QUALITY AGREEMENT – SUPPLIER QUALITY GUIDELINES

Contents

1 Introduction

Balluff has a unique quality standard. We call it Balluff quality: A high standard that exceeds applicable standards and to which all of our products and solutions conform.
At Balluff, quality always has four dimensions: Sales quality, logistics quality, product quality and service quality. It is by aiming to excel in these areas that we create Balluff's outstanding quality.
The benchmark for us is the customer's demand for quality, and it is what we base all of our actions on. Each Balluff employee looks for the best solution for the customer, within the framework of the partnership and the interests of the company. In order to achieve this, we participate in numerous standardization committees and play a pioneering role in driving advancements such as ISO 9001.
Guaranteeing zero-defect quality for all supplies is an absolute prerequisite for Balluff. This can only be achieved, maintained and secured through the joint efforts of Balluff and our Suppliers.

2 Scope

2.1.1 This Quality Agreement (hereinafter referred to as 'Quality Agreement') states Balluff's minimum requirements with respect to quality, environment and safety for Suppliers of production goods and/or services to Balluff. It also refers to international standards which are necessary to achieve common goals.

2.1.2 The Quality Agreement also applies for the benefit of all affiliated companies of Balluff as well to Parts/Components and services delivered to Balluff Manufacturing Service Partners.

2.1.3 The official business language of Balluff is English. All Supplier documentation submitted to Balluff should be issued in English, unless otherwise agreed.

2.1.4 Any changes to individual provisions of this Quality Agreement shall be negotiated and set out by agreement in a written addendum.

2.1.5 This Quality Agreement shall become effective upon signature by both Parties ("Effective Date") and be concluded for an indefinite period of time. It may be terminated in writing by either party for the first time after two years by giving 6 months' prior written notice to the end of the calendar year. Notwithstanding the foregoing either party may terminate this Quality Agreement for cause with immediate effect.

2.1.6 This Quality Agreement shall be governed by the laws of the Federal Republic of Germany without giving effect to its conflict of law provisions and under exclusion of the UN Convention on the International Sale of Goods (CISG). The place of jurisdiction shall be Stuttgart, Germany.

2.1.7 To the extent any provision of this Quality Agreement should be or become void in whole or in part, this shall be without prejudice to the validity of the remainder of the respective Quality Agreement. The Parties agree to replace the void provision immediately by a valid provision which corresponds as far as possible to the economic effect of the void provision in a legally sound manner. The same applies if a provision is unenforceable or the Quality Agreement indicates a gap.

2.1.8 Suppliers are obligated to use the future internet portal for exchange of data such as Supplier Evaluation, APQP, PPAP, traceability data, complaint handling, Part/Component confirmations, audit findings as well as certificates.

2.1.9 In case of any contradiction(s) between the provisions of this Agreement and any other agreement(s)/document(s) which may have been agreed to with the respective Supplier, the order of precedence of the documents is as follows:

1. Frame Supply Agreement
2. This Quality Agreement
3. Tool Agreement

2.1.10 The Parties acknowledge and agree that this Quality Agreement and related documents entered into in connection with this Quality Agreement may be executed by simple electronic signature (e.g. DocuSign). Such counterpart shall have the same force and effect as an original signature to the extent permitted by applicable law.

3 General Requirements

3.1 Management System

3.1.1 Existing and potential Suppliers to Balluff must operate within a comprehensive quality system. As a minimum, Suppliers shall have implemented a quality management system in compliance with the ISO 9001 standard (in the respective current version), for Parts/Components which in accordance with their intended use are qualified as functional safety components in the sense of DIN EN 61508-1, in the current valid revision, issued by an accredited certification body bearing the accreditation mark of an IAF MLA member.

3.1.2 Sustainability matters to Balluff and has always been one of our core values, as demonstrated by our slogan: “In all that we say and do, we are already thinking ahead for tomorrow”. The implementation of a certified environmental management system as per the ISO 14001 standard (in the respective current version), issued by an accredited certification body in compliance with IAF rules is preferred. In the event that the Supplier is not certified in accordance with ISO 14001, the Supplier shall make its best efforts to comply with ISO 14001 to the greatest extent possible.

3.1.3 Balluff welcomes the introduction of a work and health protection system based on or in accordance with the requirements of ISO 45001. Suppliers are encouraged to earn third party registration for the abovementioned standards.

3.1.4 Suppliers must inform Balluff about all relevant changes to their ISO 9001/ISO 14001 certifications, in particular any changes to their certificate (e.g. discontinuation) no later than two weeks following notice by the respective certifying body.

3.1.5 All laboratory facilities shall have a defined laboratory scope that includes the capability to perform the required inspection, test or calibration. The laboratory shall be accredited to ISO/IEC 17025 or national equivalent.

3.1.6 The Supplier shall immediately check whether the documents submitted by Balluff are incorrect, different in revision, unclear or incomplete. If the Supplier recognizes that this is the case, the Supplier shall notify Balluff in writing immediately.

3.1.7 In addition, the Supplier warrants that all products conform to and match the drawings, specifications and samples or other descriptions supplied, specified or approved by Balluff.

3.2 Sub-Supplier Control

3.2.1 If the Supplier places orders with sub-Suppliers as part of fulfilling its respective obligations toward Balluff, the Supplier is also fully responsible for the quality of the product, tools services and processes procured, and shall implement the applicable requirements of this Quality Agreement at its sub-Suppliers regardless of whether such sub-Suppliers are predefined by Balluff or not. The Supplier shall at all times ensure that the duties towards Balluff laid down in this Quality Agreement are fulfilled without restriction and that the rights of Balluff are in no way restricted or endangered by the involvement of third parties. The responsibility of the Supplier shall be unaffected by the fact that third parties are involved.

3.2.2 The Supplier shall inform Balluff about all sub-Suppliers for Parts/Components and processes (e.g. plating, etc.) used for the product. Dual sourcing shall be mutually agreed between the Supplier and Balluff during the development phase of a product.

3.2.3 The requirements set out in this Quality Agreement shall also apply to the QM system that the Supplier shall set up with its sub-Suppliers.

3.3 Audits

3.3.1 Balluff, Customers or, at Balluff’s request, a third party representative, shall be entitled to visit any of the Supplier’s product-related locations to conduct audits on the basis of the ISO 9001 and VDA 6.3 standards as well as EX and FCM. This right shall also include audits at the Supplier’s sub-Suppliers’ locations.

3.3.2 As standard, the audits will be performed in accordance with VDA 6.3. A scoring and audit report will be provided by the respective auditor at the end of an audit during the common wrap-up discussion with the participants. The audit report and the necessary measures resulting from the audit shall be agreed upon by the Supplier and Balluff in an action plan.

The tracking and follow-up for the realization of the action plan will be performed by the Balluff auditor.

3.3.3 Each year, the Supplier shall perform a self-audit in accordance with the VDA 6.3 standard or similar for all product lines including subcontracted processes. Balluff shall be informed of all audit results with a “B” or lower ranking. At Balluff’s request, the Supplier shall provide all audit results including documentation and action plans.

3.4 Packaging

3.4.1 The Supplier shall ensure that products, when completed, are packaged in such a manner as to provide adequate protection against damp, dirt, dust, damage, corrosion and contamination. The Supplier shall maintain a system that ensures adequate control of the packaging and shipping phases.
The use of commercial transport practices does not relieve the Supplier of the responsibility for properly controlling his packaging and shipping functions in a manner that ensures acceptance at the delivery point.

3.4.2 Labeling must be done according to Balluff's receiving site requirements. At a minimum, the Supplier Identification, Parts/Components Number, Engineering Level, Quantity and Batch/Lot Number must be clearly legible in both human readable and bar coded form on the Parts/Components packaging label. A 2-D code (PDF417) for package label description shall be used if not otherwise agreed with the receiving location.

3.4.3 For brand and private label products, the CD-T 1017 Standard Label for Packages applies.

3.4.4 In case specific regulations apply to a certain product, such specific packaging regulations shall prevail.

3.5 Identification and Traceability

3.5.1 Suppliers are obligated to utilize and ship Parts/Components on a “first in – first out” basis.

3.5.2 Suppliers shall maintain a product change history to keep track of all changes to the product delivered to Balluff.

3.5.3 Suppliers shall maintain an appropriate traceability system. The aim of traceability shall be to minimize the impact and consequences of any quality concerns that might arise.
Forward Trace
Forward Trace shall be the provision of any information required to identify suspicious components already delivered in order to minimize the quantity of non-conforming components at Balluff as early as possible.
Backward Trace
Backward Trace shall be the provision of any information required to identify suspicious source Parts/Components and origin at the Supplier.
Traceability Requirements for electronic components
For packaged Parts/Components a maximum of 2 trace codes per packing unit (reel, tray, tube, etc) shall be required.
For components without sufficient marking possibilities on the product itself (bare die, small package size, etc.) the traceability data shall be placed on the packaging. One lot per packing unit shall be required with one exception: In order to facilitate deliveries of full packing units, it shall be allowed to use the subsequent lot to complete the packing units (e.g. reel).

3.5.4 The Supplier’s traceability system shall ensure that its final components and subcomponents utilized in the product can be traced back to the production order as a minimum. Optional traceability down to the manufacturing date, shift, equipment, tool number and the respective inspection/conformity results is welcome. Based on internal risk, assessment lot sizes shall be defined in such a way as to minimize the internal as well as the external risk.

3.5.5 Where applicable, the Supplier shall assign a unique Serial Number to each product.

3.6 Record Retention

3.6.1 The Supplier shall define and maintain retention periods for documents and records (Production Part Approval Process (PPAP) packages, annual layout and validation records,

tooling records, traceability records, engineering records, corrective action records, quality performance records and inspection and test results) as well as reference samples.

3.6.2 If no specific retention period is defined by Balluff, a minimum period of 10 years after EOP (End of Production) and tooling scrap authorization has been granted shall apply to all documents and records. For EX-, safety and food contact Parts/Components the retention period shall be 15 years. Records shall be made available to Balluff upon request.

3.6.3 The above time periods are considered “minimum”. All retention times shall meet or exceed the above requirements as well as any governmental requirements.

3.7 Incoming Inspection

3.7.1 Balluff will only perform an incoming goods inspection with regard to discrepancies in the identity and quantity of components that can be identified externally in terms of compliance with the delivery documents. Furthermore, the shipment shall be inspected for externally visible damage caused during transportation. Balluff shall not be obligated to carry out a more detailed incoming inspection. Balluff will report defects of this kind immediately in writing. In addition, Balluff will report defects as soon as they are determined in the normal course of business. The Supplier hereby waives the objection of delayed reporting of a defect.

3.7.2 Should Balluff detect deficiencies during random sampling, Balluff shall be entitled to return the entire shipment or, at its discretion, to inspect the entire shipment and invoice the Supplier after consultation on the resulting inspection costs.

3.8 Material certificates

3.8.1 Raw material Suppliers shall provide a material certificate to Balluff for every batch upon request. The Supplier should have installed a system capable of retrieving and submitting the requested Certificate of Conformity within 24 hours of Balluff's request.

3.9 Business Continuity Plan

3.9.1 Suppliers are obligated to prepare a business continuity plan for all plants/offices with defined responsibilities to ensure smooth supplies to Balluff even in the event of such disturbances.

3.9.2 The business continuity plan shall as a minimum address interruption due to Parts/Components supply, tool/equipment/machinery breakage, transportation, computer/network disruptions, labor shortage or sub-Supplier issues.

3.9.3 The Supplier must immediately inform Balluff during any period of actual interruption.

4 Lifecycle Management - Development Phase

4.1.1 During the product and process development phase, the Supplier is expected to mitigate risk by utilizing risk rating and risk management tools. The goal is to ensure products complying with the specification and produced with capable processes over the whole Lifecycle.

4.2 Advanced Product Quality Planning (APQP)

4.2.1 Suppliers are expected to implement Advanced Product Quality Planning (APQP, or any comparable project management methods: e.g. RGA) activities to communicate and ensure timely, high-quality product development to meet applicable customer requirements. Suppliers shall maintain APQP based on the latest Balluff requirements. APQP status reports or output documents for this process may be requested by Balluff.

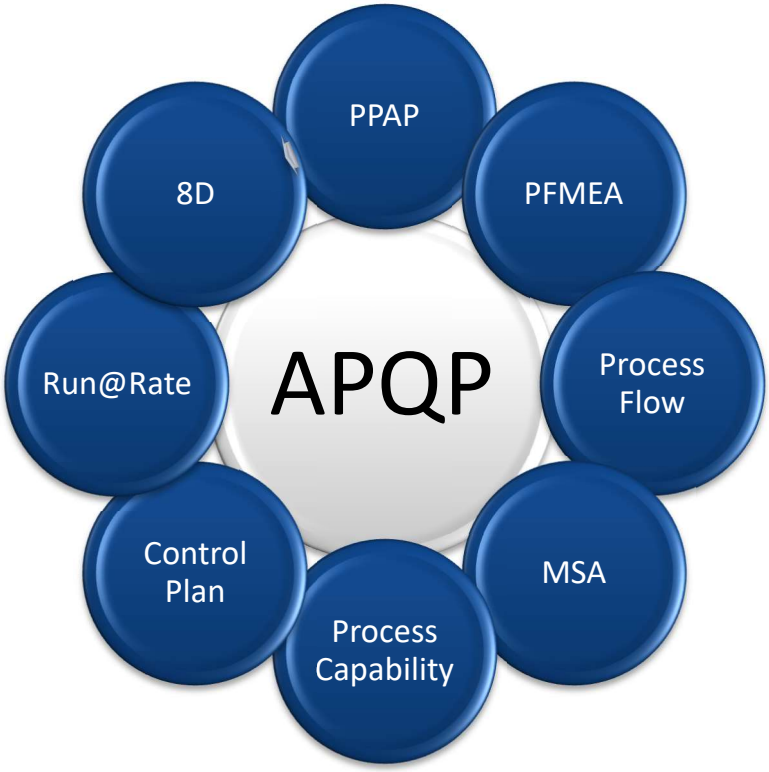
Important elements of the APQP are, among others

1. Feasibility Phase (feasibility study, development plan/design release, check for completeness of documentation)

2. Product Development Phase (design review, DFMEA, risk analysis, tooling requirements, qualification plan)

3. Process Development Phase (lessons learned implementation, process-flow chart, PFMEA, capacity review, test concept, control plan, supply chain map, shipping requirements)

4. Process/Product validation Phase (qualification results, process capability, MSA, control plan, capacity check, audit, safe launch concept, PPAP)



4.2.2 Upon receipt, all technical documents which are necessary for quotations and/or supporting series development, such as specifications, drawings, Parts/Components lists, files and CAD data shall be reviewed by the Supplier for completeness and consistency in general. In case of ambiguities or incorrect information/data, Balluff shall be informed immediately.

4.3 Feasibility Commitment

4.3.1 With each offer to Balluff, the Supplier shall submit a detailed feasibility analysis/commitment with regard to the project time plan, quality targets and technical requirements. The feasibility commitment will be reviewed as part of the Balluff Sourcing Committee Meeting.

4.3.2 By submitting the offer, the Supplier confirms the manufacturability under said conditions and assumes full responsibility for the quality of the product.

4.4 FMEA

4.4.1 A Process FMEA is mandatory. Design FMEAs are also required in cases where products are developed for Balluff.
The Supplier shall conduct an FMEA before the design validation in accordance with accepted technical standards.
The FMEA shall:

- recognize and evaluate the potential failure of a design/process and the effects of that failure,
- identify actions that could eliminate or reduce the chance of the potential failure occurring, and
- document the entire process.

4.4.2 All identified potential failure modes shall be considered in order to improve the product/ process. The process FMEA shall be delivered to Balluff and the design FMEA shall be made available to Balluff for inspection.

4.5 Measurement System Analysis

4.5.1 A Measurement System Analysis must be verified for all planned measuring equipment indicated in the Control Plan. The entire measuring process and the tolerance of characteristics to be measured must be taken into consideration.

4.5.2 The supplier must draw up an MSA study in relation to the capability of measuring instruments and complete measurement systems in terms of accuracy, repeatability, reproducibility, stability and linearity.

4.6 Special Characteristics

4.6.1 Special Characteristics are any product characteristics defined by Balluff or Customers or manufacturing process parameters identified by the Supplier, including government and safety regulations, which have a substantial influence on:

- manufacturability at Balluff
- manufacturability at the Customer
- usage and operation of the product by the Customer
- compliance with applicable regulations
- compliance with applicable safety requirements

4.6.2 Special Characteristics are further categorized into:

- Characteristics not relating to safety or legal considerations
- Characteristics with safety or legal considerations

4.6.3 In the development phases, the Supplier must consider any special characteristics identified by Balluff. If no special product characteristics are identified by Balluff, the Supplier must identify any special characteristics to be considered critical. The special characteristics must be highlighted in the appropriate documents, e.g. the FMEA, control plan, drawings, etc.

4.6.4 Special product characteristics should be considered as part of a systematic failure avoidance process (Poka Yoke), 100% inspection, statistical process control (SPC), process capability monitoring, and Measurement System Analysis (MSA) for testing and measurement equipment.

4.7 Safe Launch Concept (SLC)

4.7.1 Initiated by the Supplier or triggered by Balluff, a SLC shall be implemented based on the product and process maturity. The scale of the SLC shall be defined during the APQP process based on the risk assessment/FMEA. The SLC includes special verifications – additional frequent sampling, measurement, control charts, capability studies, visual inspection etc. - performed by the Supplier for a defined timeframe or quantity.

4.7.2 The Supplier shall generate a Control Plan including Safe Launch Activities prior to the start of series production and shall make it available to Balluff prior to the start of series production.

4.7.3 Suppliers are obligated to submit inspection data to Balluff's plant. This should include variable measurement data where applicable.

4.8 Pre-Production and Sample Parts/Components Requirements

4.8.1 Suppliers shall clearly label “pre-production Parts/Components” or “sample Parts/Components” to ensure that Balluff's receiving site does not mix such Parts/Components with regular production Parts/Components. Suppliers are also expected

to work closely with Balluff plant Scheduling and Parts/Components Control personnel to minimize unnecessary obsolescence.

4.9 Qualification

4.9.1 The Supplier shall maintain a qualification system for processes and components which is capable of demonstrating the requirements as defined in the respective Balluff specification(s).

4.10 Manufacturing Process Review

4.10.1 The Supplier is responsible for carrying out reviews/audits in his area of responsibility. They must be scheduled in such a way that the results are available on the specified release days (milestones) of the project concerned, if any. An assessment of a Supplier's manufacturing process may be conducted before and after a specific part approval at the Supplier's facility. This assessment may be specified by Balluff or its Customer (e.g. Run@Rate or VDA 6.3 Audit).

4.11 PPAP - Production Process and Product Approval

4.11.1 Prior to delivery of the first serial Parts/Components, the Supplier shall perform an internal approval process for the production process and the product. PPAP shall determine whether all Balluff engineering design requirements, specification requirements and process requirements are met by the Supplier and that the process has the defined capability to produce Parts/Components meeting these requirements.

4.11.2 The Supplier shall submit PPAP according Balluff requirements in alignment with PPAP Level 3, if not otherwise agreed. Dual sourcing information shall be part of the PPAP package.

4.11.3 PPAP sample Parts/Components shall be clearly labelled as such and accompanied by completed dimensional results, Parts/Components test results, and performance test results reports. Specific instructions, in addition to these stated requirements, may be agreed.

4.11.4 The Product and Process is released after a PSW has been countersigned by Balluff.

4.11.5 The Supplier's components shall not be accepted by Balluff for series production unless a product release has been issued by Balluff. Any production shipments received by Balluff prior to obtaining this approval will be rejected. The Parts/Components release shall only be issued if the Supplier's Parts/Components, process line and manufacturing site have been approved for series delivery by Balluff.

5 Lifecycle Management – Mass Production

5.1.1 The Supplier shall continuously monitor process capability for all special characteristics, as defined in section 4.6. In case of an identified quality setback, the Supplier shall identify the root cause and implement corrective actions.

5.2 Supplier Performance Indicators and Evaluation

5.2.1 Balluff performs a Supplier evaluation in several categories based on key performance indicators. The global performance of the Supplier will be evaluated on a regular basis for purchasing, quality, logistics and technology elements, and serves to determine Balluff's strategic supply base.

5.2.2 Based on the results of this evaluation, the Supplier shall define and implement appropriate corrective actions. For selected Suppliers, Balluff will initiate a discussion to define improvement actions with targets. If the quality results fail to meet the defined targets, Balluff will start the escalation process as set out in section 5.4 .

5.2.3 Suppliers are obligated to monitor their performance on the Balluff Supplier Portal.

5.3 Shelf Life and Special Storage Requirements

5.3.1 The Supplier shall define shelf life of Parts/Components, solder paste, adhesives, etc. and/or special storage requirements (e.g. max. temperature for solder paste), where applicable, to ensure that they can be processed to achieve the required results. Any sub-

Suppliers' recommendations regarding component shelf life and storage shall be applied to by the Supplier. The Suppliers shall have a system in place to trace shelf life.

5.4 Escalation Process

An escalation process shall be launched in the event of unsatisfactory Supplier performance (e.g. ppm, number of incidents, 8D, lead-time, audit results, logistical performance).

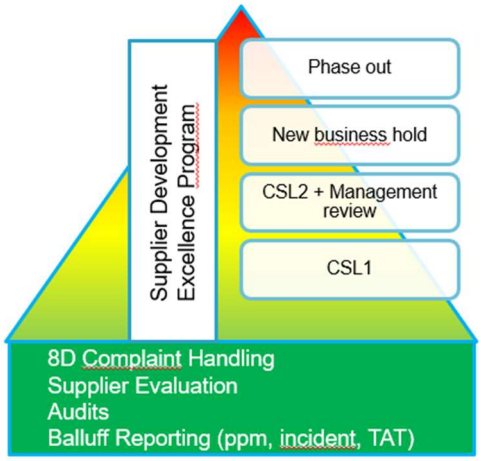
5.4.1 Upon request, the Supplier shall arrange a visit or a meeting with Balluff within 48 hours following receipt of any such complaint.

Incident escalation

5.4.2 Based on the 8D report or an expert meeting, the Supplier may be set to CSL1 in order to prevent re-occurrence of the same failure.

5.4.3 In case of CSL1, the Supplier shall apply additional/redundant testing to prevent shipping of nonconforming components to Balluff. The testing process shall include 100% screening. Screening shall apply to all components at the Supplier's location, in transit, or at Balluff's plant. The Supplier shall bear all costs relating to these containment actions and report the status and results to Balluff.

5.4.4 CSL2 may be applied independently from CSL1 at Balluff's request. The application of CSL2 shall be mandatory if nonconforming Parts/Components are repeatedly delivered during CSL1. In case of CSL2 the Supplier shall hire an independent third party to perform the containment actions and to support the related 8D process.



5.4.5 Materials shipped under CSL1 or CSL2 shall be marked with a mutually agreed identification method.

5.4.6 Exit criteria will be defined by Balluff when CSL1 and CSL2 are set up.

Supplier Development Excellence Program

5.4.7 Balluff reviews the performance of their Suppliers on a regular basis. If performance is unsatisfactory, Balluff will initiate a discussion about targets for improvement with the Supplier. If targets have been agreed between Balluff and the Supplier, Balluff expects proactive planning in order to achieve or exceed the targets.

5.4.8 The Supplier Development Excellence Program involves regular management meetings with the following agenda:

- Review of statistical data as ppm and failure rate over the last 12 months
- Review of pareto diagram
- Review of corrective actions based on the pareto diagram and customer complaints
- "Go and see to agree"
- Attendees: Director Supplier Development, Buyer, Director Purchasing + Senior Management from the Supplier
- Optional measures: Resident engineer, Control shipment level, Involvement of external specialist/institutes, Regular reporting of FPY, Cpk, etc.

Top Management Meeting, New Business on Hold, Phase-Out

5.4.9 If CSL1/2 fails or the Audit result is ranked B or the Supplier evaluation results are unsatisfactory, a Top Management Meeting will be organized. The outcome of the meeting may lead to the "New Business on Hold" or "Phase-Out" decision.

5.5 Process Capability and Control

5.5.1 Suppliers are obligated to meet the process capability requirements. The acceptance criterion for the process capability and machine capability is c_{pk}/c_{mk} >= 1.67. The Supplier is responsible for ensuring that control requirements are documented in the control plan and that capability indices are achieved and improved throughout production. If the required capability cannot be guaranteed, 100% testing is mandatory.

5.5.2 The Supplier is obligated to define samples ("golden" samples) to be used as reference for the manufacturing process and final Part/Component. At Balluff's request the Supplier shall provide Balluff with measurement and traceability data for special characteristics.

5.5.3 The Supplier shall inform Balluff of any deviation in the current reading of the First Pass Yield (FPY) from the average weekly FPY that exceeds ±10% for any Part/Component within two days of the deviation occurring. The Supplier shall provide information regarding the current and past FPY at Balluff's request.

5.6 Rework/Repair

5.6.1 The Supplier shall not rework/repair components without obtaining prior written approval from Balluff. Rework/repair includes all activities on components outside the continuous process flow defined in the control plan.

5.6.2 The Supplier must ensure that all Nonconforming Parts/Components are clearly labelled as such and segregated in all processes and areas of the Supplier's operation.

5.7 Deviation Approval for Parts/Components or Process Deviations

5.7.1 Balluff is entitled to refuse products that do not meet the requirements of the applicable documents, drawings and specifications. Requests for deviations on nonconforming Parts/Components shall be submitted to Balluff's receiving plant for review and approval prior to shipment.

5.7.2 Deviations shall be approved only for a specific time period or specific quantity of Parts/Components. Permanent deviations are not permitted. Delivery must not start before written approval has been issued by Balluff.

5.7.3 A deviation request shall be accompanied by a Problem Solving Report (8D). This report shall include the identification of a clean point and the manner in which Parts/Components will be identified, including how traceability will be ensured and maintained.

5.7.4 Costs incurred by Balluff as a result of non-compliant Parts/Components from the Supplier shall be borne by the Supplier, if no other agreements are expressly agreed upon in a mutually signed agreement. Approval of a deviation by Balluff shall expressly not release the Supplier from its liability for the Parts/Components.

5.7.5 **Important:** If a characteristic is affected by the intended special release with an impact on a Part/Component approval/certification (e.g. UL, ATEX, EX, FCM), the person responsible for approval must be involved in assessing the possible and permissible measures. This applies, for example, to approvals in the field of explosion protection, functional safety and FCM, as well as compliance with legal requirements. No special release is allowed, which means that the technical properties no longer comply with the specifications of the corresponding certificate and the associated technical documentation. The person responsible for approvals either agrees to the special release or documents their objection.

5.8 Production Equipment

5.8.1 All tools, machines, gauges, measuring/test equipment and all other equipment that may have an impact on the production processes shall at all times be maintained in optimal condition and accurately calibrated by the Supplier, irrespective of whether they are owned by the Supplier, Balluff or a Balluff customer. Equipment shall be stored with protection from

fire and water. Preventive and predictive maintenance shall be scheduled and each of the measures taken shall be documented.

5.8.2 The Supplier shall inform the Purchaser without undue delay
- at an early stage about extraordinary Maintenance
- about the need for additional or replacement Production Equipment
- about any waste, destruction, damage, loss or any other change to the Production Equipment

5.8.3 In case of damage requiring extraordinary Maintenance, the Supplier shall notify the Purchaser without undue delay before carrying out Maintenance or replacement of the Production Equipment.

5.8.4 Balluff is entitled to inspect and check the Tools on the Supplier's site at any time during the Supplier's usual working hours. The Supplier is obligated to provide information about the condition of the tools (actual number of shots, remaining number of shots, executed maintenance works or repairs, tool wear, etc.) in writing at least once a year.

5.9 Non-Conforming Components/Corrective Actions

5.9.1 In cases of nonconforming components, the Supplier shall have a complaint handling flow process and procedures in place that allow the Supplier to take all necessary corrective and preventive actions for all rejects or nonconforming components received by Balluff, and respond within the timeframe shown in the table below.

5.9.2 The Supplier shall use the systematic 8D analysis method with risk assessment. For each Supplier incident, an 8D report shall be submitted to Balluff. The defined containment action shall stay in place until the effectiveness of the implemented corrective action has been successfully verified. The respective reaction time period as defined in the table below ("Timetable") shall begin with the initial notification to the Supplier by Balluff that a problem exists.

5.9.3 In the Supplier's report, Balluff shall be able to determine the instance level as defined below for the incident. The instance level shall be set to "priority" in case of a potential Balluff or Customer line stoppage, reliability risk, components in safety applications and Customer returns. Upon request, the Supplier shall provide top management support in the 8D team as part of an appropriate escalation process.

5.9.4 In case of detection of deficiencies concerning Parts/Components which, in accordance with their intended use, are qualified as EX-, safety or food contact Parts/Components in accordance with DIN EN 61508-1 and/or are subject to Directive 2014/34/EU, the Supplier shall inform Balluff, within 48 hours, of the immediate actions that have been taken (8D method) to limit the damage and risk.

Timetable:

8D disciplines	**standard**	**priority**
D2: Problem Description		
D3: Immediate measure(s)	1 business day/ 24h	1 business day/ 24h
D4: Failure Cause(s)	3 business days	2 business days/ 48h
D5: Planned corrective measure(s)		
D6: Implemented corrective measure(s)	10 business days	7 business days
D7: Prevent a repeat of the failure		
D8: Closure	per agreed plan	per agreed plan

5.9.5 The Supplier shall provide Balluff with a report immediately upon receipt of the defective component.

5.9.6 Irrespective of the instance level, the Supplier shall take all necessary short-term actions (e.g. screening) at its plants, at the sub-Supplier's plants and, at Balluff's request, also at Balluff's plants, and if required at the Customer's plants. These actions shall guarantee continuous delivery of defect-free components.

5.9.7 Any arrangements with third parties for the purpose of containment actions and maintaining full production capacity of Balluff's production lines shall be the sole responsibility of the

Supplier. Balluff in general shall not be obligated to provide any personnel, resources or space for the Supplier's required containment actions.

5.9.8 The Supplier shall keep Balluff informed on a regular basis about the progress of the failure analysis process.

5.9.9 In case the Supplier's analysis concludes that an alleged nonconformity is not the Supplier's responsibility, or there is no trouble found (NTF), the Parts/Components concerned shall be sent back to the respective Balluff contact person immediately, along with all analysis results.

5.9.10 Balluff reserves the right to use 8D documentation submitted by the Supplier to create the 8D documentation for its customers.

5.9.11 Sorting/Reworking or repair in the Balluff plant can be carried out by the Supplier's own staff or by external service providers approved by Balluff. The cost of this is settled directly between the Supplier and the external service provider. The cost for sorting/rework shall be borne solely by the Supplier

5.9.12 In case of a production stoppage during a weekend or public holiday, and only for urgent Balluff customer demands caused by suspect Supplier Parts/Components, Balluff may organize sorting or reworking either directly with service providers or using its own personnel, after first informing the Supplier. Such sorting or reworking is done at the cost of the Supplier and is limited to the urgent production demand. If the Supplier also wishes to release such activities during weekends, the Supplier shall provide a contact person with 24/7 availability.

5.10 Problem Solving Methods

5.10.1 Suppliers shall hold available trained (preferably certified) personnel with the ability to quickly and permanently resolve Part/Component and process issues using data-driven problem resolution tools and techniques.

5.10.2 Problem resolution must be conducted using a defined, structured process, e.g. Is/Is Not, FTA, Six Sigma, DMAIC (Define, Measure, Analyse, Improve and Control) or any other adequate process that includes verification of the root cause and validation of the corrective action effectiveness.

5.10.3 Data-driven techniques should also be used during the process design, verification and validation phases of the APQP process in order to prevent problems with new or changing Parts/Components and processes. These data-driven tools and techniques include but are not limited to: Failure Mode and Effects Analysis (FMEA), Measurement System Analysis (MSA), Statistical Process Control (SPC), Design of Experiments (DOE), Ishikawa diagram and Taguchi Methods.

5.11 Annual Requalification

5.11.1 The Supplier shall re-qualify its Parts/Components in case of changes and regularly, at least once a year.

5.11.2 In case the Supplier does not have design responsibility, the Supplier shall perform a layout inspection, verifying all characteristics as specified in the respective drawing or specification on a regular basis.

5.12 Changes to Approved Parts/Components and Processes (PCN/ECN/PTN)

5.12.1 Suppliers and sub-Suppliers are not permitted to make any unauthorized changes to a Part/Component or the process used to produce a Part/Component that has been previously approved by Balluff. This includes changes to Process Control Plans.

5.12.2 A "Change" refers to all situations referenced in VDA Volume 2 Trigger Matrix (latest edition). Changes for electronic components are defined in the ZVEI Guideline for Customer Notifications. The Supplier shall add the ZVEI/DQM ID and the type of change to Supplier's PCN.

5.12.3 The Supplier shall submit the notifications following the preconditions:

PCNs/ECNs
- 12 months prior to the planned Part/Component/process change, with sample availability and qualification report completed
- All affected Part/Component numbers must be identified within the PCN/ECN.
- Only 1 PCN/ECN within 2 years for affected components may be accepted by Balluff.

PTN for customized components
A lifetime supply (series and aftermarket requirements) must be guaranteed. Consequently no Part/Component discontinuation will be accepted.

PTN for standard components
A lifetime supply should be guaranteed for series production. The Supplier must ensure, with foresight, that components are available for series production.

5.12.4 In case of unavoidable Part/Component discontinuation:
- The Supplier must send a Part/Component Termination Notification (PTN) to Balluff, in writing, at least 12 months prior to any such discontinuation.
- All affected Part/Component numbers from Balluff shall be identified with the PTN.
- The Supplier shall specify alternative components/solutions for replacement.
- If the PTN leads to a last time forecast/buy, Balluff shall provide the Supplier with forecast information.
- The Parts/Components must be stored at the Supplier's premises and remain the property of the Supplier until they are shipped according to the delivery schedules and/or purchase order from Balluff.
- The Supplier is responsible for the correct storage, handling and quality of the Parts/Components. Furthermore, quantities terminated for Balluff are only to be delivered to Balluff's site, which forecasted the Parts/Components.

5.12.5 PCNs/ECNs/PTNs for electronic components shall be submitted to the global email address pcn@balluff.de

5.12.6 PCNs/ECNs for mechanical and electromechanical components must be submitted to the Balluff Purchasing contact. The Supplier must receive acceptance and release notifications from all Balluff locations affected by the PCN before shipment.

5.12.7 The Supplier must receive acceptance and release notifications from all Balluff locations affected by the PCN. The absence of a written response from Balluff does not constitute acceptance of the change/termination. Deliveries of changed components and/or termination of delivery must not start prior to the receipt of written approval from all respective Balluff locations.

5.13 Appendices

5.13.1 Appendix 1: Specific Requirements for EX-relevant parts/components
5.13.2 Appendix 2: Specific Requirements for Food Contact Material
5.13.3 Appendix 3: Balluff PPAP requirements
5.13.4 Appendix 4: Balluff PSW – Part Submission Warrant

6 Definitions

8D	Eight Disciplines – Problem Solving Process/Report
ATEX	ATmosphères EXplosives
APQP	Advanced Product Quality Planning and Control Plan
BS	Balluff Standard
CMK	Machine Capability
CPK	Process Capability Index
CSL1/2	Controlled Shipment Level 1/2
DMAIC	Define, Measure, Analyze, Improve, Control (SixSigma)
DOE	Design of Experiments
EOP	End of Production
EMS	Electronic Manufacturing Services
EX	IECEx, ATEX, UKCA/UKEX, NRTL, Mining Products Safety Approval (CN)
FIFO	First In First Out
FMEA	Potential Failure Mode and Effects Analysis
FPY	First Pass Yield
FTA	Failure Tree Analysis
IAF MLA	International Accreditation Forum Multilateral Recognition Arrangement
GMP	Good Manufacturing Practice
IMDS	Automotive Industry Material Data System
ISO	International Standards Organization
Parts/Components	Material, Part, Component, Product, Material
MSA	Measurement Systems Analysis
NTF	No Trouble Found
PCN/ECN	Product or Process Change Notification/Engineering Change Notification
PDF417	2D Code for package label description based on ISO/IEC 15438
PTN	Product Termination Notification
PPAP	Production Part Approval Process
PPM	Parts Per Million
PSW	Part Submission Warrant
QA	Quality Agreement/Supplier Guideline
Run@Rate	Audit performed under serial production circumstances
SLC	Safe Launch Concept
SPC	Statistical Process Control
Supplier	(i) the signing legal entity itself and/or (ii) any Participating Related Company/Companies of the signing legal entity
UL	Organization formerly known as Underwriters Laboratories
VDA	German Automobile Association
VDA Volume 2	http://vda-qmc.de/fileadmin/redakteur/downloads/Volume_2_Trigger Matrix Appendix_2_Trigger_Matrix.pdf
ZVEI	German Electro and Digital Industry Association

Contacts:

Balluff Purchasing Supplier Development	Name: Title: Phone: Email:
Balluff Purchasing	Name: Title: Phone: Email:
Supplier:	Name: Title: Phone: Email:

7 Appendix 1: Specific Requirements for EX-relevant Parts/Components

7.1 General

7.1.1 A supplier is qualified for EX-relevant parts, processes and services, if

- the supplier has an approved EX quality management system per EN 80079-34, or
- the supplier has an approved EX quality management system per ISO/IEC 17021, or
- a documented audit per EN 80079-34 has ensured that all essential control procedures are present and documented, understood and effective.

7.1.2 The supplier is aware that EX-specific contract products are used in end products intended for use in explosive atmospheres.
EX-specific products are identified in the specification and/or drawing, for example, see Figure 1: Example for EX material identification.

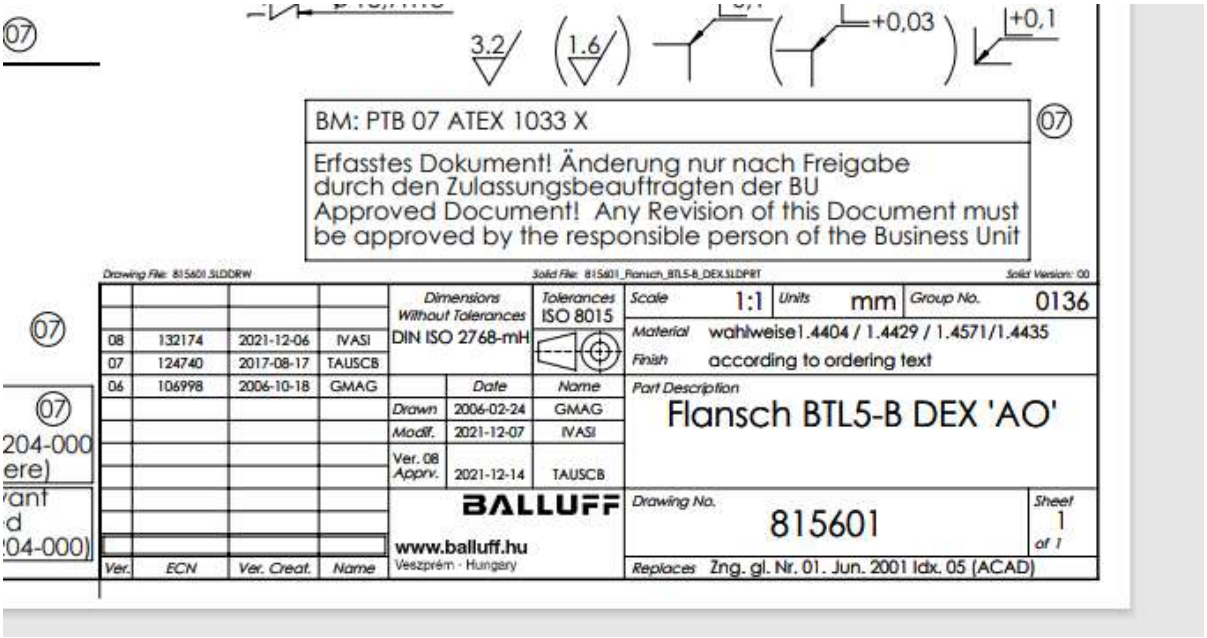


Figure 1: Example for EX material identification

7.2 Scope of Application - EX

7.2.1 The Supplier is aware that the contractual products are used in end products intended for use in potentially explosive atmospheres.

7.3 Quality Assurance

7.3.1 The Supplier shall ensure that no subcontractors are involved in the manufacture of the contractual products. Records of the implementation of the quality assurance measures, in particular of measured values and test results, shall be kept.

7.3.2 Only persons who have the necessary training and qualifications shall be involved in the creation of the contractual product and in the performance of the agreed tests. Training records shall be kept.

7.4 Type and scope of control

7.4.1 If the EX certificate specifies routine testing or inspections, these must be performed for each individual product. Each delivered lot shall be 100% inspected according to the order documentation and until the compliance of the entire lot is verified. This means that, for each lot, an inspection log including the performed measurements and definitively

guaranteeing compliance with the respective order, and for each delivered part, is either included or sent in electronic form.

7.4.2 If the verification of a procured product references the material (metals, alloys, non-metallic parts, resins and similar), a specific analysis certificate or explanation, e.g. Inspection Certificate 3.1, shall be provided.

7.4.3 If for either the external supplier or for BALLUFF, training or special competencies or knowledge are required to perform verifications, then the training material, the special abilities and knowledge or the background must be documented and the training records must be recorded at the supplier.

7.5 Supplier's Obligation to Provide Evidence and Information

The Supplier shall notify Balluff in writing in case of:

- changes to a contractual product,
- changes in the product design,
- changes in the specification,
- changes in the production location, or
- changes in the manufacturing process

for a contractual product. Such changes shall require the prior written consent of Balluff.

7.5.1 The absence of a written response from Balluff does not constitute acceptance of the change/termination. Deliveries of changed components and/or termination of delivery must not start prior to receipt of written approval from all respective Balluff locations.

7.5.2 The Supplier undertakes to set up and maintain a system for traceability and identification of product defects which, in the event of defects and product faults in the contractual products, allows these to be limited and traced in terms of time, parts and quantities. The Supplier shall inform Balluff of the system for traceability and identification of product defects in such a way that Balluff can make its own determinations to the extent necessary.

7.5.3 The Supplier shall ensure that all persons involved in the execution of the contract have access to the respective current technical documents and that all technical documents that have become invalid due to changes are removed. The Supplier is also obligated to keep meaningful and comprehensible records of all changes and to submit these to Balluff at any time upon request.

7.6 Recall actions, service actions

7.6.1 If, as a result of knowledge gained from practical experience, test results or otherwise, the Supplier becomes aware of a problem that may cause a defect in a contractual product or a product in which a contractual product is included, or that may lead to unsatisfactory performance, the Supplier shall immediately inform Balluff.

7.6.2 The Supplier shall then immediately conduct an investigation to determine the cause of the problem and assess the impact on the safety of the user and, if necessary, take immediate action up to and including precautionary replacement (including in the field). Such precautionary replacement in the form of a recall or service action is required in particular (a) in the event of safety-relevant and/or health-endangering problems, or (b) if the same problem occurs in at least 3% of the contractual products of the same part number delivered to Balluff within a period of 2 months, or (c) if the same problem occurs in at least 10% of all contractual products delivered to Balluff within a period of 2 months or (d) if the parties agree on the necessity of such a recall or service action.

7.6.3 In the event of necessary recall or service actions within the meaning of section 7.6.2**Fehler! Verweisquelle konnte nicht gefunden werden.** due to problems for which a contractual product is the cause, Balluff shall take the lead in carrying out the recall or service action for the Supplier. The Supplier shall reimburse Balluff for all damages, costs and expenses incurred as a result of such a recall or service action. This includes the costs charged to Balluff by its customers.

7.7 Quality Assurance Representative, Explosion Protection Representative

For the purposes of this Agreement, the Quality Assurance Representative and, if applicable, the Explosion Protection Representative shall be the person or persons who are

responsible for coordinating the implementation of this Agreement and for making or bringing about related decisions.

8 Appendix 2: Specific Requirements for Food Contact Material

8.1.1 Materials in hygienic products that come into contact with food at the customer's premises are called FCM (Food Contact Material).

8.2 Scope of Application - FCM

8.2.1 Knowing the intended use of the contractual products from Balluff, the Supplier warrants that the contractual products, as well as any partial products/and or partial products contained therein, comply with the agreed specifications, which include all features necessary for compliance with the respective approval regulations in accordance with regulations 1935/2004/EC as well as 2023/2006/EC and, furthermore, comply with the current state of science and technology as well as the relevant legal provisions and regulations including the guidelines from authorities, professional associations and trade associations, in particular the respectively valid regulations on the placing of products on the market, and that the contractual products are suitable for the intended use.

8.2.2 If the delivery is made for or to a country other than Balluff's place of business, the Supplier shall also be responsible for ensuring that the more extensive or stricter regulations applicable in this case are complied with, irrespective of their nature.

8.2.3 The Supplier is obligated to confirm to Balluff full and continuous compliance with the requirements for the contractual products described in Clause 8.2.1, by providing Balluff, prior to the first serial delivery of the contractual products, with a declaration of conformity relating to the respective contractual product confirming compliance with the respective requirements.

8.2.4 If, for whatever reason, changes are made to a declaration of conformity, the Supplier shall provide Balluff with the respective current version of the declaration of conformity.

8.2.5 The Supplier shall ensure that no subcontractors are involved in the manufacture of the contractual products.

8.2.6 The Supplier shall take appropriate measures to ensure that the material properties relevant to the regulations cannot be impaired during storage, handling and processing of the raw materials as well as during storage and transport of the contractual products. The contractual products shall be packed and protected by the Supplier on all transport routes in such a way that the material properties relevant to the regulations cannot be impaired.

8.2.7 With respect to each individual delivery of contractual products to Balluff, the Supplier shall:

- Ship Packaging units in clean batches and mark them with the respective batch information, either with a barcode or a data matrix code.
- Prove the existence of the prescription-relevant properties on the respective contract product itself
- Provide the current declaration of conformity for the respective contract product. The declaration of conformity must be renewed every 2 years, and also without delay as soon as the legal requirements change. These documents are to be sent to pcc@balluff.de
- Provide test certificates and 3.1-Inspection Certificates (EN10204) for any raw and/or semi-finished products included. These documents shall be sent to SQM_ALL@balluff.de or enclosed with the contractual product.

8.2.8 If a contractual product itself, its packaging or documents enclosed with it are marked with a special label, the Supplier warrants that the contractual product complies with the applicable provisions entitling or obligating it to be marked, the health and safety requirements provided for and other conditions for placing it on the market, and that the

health and safety of users or third parties or other legal assets are not endangered in the event of intended use or foreseeable misuse.

8.2.9 The Supplier is obligated to submit to Balluff, on request, all documents and test results which form the basis for labeling and/or certification of the contractual products and/or to grant the relevant supervisory authority access to these documents and test results.

8.2.10 The Supplier is obligated to submit to Balluff, on request, with a material declaration of the contractual products, as well as any sub-products and/or sub-products contained therein.

8.2.11 The Supplier is obligated to process only raw materials specified by Balluff. In particular, the respective processing instructions of the raw material manufacturer must be observed.

8.3 GMP (Good Manufacturing Practice)

By implementing GMP, the Supplier ensures that processing, handling, packaging and storage do not impair the food-relevant properties of Food Contact Materials.

8.3.1 The Supplier ensures that the measuring equipment used is capable of performing the required tests with sufficient accuracy. Corresponding proof of the measuring equipment's capability is kept documented.

8.3.2 Quality records and other documents and data relating to the manufacture of the contractual products shall be kept for at least 12 years from the date of delivery of the last contractual product manufactured.

8.3.3 The Supplier shall ensure that only persons who have the necessary training and qualifications are involved in the production of the contractual product and in the performance of the agreed tests. Training records shall be kept.

8.4 Supplier Obligation to Provide Evidence and Information

8.4.1 The Supplier warrants that:

- changes to a contractual product,
- changes to the product design,
- changes to the specification,
- changes to the production location,
- changes to the manufacturing process and/or the associated process parameters or
- any change relevant to approval

may only be made with the prior written approval of Balluff.

8.4.2 The absences of a written response from Balluff does not constitute acceptance of the change/termination. Deliveries of changed components and/or termination of delivery must not start prior to the receipt of written approval from all respective Balluff locations.

8.4.3 The Supplier shall set up and maintain a system for the traceability and identification of product defects which, in the event of defects and product faults in the contractual products, allows them to be limited in terms of time, parts and quantities and to be traced within 48 hours. In particular, complete records must be kept regarding the procurement of the respective raw material, the order data, as well as the process parameters and the batch information. The Supplier shall inform Balluff of the system for traceability and identification of product defects in such a way that Balluff can make its own determinations to the extent necessary.

8.4.4 The Supplier shall ensure that the respective current technical documents are available to all persons involved in the performance of the contract and that all technical documents that have become invalid due to changes are removed. The Supplier is also obligated to keep

meaningful and comprehensible records of all changes and to submit these to Balluff at any time upon request.

8.5 Type and Scope of Control

8.5.1 The Supplier shall deliver the contractual products 100% inspected. The Supplier is required to submit proposals for any inspections going beyond the existing test concept at Balluff's request. Balluff is entitled, but not obligated, to implement any such suggestions.

8.6 Recall Actions, Service Actions

8.6.1 If, as a result of knowledge gained from practical experience, test results or otherwise, the Supplier becomes aware of a problem that may cause a defect in a contractual product or a product in which a contractual product is included, or that may lead to unsatisfactory performance, the Supplier shall immediately inform Balluff.

8.6.2 The Supplier shall then immediately conduct an investigation to determine the cause of the problem and assess the impact on the user's safety and, if necessary, take immediate action up to and including precautionary replacement (including in the field). Such precautionary replacement in the form of a recall or service action is required in particular (a) in the event of safety-relevant and/or health-endangering problems, or (b) if the same problem occurs in at least 3% of the contractual products of the same part number delivered to Balluff within a period of 2 months, or (c) if the same problem occurs in at least 10% of all contractual products delivered to Balluff within a period of 2 months or (d) if the parties agree on the necessity of such a recall or service action.

8.6.3 In the event of necessary recall or service actions within the meaning of section 8.6.2**Fehler! Verweisquelle konnte nicht gefunden werden.** due to problems for which a contractual product is the cause, Balluff shall take the lead in carrying out the recall or service action for the Supplier. The Supplier shall reimburse Balluff for all damages, costs and expenses incurred as a result of such a recall or service action. This includes the costs charged to Balluff by its customers.

Appendix 3: Balluff PPAP requirements

Balluff PPAP requirements (Production Part Approval Process)

The inquired information are requirements for the release. The organization should submit these documents Balluff and keep copies of the reports and documents accordingly.
The supplier confirms in the column "documents enclosed", that for the release the appropriate documents and/or samples are presented.

	Balluff PPAP Level				
No.	1	2	3	Information/Documents from supplier	Explanation
1	X	X	X	**Balluff PSW Cover Sheet (Part Submission Warrant)**	This is the form that summarizes the whole PPAP package. This form shows the reason for submission (design change, annual revalidation, etc.) and the level of documents submitted to the customer. There is a section that asks for "results meeting all drawing and specification requirements: yes/no" refers to the whole package. If there are any deviations the supplier should note on the warrant or inform that PPAP cannot be submitted.
2		E	X	**Feasibility study / commitment**	As part of the contract review the supplier has to check all commercial, logistic and technical specification, like drawings, CAD data, test instruction regarding realization (use of internal check list, technical feasibility studies, capacity planning, cost analysis, packaging requirements, FMEA, ...
3		E	X	**Product Specification (drawings, data sheets)**	A printed copy of drawing needs to be provided. "Each and every feature must be "ballooned" to correspond with the inspection results (including print notes, standard tolerance notes and specifications, and anything else relevant to the design of the part). For brandlabel products including delivery content of the products, manuals,
4	X	X	X	**Measurement results** **- dimensional** **- functional** **- material evaluation** **- haptic** **- exhalation** **- optical evaluation** **- reliabililiability test**	A list of every dimension noted on the ballooned drawing. This list shows the product characteristic, specification, the measurement results and the assessment showing if this dimension is "ok" or "not ok". Usually a minimum of 4 pieces is reported per product / process combination. A summary of every test performed on the part. This summary is usually on a form of DVP&R (Design Verification Plan and Report), which lists each individual test, when it was performed, the specification, results and the assessment pass / fail. In addition, this section lists all material certifications (steel, plastics, plating, etc.), as specified on the print. The material certification shall show compliance to the specific call on the print.
5			E	**Design FMEA** **(by design responsibility of the supplier)**	A copy of the Design Failure Mode and Effect Analysis (DFMEA), reviewed and signed off by supplier and customer. If customer is design responsible, usually customer may not share this document with the supplier. However, the list of all critical or high impact product characteristics should be shared with the supplier, so they can be addressed on the PFMEA and Control Plan.
6	E	X	X	**Process flow Diagram (Pflow)**	The process flow chart is a simplified presentation of the complete production flow using symbols provided by the supplier. It can be a part of the control plan or created in a separate document. Ensure that a clear allocation to the control plan is possible.
7		E	X	**Process FMEA**	A copy of the Process Failure Mode and Effect Analysis (PFMEA). The PFMEA follows the Process Flow steps, and indicates "what could go wrong" during the fabrication and assembly of each component.
8		X	X	**Control Plan (CP)**	The Control Plan follows the PFMEA steps, and provides more details on how the "potential issues" are checked in the incoming quality, assembly process or during inspections of finished products. A control plan states what should be inspected, when, how, with which equipment and to which extent. It contains important information and quality assurance procedures which are necessary in the course of a production in order to ensure the quality of the final product. The production flow presented in the process flow chart must be reflected in the control plan. The control plan shall mention the emergency plan in case of non conformity parts for each controlled item. It is provided by the supplier.
9		X	X	**Process capability (CPk >= 1,67)**	Usually this section shows all Statistical Process Control charts affecting the most critical characteristics. The intent is to demonstrate that critical processes have stable variability and that is running near the intended nominal value. A short term study of proceess control capability (Cpk) must come from one continuous significant production run. At least 100 individual samples must be used for Cpk calculations. Multi cavity tools would require a separate study per cavity. Supplier must have minimum Cpk value of 1,33 if not otherwise agreed. No attribute data will be accepted for any PPAP submissions for initial Process Study. If no Special Characteristic is identified in the documents,, the supplier shall identify characteristics that have a direct affect on fit, form and fucnction and peform initial Process Stdudies on them.
10			X	**Measurement System Analysis Studies (MSA)**	The supplier has to provide a MSA study. Analyze the ability of gauges und complete measurement systems regarding accuracy, repeatability, reproducible, stability and linearity of all measuring tools identified in the Conrol Plan
11			X	**Supplier Declaration RoHS, REACH**	If raw material is defined, material report and raw material datasheets needs to be submitted.
12			X	**Result of internal process asessement (audit)**	
13		X	X	**Product-/Process and/or Tool history**	Engineering Change (note) Documents A document that shows the detailed description of the change. Usually this document is called "Engineering Change Notice", but it may be covered by the customer PO or any other engineering authorization.
14			X	**Lab scope and outside lab proof of accreditation.**	All external laboratories must be accredited to ISO/IEC 17025.
15			E	**Checking Aids**	When there are special tools for checking parts, this section shows a picture of the tool and calibration records, including dimensional report of the tool.
16			X	**Type and size of product packaging**	Balluff generally takes on the supplier's options. A pragmatic solution is sought.
17		X	X	**Master Samples**	Master samples for initial release. A sample from the same lot of initial production run. The PPAP package usually shows a picture of the sample.
brand label product specific					
18			X	EU Declaration of Conformity (EU DoC) of manufacturer (basic type)	For brand label products only
19			X	UK Declaration of Conformity (UKCA) (basic type)	For brand label products only
20			X	Certificates of manufacturer	(e.g. TÜV, CSA, UL, E1)
21			X	Type designation and material number of manufacturer (Balluff labeled type)	After creation of material master data Balluff provides the final type designation, material number, etc. for the manufacturer. Then we get the name / material number of the Balluff labeled type. Multiple listing is possible 6 weeks after announcement of the Balluff type designation (PCC).
22			X	2D/3D Data (.step-file)	
23			X	Type label/ laser marking (Drawing and dimensions, .dxf file)	Balluff needs to know what options the supplier has to create its own type label. Then Balluff creates a type label according to Balluff specifications.
24			X	Packaging label (Drawing and dimensions, .dxf file)	Balluff does not insist that all Balluff specifications (e.g. label dimensions) are adhered to. A pragmatic solution is sought.
25			X	Requirements of labeling according to certification: -Type label -Packaging -Manual	Information of manufacturer which warnings and data have to be placed on the product, packaging and in the manuals. This information can be found in the respective approval documentation.
26			X	Test reports of manufacturer (especially test evidence from an accredited test laboratory to every standard specified within EU DoC and UK DoC)	Test reports must be requested from Balluff to ensure legal protection. If delivery is refused, the disclosure is secured via QAA / FSC or short version.
27			X	Risk assessment (required for EU DoC and UK DoC)	Risk assessment must be requested from Balluff to ensure legal protection. If delivery is refused, the disclosure is secured via QAA/FSC or short version.
28			X	MTTF data	

X: Required to submitt, additional requests are possible
E: Only on request or review during process assessment

Appendix 4: Balluff PSW – Part Submission Warrant

BALLUFF

Part Submission Warrant

Supplier Report No.		**Rev.**		**Balluff No.**		**Drawing rev**	
Supplier Address				Part Designation			
Company Name				Project			
Street Name				Quantity Ordered			
Post Office Box				Drawing Status			
City		Zip Code		Specific requirement for: ☐ Food Contact Material (FCM) ☐ IECEx, ATEX, UKCA/UKEX, NRTL, Mining Products Safety Approval			
Country							

Reason for sampling

☒ **Initial Sample Inspection**	☒ **New Part**	☐ Production Relocation	☐ New Tool	☐ New Sub-Supplier
☐ **Subsequent Inspection**	☐ **Part Modification**	☐ Changed Production Conditions	☐ New Raw Material	☐ Long Delivery Interruption

REQUESTED SUBMISSION LEVEL (Check one)

- ☐ Level 1 Warrant only (and for designated items a report) submitted to customer
- ☐ Level 2 Warrant with product samples and limited supporting data submitted to customer
- ☒ Level 3 Warrant with product samples and complete supporting data submitted to customer

Please select the enclosed items related to this PPAP

☒ 01 Balluff PSW (cover sheet)			
☐ 02 Feasibility study / commitment (based on requirements)	☐ 06 Process flow Diagram (Pflow)	☐ 10 Measurement System Analysis Studies (MSA)	☐ 14 Lab scope and outside lab proof of accreditation.
☐ 03 Product Specification (drawings, data sheets)	☐ 07 Process FMEA	☐ 11 Supplier Declaration RoHS, REACH	☐ 15 Checking Aids
☐ 04 Measurement results - dimensional	☐ 08 Control Plan (CP)	☐ 12 Result of internal process asessement (audit)	☐ 16 Type and size of product packaging
☐ 05 Design FMEA (by design responsibility of the	☐ 09 Process capability (CPk >= 1,67)	☐ 13 Product-/Process and/or Tool history	☐ 17 Master Samples

brand label products only

☐ 18 EU Declaration of Conformity (EU DoC) of manufacturer (basic type)	☐ 21 Type designation and material number of manufacturer	☐ 24 Packaging label (Drawing and dimensions, .dxf file)	☐ 27 Risk assessment (required for EU DoC and UK DoC)
☐ 19 UK Declaration of Conformity (UKCA) (basic type)	☐ 22 2D/3D Data (.step-file)	☐ 25 Requirements of labeling according to certification:	☐ 28 MTTF data
☐ 20 Certificates of manufacturer	☐ 23 Type label/ laser marking (Drawing and dimensions, .dxf file)	☐ 26 Test reports of manufacturer (especially test evidence from an	☐ 29

SUBMISSION RESULTS

These results meet all drawing and specification requirements: ☐ YES ☐ NO (If "NO" - Explanation Required)

SUPPLIER Confirmation

Name / Department	Phone & Fax / E-Mail	Date	Signature

Decision

☐ Release ☐ Limited Release, Quantity/ until Date ☐ No Release ☐ New Samples by (Date) .....

Remarks to decision:

Name / Department	Phone & Fax / E-Mail	Date	Signature