Suppliers of products and services that do not comply with the quality, delivery or planning agreements and their requirements are included in the escalation process so that improvement measures can be implemented more quickly and become effective.



## Section 2: Planning

The aim of Elbe is to involve suppliers in the quality planning of a new project at the earliest stage possible. Elbe expects from its suppliers within the project management a systematic planning according to VDA volume „Reifegradabsicherung (Maturity level assurance)“ (Product development - Maturity level assurance for new parts) or AIAG APQP, unless Elbe determines another procedure. This planning is valid for the products manufactured by the supplier as well as for his purchased parts.

The persons responsible for the project and the project team have to be named to Elbe.

At least all the following planning steps have to be carried out by the supplier for the respective part or project. Each section describes a necessary planning aspect (APQP element). Unless otherwise specified by Elbe, all of these requirements are binding.

Project-specific requirements, which go beyond the contents 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 plan needs to contain all information about process steps, internal/external transport steps as well as the machines and equipment to be used.

### 2.2 Process sequence plan

The supplier needs to draw up a process sequence plan for the product to be supplied. This plan needs to cover the entire process chain from incoming goods inspection to packaging and shipment of the product. FMEA and production control plan must be in line with the process sequence plan.

### 2.3 Production control plan

The production control plan is an instrument for process assurance. It is created in a team by systematically analyzing manufacturing, assembly and testing processes. This team should be composed of employees from planning, production and quality assurance as well as other related departments.

The production control plans should take into account the results of the product and process FMEA, experiences from similar processes and products and the application of improvement methods. A detailed description of the procedure for creating a production control plan is available in VDA volume 4 and in AIAG APQP.

A production control plan needs to be created for all products that Elbe purchases.

### 2.4 Test plan

Based on the production control plan, the supplier needs to create a test plan. From this plan, all characteristics to be tested and the corresponding test equipment for each operation must be specified. Furthermore, the inspection frequency and the type of documentation of the results need to be defined in the test plan.

### 2.5 Product description

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

All problems identified during the product description process are monitored by means of a mutually agreed action plan.

In case of interpretation of drawings by the supplier, approval by the ordering plant of Elbe is required. For this purpose, the drawing as well as the corresponding 3D-model need to be submitted to the ordering plant of Elbe. The approval process is only started after complete submission of the data mentioned above.

## 2.6 Traceability

Traceability needs to be designed in a way that ensures clear identification from the delivery data to the production and inspection lots. A functioning traceability system all the way to the subcontractor has to be ensured.

## 2.7 Feasibility study

The feasibility study must be submitted to the purchasing department with the offer and is a prerequisite for the placement of orders. The supplier is obliged to analyze all technical documents (e.g. drawings, specifications, environmental requirements, performance specifications, product group-specific and customer-specific requirements, etc.) as well as the General Terms and Conditions of Purchase and this Quality Guideline as part of the contract review.

Before placement of the order, the Elbe Group reserves the right to carry out a joint detailed technical inspection with representatives of the supplier.

## 2.8 Project evaluation

Project progress reports are the basis for regular project evaluation and need to be submitted to Elbe. Elbe reserves the right to verify the project progress.

## 2.9 Project approval

Approval for the start of production may only be given after positive verification of all activities planned in the project.

This approval must be documented by the supplier with date and signature of all responsible persons from quality assurance, production and planning as well as, if necessary, other areas involved.

## 2.10 Production of prototypes

For prototype parts, a prototype test report needs to be presented upon first delivery and in case of changes (index/part number). According to the requirements of the Elbe Group, the initial sample form VDA volume 2 or AIAG PPAP has to be used for this purpose.

## 2.11 Coordination of series (production) monitoring

Basically, all product and process are important and need to be complied with. Special characteristics require proof of process capability. For this purpose, the supplier needs to monitor the characteristics using appropriate methods, e.g. quality control charts (SPC). If the process capability cannot be established, a 100% inspection (test) needs to be performed.

Special characteristics, which are not measurable or only measurable by destroying the product, must be monitored and documented with suitable methods. Test intervals and sample size are to be determined. The planned series (production) monitoring needs to be coordinated with the ordering plant of Elbe. Coordination needs to be documented accordingly in the production control plan.

### 2.12 Product and process FMEA

The Failure Modes and Effect (FMEA) is to be carried out to examine potential risks and evaluate them with regard to their severity, probability of occurrence and the possibility of detection. The risks are to be minimized by initiating measures.

The FMEA needs to consider all phases of the product life cycle, such as design, production, assembly, packaging, transport, recycling and disposal.

The FMEA needs to be used as a tool for continuous improvement.

FMEAs need to be developed for the following occasions.

- Development/production of new parts
- Introduction of new production methods
- Relocation of plants
- Modifications of drawings
- Process changes
- Occurrence of defects

Other agreements need to be discussed with the responsible ordering plant of Elbe.

### 2.13 Planning of preventive and predictive maintenance

To ensure delivery capability, a system for preventive and predictive maintenance of production equipment and tools needs to be developed. A maintenance plan including the intervals and the extent of maintenance must be prepared. The consistent implementation needs to be documented in writing. In addition to the definition of preventive maintenance intervals, an emergency plan must be drawn up for all processes that have an influence on the delivery capability. This includes, for example, machines with capacity bottlenecks and special tools.

### 2.14 Status of sub-suppliers and purchased parts

If a supplier assigns orders to sub-suppliers (subcontractors), they must also comply with the requirements of this quality guideline. This also includes the implementation of a system for quality planning and feedback.

The use of qualified sub-suppliers in the project needs to be guaranteed. If the requirements are not met, improvement plans need to be drawn up. Implementation must be ensured before sampling (PPF/PPAP) of the complete product.

A list of all sub-suppliers used needs to be sent to the ordering plant of Elbe. Within the scope of sampling, the supplier needs to enclose a copy of the cover sheet of the respective sampling approval (PPF/PPAP) for each of his sub-suppliers.

Changes of sub-suppliers are subject to the change process and are therefore subject to notification.

### 2.15 Logistics

The supplier is responsible for packaging his components. Packaging must be done in a way that the product cannot be damaged or soiled by external influences during transport.

For this purpose, the valid packaging regulations of the ordering plant of Elbe need to be observed.

## Section 3: Process and product approval

### 3.1 Initial samples and documentation

Initial samples are products manufactured and tested under series production conditions (machines, systems, operating and test equipment, processing conditions).

The test results of all characteristics need to be documented in an initial sample test report. The number of parts to be documented needs to be agreed with Elbe. The initial samples are to be delivered to the respective ordering plant of Elbe together with the initial sample test report and the documents according to the stages of submission at the agreed date.

Clear identification as initial sample and indication of the production site are required. For identification of the characteristics, identical numbers in the initial sample test report and in the current drawing approved by Elbe to be supplied with the product are to be used.

Components that were manufactured according to Elbe design standards, including the individual parts, are subject to an initial sample inspection and need to be presented to Elbe.

For products based on the supplier's own design, the supplier needs to sample the assembly and present it to Elbe. Initial sampling must also be performed for individual parts and, if necessary for sub-assemblies. Elbe must be allowed to review this documentation upon request.

Deviations from the Elbe specification, which were not detected during the process and product approval, entitle Elbe to make a complaint at a later date.

The initial sample documentation must be provided at the same time as the initial samples. Missing initial sample documentation leads to a negative supplier evaluation. Initial samples without initial sample documentation cannot be processed.

### 3.2 Reasons for initial samples

Approval processes according to PPF/PPAP are required in accordance with the regulations mentioned:

- When a product is ordered for the first time (indicated in the order).
- After the supplier changes a sub-contractor.
- After a product change to all characteristics affected by it.
- For all affected characteristics following a drawing index change thereof.
- After a delivery interruption of more than one year
- In case of a change to the production process.
- After the introduction of new or modified moulding equipment (dies, punching and pressing tools, for several moulds or multiple moulding / each cluster).
- After relocation of the production site and the use of new or relocated machinery or operating equipment.
- After the use of alternative materials or designs.

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

If applicable, measurements shall be performed based on the valid 3D data model. The number of measuring points shall be selected in a way that all geometries are reliably measured. Details of the measurements are to be agreed with the ordering plant of Elbe.

### 3.4 Initial sample documentation

The initial sample documentation according to the requested submission level (see section 5.1) shall be supplied at the same time as the initial samples. Elbe may request a validation package from suppliers, which contains additional documents and forms, the scope of which goes beyond the one required by AIAG/VDA. Any missing, incomplete or delayed initial sample documentation is considered a problem in the delivery performance and affects the performance evaluation of the supplier. Initial samples without complete documentation are not processed and result in additional costs that are charged to the supplier.

### 3.5 Deviations in initial samples

Documents, records and initial sample parts may only be submitted if all specifications are fulfilled. In case of deviations the supplier needs to obtain written permission from the ordering plant of Elbe. For this purpose, the mandatory form „F10.4-1 Bauabweichungsantrag (Deviation request form)“ under section 5.2 must be used. The written permission needs to be attached to the submitted initial sample documentation. Initial samples with deviations for which no approval of deviation is available are not processed by Elbe.

The following documents need to be submitted together with the deviation request form:

- 8D report
- An action plan for re-establishing the planned series (production) conditions
- The planned date for re-establishing the planned series (production) conditions

### 3.6 Process and product approval

The process and product approval is carried out according to the production process and production approval procedure (PPF) of VDA volume 2 or according to the production part approval procedure of DIN ISO 9001 (PPAP).

Series production delivery may only be made after Elbe has approved the process and product. Product and process approval includes

- Initial sample approval of the products
- Approval of quality planning (APQP)
- Proof according to the submission levels

Full payment of the tool costs will only be made after process and product approval or by agreement.

## Section 4: Additional requirements

### 4.1 Special tests

Special tests are tests that go beyond the usual series tests; these include load tests, reliability tests and technically complex tests. These are listed separately with the orders.

### 4.2 Complaint handling

After becoming aware of possible problems in the area of safety, quality or supply, the supplier is required to immediately inform all possibly affected Elbe plants as well as third parties involved in the supply chain.

Following each complaint by the ordering plant of Elbe, defect rectification measures must be initiated immediately in the form of an 8D report. The status of the remedial measures (up to D3 in the 8D report) must be reported to the affected ordering plant of Elbe within 48 hours at the latest and updated regularly. The completion of the 8D-Report has to be documented at the latest with the next delivery or within a period of 60 days.

Cause analyses must always be performed using suitable problem-solving methods and must be submitted to the responsible Elbe plant.

The 8D-Report can only be completed with the consent of the Elbe plant affected.

#### Identification of inspected parts in case of complaint

Follow-up deliveries from warehouses or from circulating stocks that have been subjected to a 100% inspection due to a complaint must be marked or labeled accordingly.

Until the corrective actions have been permanently and successfully implemented, each packaging unit must be clearly marked.

The type of marking has to be coordinated with the Elbe plant affected.

### 4.3 Product audits / Process audits

The supplier needs to perform regular product and process audits (according to the audit schedule and regarding current events/incidents) to ensure that all delivery-specific specifications (manufacturing, testing, marking, preserving, cleanliness, packaging, delivery documents) are fulfilled. The results including the actions implemented need to be documented. The effectiveness of the actions must be proven.

### 4.4 Layout inspection

The requalification (layout inspection) must be planned by the supplier and shown in the production control plan. All products have to be subjected to an annual layout inspection. Any deviating agreements have to be discussed with the responsible ordering plant of Elbe. The results of the layout inspection are to be presented to Elbe on request.

The valid customer specifications are the basis for requalification. A layout inspection includes:

- Dimension
- Material
- Function
- Documentation
- Packaging

Other inspection/test items are to be agreed with ELBE.

#### 4.5 Heat treatment processes

Heat treatment processes are a critical performance element, so they require special monitoring. The Elbe Group therefore recommends to prefer service providers for heat treatment who have already received a group approval from Elbe.

In the event that it becomes necessary to use a heat treatment supplier that has not been previously approved by the Elbe Group, the supplier needs to provide a valid CQI-9 self-assessment already during the quotation (offer) phase or during the planning phase. The Elbe Group reserves the right to audit the selected supplier for heat treatment himself or herself and to approve or reject it in this course.

The CQI assessments are self-assessments and need to be performed according to the CQI requirements at least once a year.

These self-assessments and action plans for deviations have to be submitted to the Elbe Group if they are changed or upon request.

#### 4.6 Capability indices

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

##### Minimum requirements are:

Machine capability	cmk	≥ 1,67
Preliminary process capability	ppk	≥ 1,67
Continuous process capability	cpk	≥ 1,33

Deviating requirements will be coordinated and agreed upon between the supplier and the ordering plant of Elbe.

#### 4.7 Deviation approval

In case of deviations from Elbe's technical documents, Elbe has to obtain an approval for delivery before delivery. (For deviation request form, see section 5).

Elbe has to be informed immediately if goods have already been delivered. The further procedure is subsequently determined.

In case of a deviation approval, the responsible ordering plant needs to obtain a release. The deviation approval is only checked on the basis of a transmitted 8D report. In addition, re-sampling of the affected characteristics has to be carried out during the next scheduled production.

#### 4.8 Additional requirements for delivery of forgings

Delivery in separate batches (separate packaging) with a minimum quantity of 50 blanks. Deviating batch sizes must be agreed with the responsible ordering plant of Elbe.

Transmission of a 3.1 material test report preferably in electronic form.

## Section 5: Appendices

### 5.1 Submission levels

In general, **submission level 2** applies, unless Elbe has different requirements or written agreements for individual components.

Extent, where applicable to the product:		Submission level			
		0	1	2	3
Cover page for the PPF report		V	V	V	V
1	Test results for product approval: (e.g. geometry, dimensions, function, material (strength, physical properties, ...), weight, surface feel, acoustics, smell, appearance, surface, reliability, ESD testing, electrical safety)	V	V	V	V
2	Sample (number or quantity supplied by agreement)	D	D	V	V
3	Technical specifications (e.g. customer drawings, CAD data, specifications, approved design changes, short-circuit protection, tension protection, functional safety (FUSI))	D	V	V	V
4	Product FMEA	D	D	D	D
5	Construction and development approval of the supplier with design responsibility according to agreement	D	D	V	V
6	Proof of compliance with the legal requirements (e.g. environment, safety, recycling, national certification procedures)	na	V	V	V
7	Material safety data sheet via IMDS*	V	V	V	V
8	Software inspection report	D	V	V	V
9	Process FMEA	D	D	D	D
10	Process sequence plan (production and inspection steps)	D	D	D	V
11	Production control plan („Control Plan“)	D	D	D	D
12	Process capability proofs	D	D	V	V
13	Proof of evidence of special characteristics	na	na	V	V
14	List of test equipment (product-specific)	D	D	V	V
15	Test equipment capability analysis, where appropriate (result)	D	D	D	D
16	Tool overview (number of pieces / number of cluster and information on the tool concept)	D	D	V	V
17	Proof for achieving the stipulated capacity (process validation)	D	D	V	V
18	Written self-assessment of the criteria according to matrix assessment serial readiness for product and process	D	D	V	V
19	Product lifecycle reports	D	V	V	V
20	Proof of suitability of the load carriers used incl. storage	D	D	V	V
21	PPF status supply chain (supplied parts, directed parts and parts manufactured internal)	D	D	V	V
22	Release of coating systems according to customer requirements	D	D	V	V

Tabelle 1: Evidence for PPA, (source: VDA Volume 2 Securing the Quality of Supplies“, chapter 6, pages 17-18, Selection of submission levels)

V Presentation to customers

D Implementation, documentation and recording at the supplier (for possible inspection by the customer)

na not applicable, submission level must not be selected

\* The material data sheet has to be submitted via IMDS along the supply chain, regardless of the contractual situation



## 5.2 Other relevant documents

F10.4-1 Deviation request from

AA 04.1-1 Marking/identification by Elbe and characteristics of forged blanks