Quality Guideline for Suppliers

0.1 Change record

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0.2 Scope

This Quality Guideline for Suppliers is unrestrictedly valid for all supplied parts to the global KOSTAL automotive business units. For parts supplied parts to the business units KOSTAL Industry and KKS, limitations could be agreed between these business units and suppliers. These limitations may extend to individual parts, part families or complete non-automotive business units.

Quality Guideline for Suppliers

Inhalt

Quality Guideline for Suppliers

1 Requirements

1.1 General

The supplier must maintain a Quality Management System that encompasses advanced quality planning, production-related quality assurance, quality analysis and documentation.

Procedures must likewise be applied in order to adhere to environmental standard (ISO14001 or equivalent).

This guideline serves to present KOSTAL minimum requirements regarding the quality assurance of its suppliers and is applicable in addition to the terms and conditions of purchasing.

The standards of the Automotive OEM must be complied with.

This guideline is based on laws, standards and guidelines in their currently applicable form.

The primary aim of all KOSTAL suppliers must be to achieve "zero defects quality".

The supplier must assure the goods and services to automotive qualifications and keep records of reliability and test results. This applies to the supplier, and all branches of their company. The signed Quality Guideline for Suppliers (QG) applies to all KOSTAL locations worldwide and covers all deliveries of the products in question.

The validity of the Quality Guideline for Suppliers is unlimited until replaced or updated by KOSTAL.

In the case of contradictory quality requirements, the following priority shall apply:

1. Drawing / technical data sheet / technical specification
2. Quality Guideline for Suppliers

The supplier must ensure that parts meet all of the requirements (function, dimension, material, visual, tactile, acoustic and any other requirements).

The supplier is expected to require a similar standard from the supply chain.

All other KOSTAL general guidelines, contracts and forms are available for download on KOSTAL Homepage downloads section, purchasing documents.
https://www.kostal.com/-/media/files/downloads/vertragsdokumente/vertragliche-dokumente%20lieferanten/rl_06-31-037_20170823.pdf?la=en-gb&hash=26B5BB1E1054F0539079D06EB858B0935A593505

The malfunction of this link does not release from the obligation to download the above mentioned KOSTAL documents from the KOSTAL homepage independently.

1.2 Quality Management system

To assure the product requirements described in the purchase agreement and specifications, the supplier must have a Quality Management System according to IATF 16949 (latest edition). In case the supplier is not certified to IATF 16949, ISO 9001 (latest edition) is regarded as a minimum requirement, supported by a plan to pursue IATF16949.

The supplier provides KOSTAL information on the quality related KPI's (for example internal scrap rates of KOSTAL products) on the first request. This can be done online or offline.

1.3 Advanced Product Quality Planning (APQP)

The specified products must be checked in advance to ensure they can be manufactured in accordance with all requirements in the Quality Agreement for the relevant commodity group must be considered.

Advanced Product Quality Planning must be carried out by the supplier according to VDA Volume 4.3 and/or IATF16949, starting at the time of the initial Request for Quote. It may be required by KOSTAL to review the APQP process on site.

In addition to the test/inspection characteristics stated in the drawing, the KOSTAL quality planning department may issue a separate requirements specification setting out important, customer-relevant characteristics and how they are to be checked. In this case the supplier is obliged to accept and use the checking dimensions and methods defined in the requirements specification and to demonstrate the measurement capability of all the checking dimensions.

1.4 Test and test device planning

Unless laid down otherwise by contract, the testing devices necessary for quality assurance must be procured by the supplier.

The supplier must subject all the measuring and testing equipment to a visual, dimensional and functional calibration both prior to use in pilot production and at specified intervals subsequent to this. The frequency of this calibration depends on the type, frequency of use and accuracy of the equipment.

The basic suitability of the measuring and testing equipment used for the respective measuring task must be demonstrated statistically using a Measurement System Analysis (MSA). This verification is part of the initial sample documentation.

All testing and measuring equipment must conform to the standards laid down which in turn must be traceable to national and international standards. The calibration status of measuring and testing equipment is to be monitored and labelled with a suitable system. The results of calibration are to be documented.

In case that KOSTAL provides measuring and test equipment to the supplier, the supplier has to carry out the necessary calibration. The supplier manages test equipment in its own inspection equipment monitoring. KOSTAL-owned test equipment must be marked as such and thus always be identifiable.

1.5 Packaging

The supplier is responsible for the validation of the suitability of his packaging for the way to KOSTAL on standard logistics method and special freight. KOSTAL shall only approve the usability within KOSTAL.

1.6 Customer Specific Requirements (CSR)

The supplier is obliged to follow all OEM specific requirements stated on web of International Automotive Task Force: **http://www.iatfglobaloversight.org/oem-requirements/customer-specific-requirements/**

If not known, the supplier is responsible to request the information about OEM from the responsible buyer who is stated in the header of this Framework Agreement.

2 Supplier Audit

2.1 Supplier Assessment

The supplier assessments used in KOSTAL are based on VDA volumes 6.3 process audit and 6.5 product audit and are to be regarded as a mandatory part of this guideline (see also IATF 16949 chapter 9.2.2.3 and 9.2.2.4). OEM specific requirements, for example regarding combined process and product audits, have to be considered.

KOSTAL reserves the right to perform process and product audits according to the specifications and regulations in this Guideline on the supplier's premises with prior notice in the event of complaints, insufficient or ineffective complaint processing and to inspect new or changed products. The supplier also facilitates requests by KOSTAL at short notice and undertakes to facilitate the fulfilment of the KOSTAL auditors' task and to cooperate constructively.

The actions defined in the result of the audit are to be implemented consistently by the respective officer of the contractual partner.

2.2 Supplier Self-Assessment (applicable for suppliers to KOSTAL Automotive Electrical Systems)

The supplier must complete VDA 6.3 Process audits annually. The supplier is required to provide the result and action plan to the responsible supplier developer. KOSTAL reserves the right to verify this result by own VDA 6.3 process audits. OEM specific requirements, for example regarding combined process and product audits, have to be considered.

2.3 Other VDA 6.3 Third Party Audits

Evidence of other VDA 6.3 Third Party Audits may be requested by KOSTAL and must be provided by the supplier on request.

3 Failure Mode and effect Analysis (FMEA)

The supplier must prepare a process FMEA according to VDA Volume 4, Part 2 or QS 9000 for all production processes as well as accompanying processes (stock receipt, packing, dispatch) aimed at early detection of potential defects and causes of defects and is to implement effective measures to prevent and detect defects in the planning phase. Product group-related FMEAs are acceptable. Special Characteristics must be evaluated individually.

The process FMEA is to be prepared to the date agreed and is to be maintained over the entire production period. The FMEA is to be updated if products and processes are changed and in the case of customer complaints.

KOSTAL is entitled to inspect the FMEAs.

4 Initial Sample Inspection Report (ISIR)

4.1 Pre-ISIR samples

Before an initial sample submission and production release for purchased items, various departments at KOSTAL may order samples from the supplier, in order to test production processes or to initiate pre-production deliveries to KOSTAL's customers. All such samples must be clearly identified and the Supplier’s part history must be provided with the delivery.

4.2 Initial sampling by the supplier

The initial sample documentation is to be submitted according to KOSTAL’s requirements, which are a combination of PPF procedure (VDA Volume 2) and PPAP procedure (AIAG PPAP).

As a general principle, the supplier must carry out initial sampling in accordance with all the requirements set out in AIAG and VDA volume 2 and according to customer specific requirements.

The supplier is required to submit an initial sample submission for the following reasons:

1. New parts
2. Re-submission following rejection of parts/ISIR submitted previously
3. Modified parts (change to specification or material)
4. Change in production processes, equipment and new or modified tools
5. Change in production location
6. Re-start of production after an extended break (longer than 1 year)
7. Change of source for purchased or sub-contracted parts, materials or services
8. Following a major quality concern

4.3 Sample and ISIR requirements

Specific definitions for each ISIR will be fixed and agreed within the KOSTAL **P**art **A**pproval **E**valuation **T**emplate (PAET) prior to start ISIR testing and documentation. This template will be prepared and sent out by KOSTAL supplier quality via DDX (data transfer server). The supplier is requested to confirm the requirements or in exceptional cases to make alternative proposals, which may refer to the test method, test device, number of test samples or transferring of test results from variants. All requirements, which are shown on the drawing and which are requested from customer are not negotiable.

In case 1. and 3. of section 4.2 KOSTAL will order initial samples and ISIR documents from the supplier. In all other cases the supplier must bear his own cost and additional cost of KOSTAL or KOSTAL's customers for the validation and implementation of the change and the processing of the ISIR. The supplier will provide a delivery date commitment to KOSTAL for both initial samples and ISIR documents. The supplier will clearly identify the parts as ISIR sample parts.

There are specific requirements for different submission cases. KOSTAL will communicate the requirement for case 1 and 3 with the ISIR order. In case of the other reasons for ISIR submission, the supplier has to investigate with the responsible buyer at KOSTAL, which submission level will have to be provided.

The initial samples must be made completely with series production equipment and under series production conditions.

The submitted ISIR documents must include all requirements specified and additional requirements agreed within the PAET document.

In addition to the specific requirements within the PAET document, the ISIR documents should meet the following requirements:

1. The ISIR package must be submitted in English and in one PDF document
2. If there are requirements that are not achieved, they must be identified by the supplier through a clear statement on the cover sheet and highlighted in RED character text and/or "NOK" statement in the relevant document.
3. It must have a clear structure and breakdown with a cover sheet as outlined in the ISIR Checklist and template form (ISIR checklist).
4. The IMDS number must be applied for (International Material Data System) at least 2 weeks prior to the initial sample submission to KOSTAL.
5. The parts must be sent to the attention of the contact named in the PO.
6. The ISIR documentation must be sent electronically to the specified ISIR email address stated in the PO.
7. The samples must be clearly identified by marking 'ISIR SAMPLES – Not for Production Use'.

In the case of electronic components, the supplier must provide a qualification report in accordance with latest AEC requirements, which apply to that class of component. This may include robustness validation, if requested by KOSTAL. These reports will be made available in the PPAP section 10 in addition to the other qualifying results for components.

4.4 ISIR for Variant Parts

For catalogue/standard components, when a single ISIR document applies to several KOSTAL part numbers, a signed Cover Sheet is required for each part number associated with the Master ISIR, including IMDS number (on each Cover Sheet). The Master ISIR part number for this should be noted in the Cover Sheet as a reference.

For all other parts, when a single ISIR document applies to several KOSTAL part numbers, the required ISIR submission level will be agreed within the PAET document.

4.5 Initial sample and ISIR Document Result

After the review of the initial sample parts and ISIR documentation, one of the following is the result.

1. Release (OK)

   Full production shipments can be made without restrictions.

2. Release with conditions (Conditionally OK)

   The ISIR Cover Sheet will be signed as Conditionally OK. The outstanding issues must be resolved and submitted. Conditional release is given as a standard for a period of 4 weeks. An action plan must be provided by the Supplier.

3. Rejection (NOK) – If this occurs, new samples and/or ISIR documentation are required with the issues resolved.

   The timing date for new samples and/or ISIR documentation must be agreed.

4.6 Series Deliveries without approved ISIR

If there is no release or no conditional release for a part, the supplier must not ship the parts to KOSTAL without an approved deviation.

The supplier will submit the deviation request stating the deviations from the stated requirements and the actions to protect the customer to the responsible MRP controller of KOSTAL. The deviation request form is available on KOSTAL.com.

If the deviation is approved by KOSTAL, a copy of this deviation must be attached to all containers in the delivery.

If new deviations occur, which are not covered by an existing deviation, a new, additional deviation must be obtained.

5 Process Capability and Control

For all characteristics, which are agreed to be monitored by the method of statistical process control (SPC), the following requirements have to be considered.

Short-term capability should be >1.67 and long-term capability should be >1.33. If process capability cannot be verified or the minimum capability targets are not achieved, 100% testing must be carried out by the supplier and included in the Control Plan.

The use of statistical methods should follow the requirements of AIAG MSA (latest edition) and VDA 2 (latest edition). The customer-specific requirements of the OEMs must be observed, e.g. Daimler requires short-term capability >2.00 and long-term capability >1.67 for all special characteristics.

6 Quality analysis and Improvement

Zero Defects is the expected quality performance target. Suppliers are expected to continuously monitor and have improvement plans in place to ultimately achieve this goal.

The supplier will analyse performance and quality issues in a methodical way, using problem solving tools 8D, Ishikawa & 5 Why as a minimum requirement.

In addition, evidence of improvements based on the quality analysis must be available for review (Continuous improvement plans, Step-down plans etc.). Quality performance data - both internal and external, must be provided to KOSTAL when requested.

7 Production deliveries

7.1 General

Approval is communicated to the supplier by way of a signed ISIR cover sheet. Full production deliveries must not be made before initial sample approval is received by the supplier from KOSTAL (Refer 4.6).

The supplier shall only send parts to KOSTAL that meet all specification and requirements. Furthermore all material and process used in the manufacture of the parts must meet the requirements and be released.

7.2 Incoming goods inspection at KOSTAL

KOSTAL shall inspect incoming goods only with regard to obvious defects such as transport damage, deviations from quantity or non-conformance between the order and accompanying paperwork. KOSTAL shall notify defects to the Supplier without delay as soon as they are detected in the normal course of business. In this respect, the supplier waives his objection due to late advice of defects. KOSTAL reserves the right to notify the Supplier of failures detected at any point in the production process/product lifetime.

7.3 Requirements for suppliers of plastic granulate and semi-finished products

The supplier prepares the required Inspection Certificate according to EN 10204 3.1 and adds it to the delivery note. The certificate must include all agreed specification data with tolerances and the measured data for the related production lot.

KOSTAL expect only deliveries where all values in the Inspection Certificate are within the specified values.

In case of any deviation, chapter 7.11 must be followed by supplier.

7.4 Complaint Notification

A complaint notification will be issued to the supplier when there is a failure to meet requirements caused by supplier.

7.5 Management of Complaints

For complaint management, KOSTAL uses 8D method. Problem solving must have a fast response process and be communicated to KOSTAL by using 8D form FB_7602-03-772 or in similar form, which contains all information, requested in this 8D form.

When a complaint is issued by KOSTAL, the supplier must fulfil the following requirements:

D1: Establish the teams to resolve the problem

The supplier must establish a suitable interdisciplinary team to resolve the problem. The team members must be named and their functions must be stated. The supplier's team leader coordinates and reports all the activities to KOSTAL.

D2: Describe the problem

The defect which has occurred must be described by the supplier as precisely as possible from the point of view of the supplier and of KOSTAL so that no misunderstandings arise in the subsequent handling of the problem. Questions to be asked are: what, when, where, how, how many and which?

D3: Interim containment action

The supplier specifies immediate containment action (sorting, 100% inspection) and evaluates their effectiveness. In addition agreement must be reached on the type and contents of the identification (identification of secured parts must be done on each box and each pallet) of the products affected and sorted follow-on deliveries. D3 stage must be reported back to KOSTAL within 24 hours (based on working days Monday-Friday) from the initial notification of supplier. Supplier also has to confirm acceptance of future cost related to this issue and caused by supplier. The cost responsibility will be waived if the result of the root-cause analysis proves that the supplier is not responsible for the complaint, and this result is accepted by KOSTAL.

D4: Root causes analysis

Standard analysis methods 5-Why method & Ishikawa (fishbone diagram) as a minimum requirement must be used to determine the actual cause(s) of the defect. The questions and answers from the 5-Why method must be set out explicitly in writing. Must be reported to KOSTAL within 7 calendar days from the notification.

Among others three questions must be investigated and described plausibly in the analysis of cause:

- How did the defect occure?
- Why was the defect not discovered?
- Why did the system permit the defect occurrence?

Together with identifying the cause(s) the supplier must specify effective short-term actions to solve the problem for the time being. A person must be nominated to carry out the actions. The expected effectiveness of the actions must be stated and a target date must be given. Short-term actions must be added & reported through D3.

D5: Identifying permanent corrective actions

Together with identifying the cause(s) the supplier must identify all possible & effective long-term actions that will solve the problem in the long term.

D6: Implementing permanent corrective actions

From the possible corrective actions, identified under D5, one or more actions are chosen and implemented. A person must be nominated to carry out the actions. The expected effectiveness of the actions must be stated and a target date must be given. D6 must be reported to KOSTAL within 14 calendar days from the notification. All actions must be plausible and suitable to permanently prevent the defect arising and to safely discover the defect in the least probable case that it arises. The action “Worker training” is not accepted as a single action if further influences are conceivable.

Using a Step-Down diagram for visualization, when there is more than one action defined, is highly appreciated.

D7: Actions to prevent recurrence

The supplier must undertake appropriate overriding actions to prevent the recurrence of the problem in similar products or processes. D7 must be reported to KOSTAL within 14 calendar days from the notification. The supplier must provide evidence that he reviewed and updated the FMEA related to the occurred problem.

7.6 Containment of Non-conforming good or parts

The supplier is obliged, in consultation with KOSTAL, to carry out containment actions for affected material in the supply chain, as soon as possible, at the supplier’s expense. The supplier must supply replacements immediately for the affected parts.

7.7 Controlled Shipping

Controlled Shipment is an integral part of the Supplier Improvement Process. It applies equally to all suppliers and affiliated organizations who supply parts, materials, equipment, or logistical services for production, pre-production, and/or service to the customer (KOSTAL).

Controlled Shipping is a demand by the customer that a supplier put in place an additional inspection process to sort for a specific non-conformance, while implementing a root-cause problem solving process. The redundant inspection is in addition to normal controls. The data obtained from the additional inspection process is critical as both a measure of the effectiveness of the secondary inspection process and the corrective actions taken to eliminate the initial non-conformance.

Two levels of Controlled Shipping exist.

7.7.1 Controlled shipping Level 1

- Includes a problem solving process as well as an additional inspection process.
- The supplier's employees at the supplier's location implement the inspection process in order to isolate the customer from receipt of nonconforming parts/material.

7.7.2 Controlled shipping Level 2

- Includes the same processes as Controlled Shipping - Level 1, with an added inspection process by a third party representing the customer's interests specific to the containment activity.
- The third party is selected by the supplier, approved by the customer, and paid for by the supplier.
- Suppliers must select the third party from an approved listing maintained by the customer.

The third party or a customer representative will perform audits. The data obtained from the third party redundant inspection process is a measure of the effectiveness of the secondary inspection process and the corrective actions taken to eliminate the initial non-conformance.
In special cases, the Controlled Shipping - Level 2 inspection may be required to be performed outside the supplier's facilities at a facility deemed appropriate by the customer.

7.7.3 Criteria for application for Controlled Shipping-Level 1 or 2

The customer makes the determination whether the supplier can effectively correct the nonconforming material situation through the problem solving process and isolate the customer from the problem. One or several of the following issues may be considered for implementation of Controlled Shipping:

- Accumulation of complaints
- Repeat complaints
- Supplier's current controls are not sufficient to ensure conformance to requirements
- Duration, quantity, and/or severity of the problem
- Internal/External Supplier data
- Controlled Shipping Level 1 not effective
- Major Disruptions
- Quality Problem in the field (i.e. Warranty, JD Power)

Based on consideration of the above, KOSTAL decides whether Level 1 and/or Level 2 would be appropriate.

7.7.4 Controlled Shipping Exit

The target and the exit criteria have to be negotiated individually depending on an agreed risk evaluation.

7.8 Top Focus program (applicable for suppliers to KOSTAL Automotive Electrical Systems)

The TopFocus process is a process utilized to eliminate systemic quality defects created within KOSTAL supplier manufacturing processes and subsequently impacting KOSTAL operations. It is a structured approach to manage KOSTAL key suppliers who have the greatest impact on KOSTAL's operations and the greatest potential for improvement. The TopFocus process is driven by the supplier action plan and aggressive step down quality targets defined by the supplier with consequences identified for failures to meet these targets.

7.8.1 TopFocus Entry

On a monthly base, potential TopFocus suppliers are identified based on the quality performance considering the prior 3 month cumulative performance data. As an "early warning" indicator for the degrading quality performance of a supplier, also the prior 4 weeks cumulative performance data are reviewed on a weekly base. All suppliers exceeding the limits are considered candidates in the TopFocus program. The decision about the nomination will be taken from Commodity Management and Global Supplier Quality.

The file TopFocus Documentation Form (FB 7602-65-031_E) is including these data and is also the base for all further documentation and communication. It contains:

- Listing of complaints
- Summary of complaints (last 12 month data)
- Ishikawa Diagram of root causes – based on 5 Whys
- Pareto of Root Causes
- Action Plan – TaskForce Action Form (FB 7602-65-233_E)
- Step Down Diagram

The Supplier Developer provides the initial data to the supplier (Listing of complaints & Summary of complaints) and schedules the TopFocus Kick Off meeting at the supplier location.

Based on the significance of the 8D-Review during the entry of TopFocus the local Supplier Quality Manager defines the necessity to perform a complete VDA6.3 audit, especially if he deems that the current status degraded from the former audit result significantly.

7.8.2 Escalation Process

An escalation process is defined to prevent suppliers from staying indefinitely in TopFocus. If the supplier fails to meet the agreed step down targets or action plan commitments, the issue will be consequently escalated to KOSTAL & supplier's top management.

Consequences for not meeting Step Down Diagram commitment

- Execute a top management review, if the supplier fails to meet timing commitments and/or performance to targets degrades to define:
    - Controlled Shipping Level 1 / 2 (see above)
    - Recommend New Business Hold status
    - Recommend re-source for all affected parts.

7.8.3 Top Focus Exit

The target and the exit criteria can be negotiated individually. In case these differ from the default, the Supplier Quality Director needs to approve them.

Following values are set as default:
- Target: 50 % reduction of complaints within 6 month.
- Exit Criteria: 66% reduction of TopFocus indicator (trend line: 6-month moving average).

An individual, stricter target and exit criteria must be set up for suppliers with a very high initial level of complaints (>15 claims / prior 3 month cumulative performance data).

In order to exit from the TopFocus process, the supplier must
- Be GREEN according to the Step Down Diagram metrics (meeting the target and the exit criteria).
- Have all action items in the action plan closed and confirmed by KOSTAL.

7.9 New Business Hold status (NBH)

The supplier status NBH indicates, that the supplier is barred from any new business with KOSTAL worldwide. This does not affect articles in production. Information of NBH suppliers is binding for all KOSTAL purchasing and engineering organisations.

Reasons for setting the trigger “New Business Hold” are:
- Supplier evaluation with a "C" classification
- VDA 6.3 audit (P1-P7) and/or process acceptance (P4-P6) classified as "C"
- Quality problems
- Logistics problems
- Commercial problems

7.9.1 Cancelling the NBH status

The NBH in KOSTAL’s supplier classification can be cancelled only by the commodity manager and/or the supplier owner. For this the following conditions must be met:
- Supplier assessment: within two weeks from receiving the supplier evaluation the supplier must present an appropriate action plan to eliminate permanently the deficiencies at the location which has been assessed. The supplier must complete all the actions and the technical department of the KOSTAL location which had issued a "C" classification will then check that all the actions have been completed. The result of the new supplier assessment must be at least a "B" classification for the "NBH" to be cancelled.
- VDA 6.3 audit (P1-P7) and/or process acceptance (P4-P6): within one week from receiving the supplier assessment the supplier must present an appropriate action plan to eliminate permanently the deficiencies at the location. In the case of major deviations in *-questions the supplier must define without delay an immediate action for each finding of this kind which is recorded in the audit report. The supplier must complete all the actions and the supplier developer will then check the new status with a follow-on audit. The result of the new audit must be at least a "B" classification for the "NBH" to be cancelled.
- Quality problems: Appropriate actions by the supplier leading to a permanent improvement in quality performance in accordance with KOSTAL's requirements can lead to cancellation of the "NBH". The decision is taken in consensus between the supplier development engineer and the supplier owner.
- Logistic problems: Appropriate actions by the supplier leading to a permanent improvement in supply performance in terms of compliance with delivery dates and quantities can lead to cancellation of the "NBH". The decision is taken in consensus between Production Control and the supplier owner.
- Commercial problems: Appropriate activities by the supplier resulting in a permanent approach to KOSTAL's requirements can lead to cancellation of the "NBH". The decision is taken in consensus between the commodity manager and the supplier owner.

7.10 Finished product recalls

In the case of finished product recalls, caused by purchased parts, the supplier is required to participate in fault analysis, to cover the costs and to supply personnel for containment actions.

7.11 Deviation from Requirements

In the case of deviation from specification, the supplier must submit the deviation request, highlighting the deviation(s) from the stated requirements and his actions to protect the customer, to the responsible Material Requirement Planning controller. If the deviation is approved by KOSTAL, a copy of this deviation must be attached to all containers in the delivery. The deviation request form is available on KOSTAL.com. If new deviations occur, which are not covered by an existing deviation, a further deviation submission/approval must be obtained.

7.12 Accumulated Scrap Management of Decorative Surface Parts (applicable for suppliers to KOSTAL Automotive Electrical Systems)

All the parts mentioned in VDA volume 16 and surface coated parts are identified to be the components with decorative surfaces. The following is the list of decorative components mentioned in VDA volume 16:

- Decorative strips (strips on handles, shaft coverings, frames, crash bars, side protection bars, radiator grills and decorative grids).
- Panels (including mirrors).
- Actuator elements (knobs, buttons, levers, switches, door handles, air inlet nozzles).
- Emblems and lettering.
- Covers in general.
- All chromed elements located in automotive interiors.

All parts visible when installed must be free of faults, dust, dirt, scratches, etc.

The boundary-sample-definition-process is used to define level of tolerance for the decorative components that are subjective in nature. It contains the boundary sample details in both digital and physical mode. Based upon the result of the above-mentioned step three different cases are addressed. Production quality, complaint management and the supplier should carry out the review.

The different cases of the accumulated scrap management process are as follows:

- Case 1: Defects are below the defined quantity level and all the identified defects are previously included in the boundary samples. The complaint management organizes the accumulated scrap meeting with supplier, production quality and supplier developer. The supplier takes the defective parts with him for internal evaluation and training purposes. No charges are made to the supplier.
- Case 2: When the defects are above the prescribed limit, complaint management charges the supplier through the complaint process. All the process must be documented.
- Case 3: When new defects are identified which are not included in the boundary samples, the production quality makes a decision on those parts.
    - Good parts: In case the parts are considered to be good, the boundary samples must be updated.
    - Bad parts: If the parts are declared bad by the production quality, then incoming inspection initiates supplier complaint according to the Complaint management process. The suppliers are charged for the bad parts. All the process must be documented.

7.13 Reworked products

The supplier is not permitted to ship reworked parts to KOSTAL, unless the supplier has obtained a deviation approval from KOSTAL according to chapter 6.7 prior to the shipment of the parts. Rework is any measure to improve defective products so that they can be used. Rework should therefore be performed with particular care. Reworked parts may not differ from non-reworked parts. Written reworking specifications are required for all reworking actions; these are to be agreed with KOSTAL. Reworked parts are to be tested and approved as production parts.

Supplies that include reworked parts must be marked separately in addition to the requirement concerning deviation, which is described in chapter 6.7. The label must show the rework, which has been performed.

KOSTAL may reject a supplier initiated deviation request for rework due to the following reasons:

1) Technical reason
2) Risk evaluation
3) OEM customer specific requirement “no rework allowed”
4) others

7.14 Field Failure Analysis (applicable for suppliers to KOSTAL Automotive Electrical Systems)

The VDA volume Field Failure Analysis is the mandatory guideline for analysis of field returns and warranty claims from the OEM customer broken down on a single purchased part or component. The supplier is obliged to follow a pre-defined Field Failure Analysis process (part analysis with standard tests and tests under load, NTF process), when claimed parts are designated as field returns by KOSTAL and the purchased part is identified as defective.

8 Supplier Performance Monitoring

KOSTAL will complete ongoing supplier evaluation in relation to quality, delivery and cost performance, as outlined in the supplier evaluation guideline, available in the download section on the KOSTAL website. The supplier must take the required action outlined the document, where they fail to meet KOSATL’s requirements. An action plan must be submitted to KOSTAL within 2 weeks with the actions proposed to achieve the necessary requirements.

9 Supplier Management of Sub-tier Suppliers

The supplier must manage and develop their suppliers in relation to the following, according to automotive standards IATF16949, VDA 6.3, AIAG CQI etc.

- Defining Part requirements
- Supplier prequalification
- Supplier Assessment
- Review Technical Capability
- Award Business
- APQP
- Implementation of Control Plan
- Performance Monitoring
- Continuous Improvement
- Requalification

Suppliers must ensure that their sub-suppliers operate an appropriate system for comprehensive traceability. The information provided by sub-suppliers, must be stored by the supplier and retained as the requirement set out in Section 11.

10 Parts history

The supplier must ensure that a reliable parts history record is maintained for each product delivered to KOSTAL.

This must contain, for example, information such as tool corrections, process improvements, index changes, new materials and any other relevant modifications.

It must be retained for at least 15 years after the end of full production.

11 Traceability

The supplier must have traceability implemented for all the product/parts from KOSTAL to supplier's sub-contractors (see chapter 9).

The traceability method implemented by the supplier must be able to identify affected batches or lots of material for any given quality issue. The batches or lots must be kept to the smallest quantity possible appropriate to the material.

This must be done by keeping comprehensive records of the production history, of all manufactured parts, raw materials, machine information, measurement and test data and other important production processes information etc. This must be readily available on request of KOSTAL.

The traceability method should be appropriate to the criticality of the part. This may also be specified in the requirement specification. In special cases, the customer-specific requirements of the OEMs must be taken into account. The parts or containers must be labelled as per the logistic and EDI guideline of KOSTAL.

12 Records retention

The supplier must define and maintain retention periods for documents, records and reference samples.

The following minimum requirements must be met:

All process documentation in relation to quality performance (SPC, yields etc.), testing and material lot information – 15 years after the end of production, at the supplier's premises. On request by KOSTAL must be communicated to KOSTAL on demand in digital format readable by KOSTAL within 24 hours.

For safety-relevant-parts apply requirements as defined in chapter 13. In special cases, the customer-specific requirements of the OEMs must be taken into account.

13 Safety Relevant or "D" parts (parts subject to mandatory documentation and process / system documentation)

"D" parts are parts which have significant safety relevance. Such parts can serve both as "active safety", e.g. braking systems, steering, steering knuckle, and as "passive safety", e.g. crunch zones, safety glass.

In view of producer liability, complete documentation must be kept by KOSTAL's suppliers for such parts. This obligation arises from the supply contract with KOSTAL. The supplier must be able to demonstrate that the specification was met over the entire supply period. This requires that test / inspection documents are kept and stored.

The obligation to keep this documentation covers a period of 15 years, including after the end of full production.

Parts subject to mandatory documentation of this kind are identified with a "D" in technical documents. A further possibility is identification by a box in drawings and documents, as follows:

If the part is safety-relevant (with special documentation requirements as above), a "D" must be entered in the free field. See also KOSTAL standard 0050, DIN 6786 and VDA volume 1.

14 Layout Inspection (Requalification)

The supplier is obliged to check annually whether his deliveries comply with KOSTAL specifications including dimensions, material, reliability, legal requirements, environment and the product control plan. The supplier must present and agree a concept for the implementation of the requalification to KOSTAL during the award phase.

The execution of the requalification and its general result (ok/nok) must be confirmed to KOSTAL. The detailed results must be conveyed to KOSTAL on request. The requirements according to IATF 16949, Chapter 8.6.2 must be observed.

Depending on the results of the requalification process, the supplier is responsible for the definition and implementation of actions required to specification compliance.

In the event of deviations from the specification, the responsible supplier developer of KOSTAL must be involved without any delay.

The starting point of the re-qualification implementation is the ISIR evaluation (yellow or green evaluation, i.e. product and production release) from KOSTAL. The scope and interval of the requalification must be described by the supplier in the control plan.

15 Quality target

The supplier must follow a zero-defect strategy as the guiding principle for all his actions and must align all his activities to this.

The supplier is also called upon to only supply KOSTAL with products free from defects and to provide performances free of defects and must take all measures available to him to ensure that each individual product conforms to the properties in the technical documents.

15.1 Definition of ppm control limit

Until achieving the zero-defect target, a ppm control limit as intermediate objective will be defined by KOSTAL applied on the KOSTAL supplier evaluation. The actual defined ppm control limit will be communicated to the supplier.

On the one hand, the definition of the ppm control limit is based on technological conditions which are commodity-specific and on the other hand on the average of the ppm performance of the suppliers involved in each commodity at KOSTAL.

If the ppm control limit is exceeded short-term additional corrective measures should be initiated and their effectiveness to be proven by the supplier.

Independently, if the supplier is meeting or exceeding the defined ppm control limit, the supplier has the obligation to fulfill the requirements as stated in chapter 7.5 Management of Complaints, as well as to pursue continuous improvement actions.

15.2 ppm calculation method

The failure rate is calculated on the basis of the VDA Volume 2 as follows:

$$ppm = (\text{incorrect parts/delivered parts}) \times 10^6$$

- It counts all incorrect parts independent on the place of occurrence (incoming goods, production, production line failure at customers, field breakdowns).
- After the error analysis, the number of rejected parts will be corrected if complaints are unfounded.
- Self-reported parts before arrival to KOSTAL will not be considered.
- Sample parts of all kinds will not be included.
- Logistic errors, for example damaged goods, faulty declaration, incorrect labeling are considered in the ppm calculation with the number of delivered parts (content of the complete packaging unit).
- Delivered parts: delivery quantity in a performance period normally per shipment (delivery note).

16 Environmental protection and industrial safety

The supplier must observe all the statutory regulations on environmental protection and keeps the impact on people and the environment to a minimum using an appropriate environmental protection organization and suitable facility environmental measures. Introduction and continuation of an environment management system (UMS) according to ISO 14001 or EMAS is recommended for this purpose.

If the supplier performs work at the KOSTAL operating premises, he must observe the **KOSTAL conduct and safety regulations** and must take into consideration the instruction from KOSTAL personnel concerning conduct on the operating premises. He must instruct his employees himself on the regulations applicable at KOSTAL.

The supplier observes the valid regulations of the country of manufacturing, sales and use of the product supplied to KOSTAL. The goods supplied to KOSTAL must comply to the valid GADSL. Apart from this, the supplier must comply with laws of the European Union (EU) and the Federal Republic of Germany in his deliveries, e.g. the REACH Ordinance (Ordinance EU No. 1907/2006), the law on the return and environmentally compatible disposal of electrical and electronic appliances (ElektroG) as the national implementation of Guideline 2002/95/EG (RoHS) and Guideline 2002/96/EG (WEEE) and the end-of-life vehicle law as national implementation of EU Guideline 2000/52/EG and all other regional laws and regulations which are applicable. GADSL conformity has to be recorded through IMDS by the supplier. The supplier must provide the appropriate Material Data Sets (MDS) in the IMDS before the submission of ISIR (see also chapter 4.3).

The supplier notifies KOSTAL immediately of any relevant changes to the goods caused by statutory regulations in particular by the REACH Ordinance, their delivery capability, possible use or quality and agrees suitable measures with us in individual cases. The same applies as soon as and if the partner detects that such changes may occur.

17 Change management

The supplier undertakes to maintain a part history and indicate any changes (product, process, subcontractors) in writing at an early stage to the responsible KOSTAL buyer and seeks approval for the change. Sampling is to be scheduled so that it has been completed by the start of production supply. The part histories are to be maintained from the start of sample preparation to the end of spare part production according to chapter 12.

17.1 Change requests by KOSTAL

If drawings or other specifications are changed by the customer, KOSTAL will provide these to the supplier. Change notifications are effected in writing. Verbal notifications are only of an informative nature and are always to be confirmed in writing. The supplier confirms the receipt of a change notification to KOSTAL within 2 weeks, stating the planned date of use.

The supplier must ensure, using a suitable system, that all the employees concerned are familiar with and apply the current change status. He has to keep records of the distribution of documents and the application of changes.

17.2 Change requests by the supplier

KOSTAL expressively favors changes to the manufacturing process leading to improved quality or streamlining. All changes must be agreed with and approved by KOSTAL before starting any change. It is mandatory to repeat initial sampling.

- The supplier must request all change in written and comprehensive form to the responsible buyer at KOSTAL.
- Concerned are changes of design, specification, process, sub-supplier, production site, material, layout, packaging, label, logistics and others according to IATF 16949
- The supplier shall bear the validation costs and administrative costs incurred by KOSTAL and the OEM customer for its modification.
- The change request shall include a detailed project timing plan outlining the steps envisaged by the supplier to implement and validate and to pre-produce the safety stock of parts to ensure parts delivery until change approval is finalized. In addition, the supplier must provide the expected savings due to the change.

- The supplier may only start to implement the change if he has received the written approval from the responsible buyer of KOSTAL. Irrespective of this, he may start at any time on his own risk by establishing a safety stock.
- The supplier must also submit a change request if the desired change is a corrective action to a quality problem.

18 Other applicable regulations and guidelines

The following substantial external standards and guidelines in the respective valid version are integral parts of this QM Guideline:

- DIN EN ISO 9001 “Quality Management Systems – Requirements“
- IATF 16949 “Quality Management Systems – Requirements in the automobile industry”
- VDA Series “Quality Management in the Automobile Industry“ with all volumes
- Parts Production Approval Process (PPAP) guideline
- Advanced Product Quality Planning (APQP) guideline
- Measurement Systems Analysis (MSA) guideline
- DIN EN 10204 “Metallic products – Types of test certificates“
- DIN EN ISO 14001 “Environment Management Systems – Requirements“
- CQI standards

The supplier has the obligation to only refer to and use the current version of these regulations.