

PFISTERER



SUPPLIER QUALITY MANUAL QUALITY REQUIREMENTS

Table of contents

1 Introduction..... 4	
1.1 Introduction.....4	
1.2 Collaboration.....4	
1.3 Procurement phases.....4	
1.4 Scope of application.....5	
2 Vendor selection 6	
2.2 Purchase conditions.....7	
2.3 Vendor self-assessment.....7	
2.4 Interfaces.....7	
2.5 Requirements relating to the vendor management system.....7	
2.6 REACH..... 8	
2.7 Conflict minerals 8	
2.8 QSV – Quality assurance agreement.....9	
2.9 Feasibility study9	
2.10 Potential analysis based on VDA 6.3.....9	
3 Implementation of product and process 10	
3.1 Product development by the vendor 11	
3.2 Process development by the vendor 11	
3.3 Advanced quality planning..... 11	
3.3.1 Inspection planning 11	
3.3.2 Measurement system analysis 12	
3.3.3 Scope of inspection..... 12	
3.3.4 Inspection documentation 12	
3.3.5 Statistical process control (SPC)..... 12	
3.3.6 Quality records and retention periods 12	
3.4 Lieferantenaudit..... 13	
3.5 Production process and product approval (PPA)..... 13	
3.5.1 Purpose..... 13	
3.5.2 Sampling standards 14	
3.5.3 Initial sampling inspection 14	
3.5.4 Scope of approval 15	
3.5.5 Representative sampling..... 15	
3.5.6 Release status..... 16	
3.5.7 Shipping initial samples..... 17	
3.5.8 Packaging initial samples..... 17	
3.5.9 Labelling initial samples..... 17	
4 Safeguarding delivery reliability in series production..... 18	
4.1 Series-production delivery 19	
4.2 Logistical requirements 19	
4.2.1 General packaging and shipping requirements 19	
4.3 Production and inspection equipment provided 19	
4.4 Deviation of dimension/special release .. 20	
4.4.1 Faulty products that the vendor believes are suitable for their intended use 20	
4.4.2 Faulty products that the vendor wishes to rework before delivery 20	
4.5 Change management/PCN (Product Change Notification) 21	
4.5.1 Changes to parts 21	
4.5.2 Changes to parts at vendor request 22	
4.5.3 Changes to parts at request of PFISTERER 22	
4.5.4 Product lifecycle 22	
4.6 Repair orders 22	
4.7 Complaints on the basis of quality defects 23	
4.7.1 Complaints on the basis of quality defects 23	
4.7.2 Returning faulty parts/parts for reworking 23	
4.7.3 Processing of PFISTERER complaints by the vendor 24	
4.7.4 Product labelling and traceability 25	
4.7.5 Rules relating to reworking and sorting inspections 26	
4.7.6 Labelling controlled or reworked parts ... 26	
4.7.7 Labelling the initial delivery of fault-free parts 27	
5 Continuous improvement process (CIP) 28	
5.1 Vendor assessment 29	
5.2 Business reviews..... 29	
5.3 Objective agreement and controlling 29	
5.3.1 Quality objectives – number of complaints..... 25	
5.3.2 Controlling target levels..... 26	
5.4 Quality improvement projects 26	
6 Abbreviations..... 26	
7 Change history 27	

1 Introduction

1.1 Introduction

The PFISTERER Group is a German-Swiss family company with a global network of production sites and sales offices. It develops, produces and distributes components and complete solutions for the highly sensitive interfaces in modern power networks.

Our uncompromising approach to quality starts with the selection of our vendors. Any company that manufactures components for us must meet the highest standards right from the outset. The quality of its deliveries has a direct impact on our products. As our partners, our vendors are responsible for the quality of their products.

Our clients have very high expectations, and we want to meet or even exceed these in future. That is why we depend on reliable and highly quality-conscious vendors as partners, who support us through:

- Consistent implementation of a ZERO-ERROR strategy
- Maximum engagement
- Maximum flexibility
- 100% delivery reliability

1.2 Collaboration

This manual provides information on the general requirements that the PFISTERER Group and its associated companies set for its vendors and partners. These requirements cover the different phases of product development, right through to phase-out, and serve as the basis for a positive and successful collaboration.

There must be a mutual openness in all phases of this collaboration, while maintaining strict confidentiality (protection of know-how, patents, etc.).

As we wish to guarantee our quality requirements on a permanent basis and achieve the agreed quality goals, you as a vendor must give your guarantee to the PFISTERER Group that your deliveries are compliant with the agreements, drawings, standards and specifications.

1.3 Procurement phases

The PFISTERER vendor process contains the following phases:

1. Clarify procurement requirements
2. Find and select vendors
3. Establish the product reference
4. Safeguard delivery reliability
5. Implement continuous improvement
6. End the business relationship/substitution

1.4 Scope of application

This manual applies to all production materials procured by PFISTERER. Production materials are divided into the following sub-groups (commodities):

	Commodity	Subcommodities
1	epoxy casting resin, silicone	Silicone, casting resin parts, sealing compounds, sealing compounds, silicone raw components
2	cast & plastic parts	casting parts, heat shrinking tubes, rubber parts, sintered components, plastic parts, die casting, precision casting
3	Metal parts	bars, profiles, sheet metal parts, wire bending components, ropes
4	machined parts	forging parts, turned and machined components, flow pressed parts, subcontractor
5	Electronics	cable-lines, electrical components, circuit boards, resistors, LV/MV/HV cables
6	Insulators	hollow insulators, bar insulators, resin insulators, porcelain insulators, fiber glass material

The requirements relating to vendor and product qualification may differ for the individual product groups (commodities). The procurement of infrastructure materials is excluded from this manual.

2 | Vendor selection

2.1 Vendor selection

Vendor selections for production materials are made by Purchasing in close collaboration with Quality Management, Logistics, Development and Production. In addition to the technical, commercial and logistical aspects, the vendor's quality capability is the key selection criterion.

2.2 Purchase conditions

Purchase decisions are subject to the general purchasing conditions of the PFISTERER Group (in their latest version). If required, they can be requested from the responsible purchaser or downloaded from <http://www.pfisterer.com/>.

2.3 Vendor self-assessment

In the vendor self-assessment, the vendor provides the most important information about its company for the purposes of an initial assessment. Before a request for quotation [RFQ] can be started, the "Vendor self-assessment" form must be completed and submitted to PFISTERER. It can be downloaded online from the vendor questionnaires or it will be sent to the potential vendor during first contact. It must be completed and returned to the purchaser submitting the request.

2.4 Interfaces

To make it easier to exchange information, the names of the vendor's contact persons who are responsible for all issues must be provided in writing together with their role, email address, telephone number and backup contacts. The responsible purchasers in each case, as well as the MRP controllers, act as the PFISTERER contact persons. The vendor must inform PFISTERER immediately of any changes to the responsible persons.

2.5 Requirements relating to the vendor management system

The basis for the collaboration with vendors is a management system with a level of functional capability that must be verified through certification in accordance with the following standards and specifications.

Quality management system (QMS):

ISO 9001 [alternative depending on the vendor's industry sector: VDA 6.1 or IATF 16949 (automotive industry), (in their latest versions).

PFISTERER also expects verification of an environmental management system and occupational safety and health management system.

Environmental management system (EMS):

ISO 14001 [alternative: EMAS]

Occupational safety and health management system (OSHMS)

OHSAS 18001 or ISO 45001 [alternative: OHRIS, SCC, ASCA, ILO OSH Guideline]

Copies of the latest certificates in each case must be submitted to PFISTERER without further request. PFISTERER must be notified immediately of any changes to the certificates or of the withdrawal of the certificates. In relation to the management system, PFISTERER is authorised to view the documents below:

- Requirement and verification documents plus quality-related data regarding the products procured by PFISTERER
- Requirement and verification documents plus quality-related data regarding the management system
- Procedural descriptions, work instructions and operating instructions, where these relate to the planning and implementation of products procured by PFISTERER

The vendor is solely responsible for the suitability, appropriateness, efficiency and reliability of the management systems, irrespective of whether PFISTERER approves the products procured by PFISTERER and the processes during the initial sampling phase. This applies in particular to the organisational and technical measures relating to quality planning and control. The vendor undertakes to manufacture and inspect the products made for PFISTERER in accordance with the rules of its management system.

2.6 REACH

The REACH Regulation (EC) No. 1907/2006 is the European Regulation on the Registration, Evaluation, Authorisation and Restriction of Chemicals. REACH is based on the principle that manufacturers, importers and downstream users will take responsibility for their chemicals. REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals. The vendor must take responsibility for fulfilling the duties arising from this Regulation.

2.7 Conflict minerals

PFISTERER aims to establish maximum transparency in the supply chain for "conflict minerals" and to avoid procuring them from conflict zones and other high-risk regions. PFISTERER is supported in the achievement of this goal by its vendors supplying information regarding the origin of any conflict minerals that it uses.

2.8 QSV – Quality assurance agreement

The purpose of a QAA between a vendor and PFISTERER is to ensure that the quality level required by PFISTERER is guaranteed right from the product planning and development phase, as well as to ensure that the interfaces between the vendor and PFISTERER are defined and an intensive and unproblematic approach to collaboration is promoted.

The QAA is used to draw up joint rules targeted at cross-manufacturer quality assurance measures and not as a way to place any contractual partner at a disadvantage. The vendor hereby declares that it is prepared to conclude a quality assurance agreement with PFISTERER.

2.9 Feasibility study

PFISTERER has created a feasibility study form containing the most important points relating to the feasibility of PFISTERER applications. This form presents the minimum requirements. On request by PFISTERER, this form must be completed truthfully and confirmed to PFISTERER in writing. The completed feasibility study is essential to the decision to award the contract.

2.10 Potential analysis based on VDA 6.3

The potential analysis is used to prepare the decision to award the contract to potential vendors, particularly when awarding technically complex or newly developed products. PFISTERER uses this to assess the quality capability of potential vendors. The purpose of the initial audit is to ensure the successful introduction of a new vendor or product or to assess a new site. This means assessing the quality of the vendor in relation to the product and process as well as establishing robust quality processes.

3 | Implementation of product and process

3.1 Product development by the vendor

Vendors that implement product development for PFISTERER must draw up a project plan containing all relevant technical, financial, quality and scheduling aspects. The project plan includes all phases of product and process development including assessment, verification and validation of the relevant project phases.

This project plan must be drawn up on the basis of milestones and defined jointly as a binding measure by the vendor and PFISTERER. It can only be modified in a joint process. The vendor must submit monthly APQP reports to PFISTERER.

3.2 Process development by the vendor

In the development of a technical product, quality and reliability are determined by a coordinated and carefully planned production process. PFISTERER defines this as a systematic processing sequence in accordance with APQP or a comparable product development process.

3.3 Advanced quality planning

The purpose of advanced quality planning is to identify all the relevant variables influencing product quality right from the planning and development phase of a product, as well as to reduce risk in the product and process and to schedule appropriate and verifiable testing stages that safeguard the necessary product quality. The following process steps must be documented as a minimum. Exceptions must be submitted in writing to the responsible PFISTERER vendor manager, specifying a coherent reason for granting approval.

3.3.1 Inspection planning

In addition to the requirements documentation, such as drawings, factory standards, specifications and data sheets from PFISTERER etc., the vendor's inspection planning process must include the results of the risk analysis (FMEA) and previous experiences producing similar products. The functional and safety-related dimensions and product properties are of paramount importance. The results of the inspection planning process must be attached to the sampling documentation in the form of a control plan.

3.3.2 Measurement system analysis

Unless otherwise agreed with the vendor manager, the suitability of the measurement and inspection equipment must be statistically verified in each case by a measurement system analysis.

Depending on the inspection process, this measurement system analysis must be verified in accordance with DIN V ENV 13005 GUM or the MSA1 methodology, or in accordance with the MSA2 methodology if there is inspector influence.

The characteristic values that must be achieved (cg, cgK, % R & R) are agreed in detail between the vendor and the responsible PFISTERER vendor manager.

3.3.3 Scope of inspection

If, after consultation with PFISTERER, only sample inspections are to be provided for the inspection of quality attributes, they should be based on the standardised sampling plans in accordance with the following:

- ISO 2859-1 Sampling procedures for inspection by attributes
- ISO 3951-1 Sampling procedures for inspection by variables

3.3.4 Inspection documentation

Following a successful initial sampling procedure, the inspection results from the first products/batches inspected in accordance with the control plan must be listed by part number/batch number and sent together with the goods to PFISTERER. Material inspection certificates must be created separately for each individual delivery batch and included in the delivery, if requested by PFISTERER in the order text.

3.3.5 Statistical process control (SPC)

In series production, the vendor must verify process capability for the product characteristics defined in the drawing or in product discussions using suitable statistical process control (SPC) procedures. This must be applied over the entire product lifecycle to enable a rapid response to any process deterioration. The selection of a suitable control chart by the vendor must be based on such aspects as the character of the variables (quantitative or attributive), the scope of sampling and the unit quantities produced per shift. The characteristic capability values must adhere to the following limit values as a minimum:

Machine capability Cmk \geq 2.00
Process capability Cpk \geq 1.67

3.3.6 Quality records and retention periods

Document types: The vendor must retain the following requirement documents and quality records relating to the implementation of its quality measures and ensure they are available in good order at a suitable location:

- Drawings and other specifications (including superseded versions);
- FMEA (including superseded versions);
- Product and process release documents (ISIR, production schedule, control plan, etc.);
- Material analysis certificates;
- Series production inspection reports;
- Traceability documentation.

Archive media: Originals in paper format or on data storage media in conjunction with tamper-proof document management systems.

Retention periods: At least 30 years, unless longer periods are prescribed elsewhere or by law. Once the retention periods have expired, the records/documents listed above must be submitted to PFISTERER for subsequent storage without specific request.

3.4 Vendor audit

PFISTERER expects its vendors and sub-vendors to be prepared to demonstrate the effectiveness of its QM systems to PFISTERER as part of an audit. For this purpose, PFISTERER or a party appointed by PFISTERER shall be granted access to all business premises and will be provided with support by a qualified employee. This also applies to clients of PFISTERER together with PFISTERER.

During product development and whenever necessary, PFISTERER reserves the right to implement the following measures:

- System audits based on DIN ISO 9001 and/or a
- process audit/or process acceptance based on VDA 6.3 in the
- factory facilities of the vendor and its sub-vendors.

Before implementing an audit or similar, the vendor will be notified accordingly. If defects are identified during an audit, they must be rectified by the vendor and verified accordingly. The vendor will create action plans for this purpose and these will be approved by PFISTERER. The measures

specified in these action plans must be completed on time and their completion must be reported back to PFISTERER together with evidence that the measures have been effective. If the measures are not completed on time, there will be no new assignments until they are completed.

3.5 Production process and product approval (PPA)

3.5.1 Purpose

Before parts or assemblies can be supplied in series, the vendor must verify that the requirements specified in drawings and specifications have been met and that written product release from the responsible vendor manager at PFISTERER is available. The following are also required: verification of a suitable production process for the defined product characteristics, a capacity analysis with sufficient reserves, the use of appropriate testing equipment and a complete initial sampling of one or more parts per cavity (cavity designation required) from initial series production with all associated documents. PFISTERER provides appropriate forms in its download portal. The vendor is free to use its own forms as long as the content matches that of the PFISTERER template.

3.5.2 Sampling standards

PFISTERER accepts sampling standards based on VDA Volume 2 or alternatively PPAP. The standards in this case are submission level 2 in accordance with VDA Volume 2 or submission level 3 in accordance with PPAP.

The scope of sampling can be adjusted in consultation with the responsible vendor manager; when conducting full sampling, the inspection plan, process schedule and stamped drawing with assignment of measurement values are always required. In the event of re-sampling or basic sampling, a cover sheet containing appropriate information must be sent as a minimum. If details arise that require an agreement between the vendor and PFISTERER, such as the level of detail of inspections, necessary documentation, inspection equipment capabilities and confirmation that legal requirements have been observed, written agreements must be made with the responsible vendor manager.

If there are no written agreements, the initial sampling documentation submitted by the vendor shall be deemed to be a proposal regarding the scope of sampling. PFISTERER will then decide whether these are appropriate and adequate or whether additional documentation and verification are required.

3.5.3 Initial sampling inspection

The initial sampling inspection is applied to new parts, technical changes to products and changes to production processes. PFISTERER inspects the submitted initial sample parts in full and in accordance with its own specifications, or accepts the vendor's specifications without conducting its own inspection. If no counter-inspection is conducted, the vendor's specifications apply in conjunction with the PFISTERER requirement documents as the starting point for any later deviations that are identified. Initial samples must be manufactured under series conditions.

An initial sampling inspection may also be required in series production for requalification inspections of process and product.

The procedure applies in general to all material products (systems, modules, parts, components) that are used at PFISTERER as:

- Production parts
- Service parts or spare parts
- Semi-finished products/raw materials
- Production materials and consumables that are part of a product (e.g. paint, liquid sealant, adhesives, oils, greases, etc.)

This does not cover capital goods like production facilities or process materials (lubricants, operating supplies, etc.) Unless otherwise agreed between the vendor and PFISTERER, no PPA will be implemented for standard products (e.g. DIN parts, liquids in accordance with DIN or SAE). In these cases, a cover sheet with confirmation that the products/parts meet the required standards is sufficient. Extended requirements, like special product properties or maximum permissible deviations rates, must be specified individually. Parts with modified or individual specifications (parts as per drawing) are not considered standard parts.

Services and software can be included as part of function checks within the PPA of the products. A detailed procedure for designing processes and projects for developing and approving software-based systems is described in VDA Volume 13.

3.5.4 Scope of approval

The production process and product approval includes the following:

- Products in accordance with the initial sampling inspection and the associated manufacturing processes, which were documented in the initial sampling documents and/or were approved by audits.

Changes to the product or manufacturing process by the vendor must be agreed with PFISTERER in each case.

3.5.5 Representative sampling

Representative sampling is a useful procedure for parts families that are not tool-specific (parts of the same type that differ only in terms of their details). In this procedure, the most complex representative of this parts family is sampled in full, while the other items in this parts family are sampled with a cover sheet that must make reference to the representative item. This process reduces the amount of work required on the part of both the vendor and PFISTERER.

3.5.6 Release status

The initial sampling inspection may yield the following results:

Findings from PFISTERER initial sampling inspection	Consequences
Acceptance	The product deliveries are approved in line with the purchase order.
Conditional acceptance	The supplied parts are accepted on an exceptional basis. The delivery of products that do not meet the full scope of sampling is permitted only for a limited time or unit quantity (exemption approval). The vendor will be notified of the conditions and is required to observe them. Re-sampling (of the rectified deviations) is required.
Return	Supply of the products is not permitted. Re-sampling is required.

Details of re-sampling procedures must be agreed with the responsible vendor manager in Quality Assurance.

3.5.7 Shipping initial samples

Initial samples and initial sample inspection reports (ISIR) must be submitted to the vendor manager in Quality Assurance at the client's plant that is placing the order. Initial sample inspection reports must be uploaded to the vendor portal in electronic format (e.g. as a PDF), or as a temporary measure can be sent by email to Erstmuster@pfisterer.com and enclosed with the sample parts.

To ensure the emails are assigned correctly, the subject line must contain the following information:

PFISTERER material number
PFISTERER description
Order number
Orderer

Once the approval on the initial sample cover sheet is signed by the responsible vendor manager, the initial sampling procedure is complete.

3.5.8 Packaging initial samples

The packaging of initial sample parts is defined and approved in consultation with the responsible vendor manager. An "initial sample" identification must be applied to the delivery note and the packaging for the parts. Packs of initial samples must only contain initial samples for a single article number and must be packaged separately. This means they cannot be supplied in one package together with series parts. The delivery note must be applied to the outside of the packaging.

3.5.9 Labelling initial samples

Packs of initial sample parts must be labelled with an initial sample sticker that contains the following information as a minimum:

Vendor name
Article number
Index status
Number of sample parts
Addressee (responsible vendor manager)

Measured or inspected parts contained in the package must be clearly labelled as such, on both sides if necessary (for larger or symmetrical parts), to prevent confusion with parts intended for trial installations. For multi-impression moulds, each cavity must be labelled.

4 Safeguarding delivery reliability in series production

4.1 Series-production delivery

The vendor must ensure that production process and product approval (PPA) is provided by PFISTERER. Without exception, the vendor is only permitted to supply PFISTERER with products that are free of faults.

In order to assess quality performance in series production, the vendor must provide the appropriate data, information and experience in continuous product improvement and production optimisation.

4.2 Logistical requirements

4.2.1 General packaging and shipping requirements

The vendor's general packaging and shipping regulations in their valid version apply. Alternatively, specially defined packaging regulations apply.

4.3 Production and inspection equipment provided

If PFISTERER supplies the vendor with production and inspection equipment, loading equipment or other equipment as part of the delivery order, the vendor must include these in its management system in the same way as its own production and inspection equipment.

For packaging that is in regular circulation, the vendor maintains an empty container account with a stock level that must be agreed on a regular basis with PFISTERER.

4.4 Deviation of dimension/ special release

4.4.1 Faulty products that the vendor believes are suitable for their intended use.

If, before supplying parts to PFISTERER, the vendor finds that the manufactured product does not meet the requirements defined in the drawings/specifications, but in the vendor's reasonable estimation they appear to be suitable for their intended use by PFISTERER, and the vendor intends to supply these products to PFISTERER, a written application for exemption/special release must be submitted to the responsible vendor manager using the form before the products are shipped.

Following receipt of an application for exemption/special release, PFISTERER checks whether the production errors or the deviations from the required conditions are likely to compromise quality and whether the continued use of such a product is possible and, if PFISTERER believes this to be the case, releases the products for delivery from the vendor with a written declaration. The vendor must label the appropriately reworked products on delivery with the deviation/special release approved by PFISTERER. The application for exemption/special release represents an exception that is limited in both time and quantity, and does not release the vendor from its obligation to analyse and rectify the cause of the deviation. Every application for exemption/special release that is submitted must contain a written 8D report in which the vendor describes the solution to the problem and verifies that the causes have been rectified.

Every application for special release is charged to the vendor at a cost of €500 regardless of the result of the inspection. For non-compliant supplied parts, the vendor will provide PFISTERER with a credit memo of 80% of the normal part price. PFISTERER will invoice the costs of checking and processing the special release to the vendor.

4.4.2 Faulty products that the vendor wishes to rework before delivery

If, during the production process or final inspection, the vendor identifies faulty products that in the vendor's estimation can be reworked into an acceptable condition, the vendor must notify the responsible PFISTERER vendor manager in writing of the rework, unless provision for this has already been made and qualified in the series production process, specifying details of the type and scope of rework procedure and using the application for exemption/special release form. The affected products are only permitted to be reworked following prior release from the responsible PFISTERER vendor manager. The vendor must label the appropriately reworked products on delivery with the application for exemption/special release approved by PFISTERER.

4.5 Change management/PCN (Product Change Notification)

4.5.1 Changes to parts

Changes to parts may have consequences that cannot be foreseen by the vendor. The particular usage case for purchased parts in the scope of application at PFISTERER means that features that may not be significant to laypersons can lead to disruptive electrical discharge with a risk to life and limb. For this reason, change management at PFISTERER is subject to a special duty of care.

PFISTERER has therefore defined which changes to parts or processes require notification, or must be approved by PFISTERER.

Changes that do not require notification

- Personnel changes
- Changes to process parameters within a defined process window in accordance with process release
- Changes related to maintenance (spare parts)
- Additional quality inspections, e.g. process control (outgoing goods inspection)
- Additional visual inspections due to new faults (faults not yet listed in the fault catalogue)

Changes that require notification

- Changes to machinery/equipment/production systems/inspection equipment of the same type, output, etc.
- Replacement of machinery with machinery of a better and more powerful type

Changes that require approval

- Changes to machinery/equipment/production systems/inspection equipment with potential impact on product quality
- Changes to process parameters with potential impact on product quality
- Changes to inspection parameters and methods
- Changes to production sites
- Changes to (raw) materials and to material vendor/service provider
- Changes to the process sequence (process flow) incl. inspection stages

This requirement must be observed in all cases. Due to the specific use of parts at PFISTERER, this is required to protect against claims for recourse, which may also have a legal effect on sub-vendors.

4.5.2 Changes to parts at vendor request

Changes to standard parts may be required for technical or other reasons. In all cases, these changes must be approved by the parts manager at PFISTERER before they are supplied to PFISTERER. PFISTERER has defined a change process for this purpose that must be observed.

The vendor must submit an application for a change request using the Product Change Notification (PCN) form before implementing the change. The vendor is only permitted to implement the change once it has been approved.

Approved changes to parts must be submitted to the PFISTERER vendor manager through a re-sampling process. Changed parts are only permitted to be supplied after the approval has been granted.

4.5.3 Changes to parts at request of PFISTERER

PFISTERER processes may also make changes to parts necessary. In general, the request is submitted in the form of a changed part drawing. The vendor then has the opportunity to assess the change and submit an updated quotation.

However, it may be necessary in urgent and exceptional cases to implement changes immediately. In these cases, written release from the product manager at PFISTERER Technology and PFISTERER Purchasing is sufficient. The delivery of changed parts must be labelled accordingly and the PFISTERER vendor manager must also be notified accordingly.

4.5.4 Product lifecycle

If problems occur and a link to product changes needs to be established, the vendor must maintain a list of all product- and process-related changes with reference to the relevant delivery of parts. PFISTERER recommends a product lifecycle format for this purpose.

4.6 Repair orders

In the event of a defect that falls under the responsibility of PFISTERER, the vendor will consider a repair. Before ordering a repair by the vendor, a quotation will be requested. If the repair is commercially viable, PFISTERER will submit a repair order. The affected parts will be sent to the vendor with the order. The return delivery of purchased parts must be clearly identified and prior information must be sent to the client. In each case, PFISTERER will check that requirements have been met before a repaired part can enter the production process.

4.7 Complaints on the basis of quality defects

4.7.1 Complaints on the basis of quality defects

In the event of a quality defect in the supplied products, PFISTERER will inform the vendor of the matter immediately using a complaint form (defect report). PFISTERER will make reference to the accrual of costs. PFISTERER expects that vendors will confirm receipt of a complaint immediately, but no later than after three working days, by sending a confirmation of receipt to the sender. Faulty parts will be removed from the production process so that they are not processed any further. PFISTERER will determine the following process, taking into account the critical nature of the defect, the affected quantity and the expected commercial impact (e.g. risk of production downtime, losses for PFISTERER customers).

The following scenarios are possible:

- The faulty parts are collected by PFISTERER and returned to the vendor in accordance with internal procedures.
- The stock held by PFISTERER is returned to the vendor in order to remove faulty parts.
- ■ The vendor is requested to monitor the stock at PFISTERER in order to guarantee that fault-free parts are supplied. This may be done by sending employees of the vendor or by commissioning a service provider approved by PFISTERER (see 4.7.6).
- If there is a risk of production downtime, PFISTERER reserves the right to sort the faulty parts itself or to rework the defect in order to avoid production downtime. The vendor will be informed of this as soon as possible.

The decision regarding the process will be coordinated with the vendor. In all cases, the priority is to supply the PFISTERER production process and PFISTERER customers will fault-free parts. Each possible response will be considered carefully, taking into account the work involved and the costs incurred. The costs incurred will be assigned on a costs-by-cause principle.

4.7.2 Returning faulty parts/parts for reworking

PFISTERER actively returns parts (parts for reworking/samples/etc.) within three (3) working days.

In individual cases, parts that are critical to scheduling will be actively shipped. Complaint samples (NOK parts for quality notification) will not be automatically returned, up to a value of €50.

If the vendor would like the parts to be returned for the purposes of assessment or fault analysis, the vendor must request them from the vendor manager. On the basis of the fault pattern, the vendor manager may also decide to return the parts for analysis.

4.7.3 Processing of PFISTERER complaints by the vendor

If vendors supply defective deliveries, PFISTERER requests that they follow a structured problem-solving process in the form of an 8D report.

PFISTERER provides appropriate forms in its download portal. Vendors can also use their own forms as long as their content is the same as the PFISTERER template. When processing an 8D report, PFISTERER applies the following deadlines, depending on the priority (“high” or “standard”) of the complaint:

Report	Contents	Response time	
		Priority hoch	Priority Standard
0	Confirmation of receipt	24h	
3D	Immediate measures	36h	5d
4D	Root-cause analysis	48h*	
6D	Evidence of effective corrective measures	10d	
8D	Final report	15d	15d

The processing of complaints is assessed in terms of content and deadline adherence and this assessment is part of the annual vendor assessment.

By processing complaints through an 8D report, PFISTERER is pursuing the following objectives:

- Structured approach to systematic analysis and resolution of complaints, and avoidance of future complaints.
- Repeat errors are avoided through long-term implementation of corrective and preventive measures.
- The actual cause is identified and documented.
- PFISTERER must be informed about the status of the process.
- Documentation should be drawn up and archived in relation to the error process, and this documentation should be traceable and available for analysis.

4.7.4 Product labelling and traceability

The purpose of product labelling is to enable traceability in the event that a defect is identified, so that the quantities of potentially affected products can be localised in the most efficient way possible. The vendor must label the products themselves and the smallest packing unit so that the relevant products or batches can be uniquely traced back to their time and place of production, to the process parameters, to the inspection results and certificates, and to the batches of (raw) materials used. If, for technical reasons, it is not possible for the vendor to label the products, or if this appears to be inappropriate or would involve unreasonable costs, the vendor must inform PFISTERER, specifying reasons. The label must be

permanently legible. With regard to the labelling of products, the requirements specified in the drawings and technical delivery conditions, where defined, also apply. In order to support the risk-reduction measures on the part of PFISTERER, the vendor – in the event a fault is identified by PFISTERER or by the vendor itself – must trace the products that have already been delivered or are currently in transit that are highly likely to be affected by similar or identical faults on the basis of practical considerations (e.g. same batch of basic materials, same production batch), and will supply this information to PFISTERER in an appropriately structured format. PFISTERER vendors are advised – in their own interests – to define an appropriate tracking process in order to prevent unnecessary sorting and inspection costs.

4.7.5 Rules relating to reworking and sorting inspections

If defects are found in the subsequent value-added process (parts processing, assembly) that can be corrected if the parts are reworked or can be separated out to a significant degree, the following rule applies:

- a) PFISTERER informs the vendor immediately on discovery of the defect. At this stage, the possible options for ensuring a supply of parts to PFISTERER assembly line are highlighted.
- b) The possible options that PFISTERER can present to the vendor may include:
 - The vendor sends employees to PFISTERER who sort the affected stocks or rework parts to ensure the assembly lines are supplied with parts that meet specifications.
 - The vendor commissions a service provider that sorts or reworks the parts on behalf of and under the responsibility of the vendor.
 - The vendor commissions PFISTERER to perform the necessary sorting or reworking at the vendor's expense or to arrange for this to be performed. In this case, adoption of the costs incurred must be confirmed by the vendor in writing.

PFISTERER will carefully consider the possible options. The priority is to ensure that PFISTERER assembly lines are supplied with parts so that any claims for recourse on the part of PFISTERER customers are minimised.

The vendor is responsible for commissioning external service providers. PFISTERER can adopt a supporting role in this regard. However, this requires the vendor to submit a written cost absorption confirmation. The vendor is responsible in all cases for defining the scope of sorting and reworking. The vendor is also responsible for coordinating the necessary work with PFISTERER (generally through an application for exemption/special release). Any other claims on the part of PFISTERER due to defects in the supplied products remain unaffected.

4.7.6 Labelling controlled or reworked parts

If faulty parts are returned to the vendor for reworking or sorting, it must be ensured that these parts do not become mixed with other batches. These parts must be clearly labelled as "blocked" and stored in a quarantine warehouse until they are reworked. The reworking must be coordinated with PFISTERER (date, process, inspection, risk assessment, etc.). Reworked or sorted parts must be labelled following consultation with PFISTERER. Depending on the assembly situation, the labelling can be applied at PFISTERER using a stamp, sticker or coloured marking on each part, but in all cases it must be applied to each delivery container.

If parts are redelivered, reworked parts must be kept separate from standard parts. In addition, a log of the rework must be enclosed, together with an inspection log if agreed. The delivery note must also contain the following information, which must be clearly legible:

**„Reworked parts for complaint no. xxxx.
Please inform Mr/Ms**

PFISTERER SCM.SD.” “

This will ensure that the parts can be quickly and uniquely identified.

4.7.7 Labelling the initial delivery of fault-free parts

After processing a complaint, the vendor must label the first standard delivery of fault-free products on the individual containers. This label must be clearly legible on a sticker or tag. The label must contain the following information as a minimum:

- Initial standard delivery in accordance with complaint no. _____
- Parts inspected and free of _____ (reason for complaint)
- Date and name in block capitals
- Signature of inspector

5 | Continuous improvement process (CIP)

5.1 Vendor assessment

In order to assess vendors, objective figures from logistics, procurement and quality management are calculated. There is also a subjective assessment from these areas in which the collaboration with the relevant contact persons is acknowledged.

All of the assessments are combined with different weightings in an overall score.

The objective assessment of the vendors includes the following criteria:

- Deadline adherence/quantity adherence
- Quality rate (number of complaints/number of incoming goods)
- Certification status of the quality, environmental and occupational safety management system

5.2 Business reviews

Once a year, a coordination meeting is held with selected strategic vendors at management level, in which the business relationship and vendor performance are discussed. As a result of this meeting, objectives are agreed with measures, deadlines and responsible persons.

5.3 Objective agreement and controlling

5.3.1 Quality objectives – number of complaints

Notwithstanding the vendor's duty to supply parts that are free of faults, the vendor will pursue a continuous improvement process (CIP) for the systematic detection and correction of error sources, for the purpose of achieving a zero-error objective. As part of the CIP, the vendor will take the necessary measures in order to achieve a reduction in the rate of complaints year on year.

The target levels will be agreed in writing between the vendor and PFISTERER on an annual basis, or will be specified as blanket figures by PFISTERER for each product group. The vendor can request the applicable target levels from the responsible PFISTERER vendor manager and adapt them to the specific situation following joint discussion. The objectives should be challenging but realistic.

6 Abbreviations

5.3.2 Controlling target levels

Regular measurement of the actual quality situations (complaint rate) in comparison to the target values is the responsibility of the vendor, regardless of any measurements by PFISTERER. The vendor will set up a suitable monitoring system for this purpose. If the quality targets are not achieved, the vendor must define and implement appropriate measures. PFISTERER is authorised to view these measures and to request amendments if necessary. In the event that

- a. the agreed quality targets are repeatedly exceeded,
- b. repeat errors cause process disruption at PFISTERER,
- c. disruptive variables impact customers of PFISTERER, or have a high commercial significance or safety relevance,
- d. there is any other significant deterioration in quality performance,

particularly if these impact customers of PFISTERER, PFISTERER will invite the vendor to review and assess the quality performance and will request additional measures. These measures are recorded in writing by the vendor in the form of an action plan and must be processed on time. It is the responsibility of the vendor to supplement this action plan with other measures as necessary in order to achieve the agreed targets.

5.4 Quality improvement projects

Continuous improvement is a component of the quality strategy for every vendor. PFISTERER expects the vendor to be actively involved in the continuous improvement of procedures, processes and products, with the objective of ensuring permanent improvement in the overall system. In the event that quality targets are not achieved, or if there are drops in quality, repeat errors or high quality costs (disruption costs), PFISTERER can request that a quality improvement project be implemented.

ABBREVIATION	DESCRIPTION
QMS	Quality management system
VDA	Verband der Automobilindustrie (German Association of the Automotive Industry)
PPA	Production process and product approval
ISIR	Initial sample inspection report
PSW	Part submission warrant, see production part approval process
QAA	Quality assurance agreement
SPC	Statistical process control
MCA	Machine capability analysis
PCA	Process capability analysis
PCN	Product change notification
PPAP	Production part approval process
Cm/Cp	Machine/process capability index (tolerance in relation to spread)
Cmk/Cpk	Critical machine/process capability index (tolerance in relation to spread considering the situation)
AQP	Advanced quality planning
APQP	Advanced product quality planning; continuous project management for product and quality planning
FMEA	Failure mode and effects analysis
IMDS	International Material Data System
	Dokumente mit besonderer Archivierung
DRSA	Documents requiring special archiving
5 Whys	5 Whys method; quality management method for determining cause and effect.
Ishikawa	The cause-and-effect diagram is a type of diagram that shows causality relationships
CIP	Continuous improvement process
VDA 6.3	Verband der Automobilindustrie, Volume 6, Part 3, Process Audit

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