POLYCOM
Integrated Polymer and Mould Solutions

Manual of qualitative requirements for suppliers

POLYCOM Škofja Loka, d. o. o.

1. INTRODUCTION

Our goal is customer, partner and employee satisfaction. We follow the principle of zero product defects. To meet this goal, we are constantly developing and improving our products and services as well as our organizational approaches, knowledge and employee inclusion. The quality of our end products mainly depends on the quality of the purchased materials and services, which is why we intend to develop partnerships with our suppliers.

2. VALIDITY

This manual applies to all suppliers and their locations from which they supply their products to company Polycom Škofja Loka d.o.o.. The quality requirements manual complements the general purchase conditions of the company and other possible documents, signed with the suppliers.

All suppliers whose products are intended for automotive industry buyers are required to have a certified quality system in compliance with standard ISO 9001 as well as a basic knowledge and project management following the APQP method (Advanced Product Quality Planning). If the supplier has no formal training of the APQP method it is required to at least issue a statement with which it confirms that the projects are managed following the APQP method. In addition it is also required to have a system development towards acquiring an IATF 16949 certificate.

All suppliers whose products are intended for automotive industry buyers and products which have safety characteristics are required to have a certified quality system in compliance wirh standard IATF 16949.

3. PRODUCT QUALITY PLAN

The supplier plans product/process quality in accordance to the APQP methodology or a similar method e.g. with appraisal following VDA. The scope of the used method is harmonized with the buyer. The supplier is expected to be acquainted with the following methods and their approaches: APQP, PPAP, FMEA, MSA, SPC, as well as have knowledge of the IATF standard requirements.

3.1 Product safety

The company should put a process in place for product and process safety management and in case of identification should consider the following points:

a) Transmission of information about product safety requirements through the organization

b) Informing the buyer about all the matters pertaining to point a)

c) Separate validation in DFMEA.

d) Definition of marks relevant for product safety

e) Definition of safety marks and their management throughout the developmental and production phase.

f) Separate publication of control plan and PFMEA validation

g) Action plan.

h) Definition of responsibilities and escalation procedures.

i) Definition of training needs for employees

j) Monitoring and managing changes that might affect safety

l) Assurance of product traceability for the entire production to the complete supply chain

m) Lessons learned when introducing a new product

Regarding product safety, specific buyer requirements for labelling, packing, managing, handling, improvements, etc. need to be taken into consideration.

The supplier needs to determine a person (PSB) which will plan, implement and improve the product safety assurance processing. If the supplier does not determine a person, all tasks and responsibilities regarding product safety is undertaken by the management of the supplier company.

3.2 Risk analysis

For the identification of possible risks and the corrective action planning, the supplier needs to foresee all methods and procedures and implement them at the beginning of the business or project. We advise at least the method FMEA to be used for risk identification and its reduction, assessing the risk in all steps of the process: from material reception, production steps to the issuing of the products from the warehouse, as well as assessing the risks in the supporting processes.

The risk management plan must include all measures that have been foreseen with the FMEA method. Both documents of FMEA and Management plan need to be prepared in compliance with the current version of the manual APQP AIAG.

3.3 Process capability and control requirement

The requirements for process capability and control are listed as follows:

<table>
<tr><th rowspan="3">Characteristics</th><th colspan="4">Minimal requirements</th></tr>
<tr><th colspan="2">Process validation</th><th colspan="2">Control plan</th></tr>
<tr><th>Attributive</th><th>Valuative</th><th>Attributive</th><th>Valuative</th></tr>
<tr><td>Safety</td><td rowspan="2">A minimal control of 20 product pieces</td><td>Cm≥Cmk≥2
Pp≥Ppk≥2</td><td>100% control in automatic control or in compliance with buyer requirement</td><td>100% control in automatic control
Or SPC and Cp>Cpk 1,67</td></tr>
<tr><td>Critical and important</td><td>Cm≥Cmk≥1,67
Pp≥Ppk≥1,67</td><td>100% control in automatic control or in compliance with buyer requirement</td><td>100% control in automatic control
Or SPC and Cp>Cpk 1,67</td></tr>
<tr><td>Functional</td><td>In compliance with FMEA assessment</td><td></td><td>In compliance with FMEA assessment</td><td></td></tr>
</table>

4. AUTHORISATION REQUIREMENTS

Before the delivery of goods, the supplier must obtain the buyer's consent for the following cases:

1. When implementing a new product and then after every modification;
2. For all products with a rejected PPAP;

3. For construction product changes (when changing a drawing, material specification…);
4. Before the implementation of new technology;
5. When a production location move occurs;
6. When implementing or changing a tool;
7. When implementing changes in the process;
8. When implementing changes in the installed materials;
9. Before the change of material and part supplier; and
10. Every time there is there is a break longer than 12 months.

5. RELEASE OF SERIES PRODUCTION

The supplier is provided with the requirements for preparation of samples and documentation by the buyer on the PPAP prescribed form. The supplier prepares PPAP according to the buyer's requirements on the buyer's forms or in compliance with the last version of the PPAP AIAG or VDA 2 manual.

5.1 Measurements and testing

The supplier must perform all measurements and testing as it is defined in the PPAP sampling order. For any drawing deviation, the supplier must obtain deviation approval from the buyer.

5.2 Statistical process control (SPC)

SPC stands for »Statistical Process Control« and is a method of quality control which employs statistical methods to monitor and control a process (cf. point 3.3.).

Valid tools are control chart or other similar software for monitoring statistical processing.

5.3 Measurement system analysis (MSA)

Measurement equipment used by the supplier in stability analysis both in project phase and serial production has effective for the required tasks. Effectiveness is proved with R&R and NDC measurement system analysis.

5.4 Serial production requirements

Before the supplier starts with serial production it has to produce this series under serial conditions, which have to take place from one to eight hours and prove stability with ppk and a Run&Rate test report. The sampling is done from the produced quantity, according to buyer requirements.

5.5 Packaging labelling and PPAP sample delivery

Samples which are delivered by the supplier along with the PPAP documentation have to be properly labelled. Samples from multicavity tools have to include the number of the cavity. PPAP samples need to be prepared manually, separate from the serial products.

5.6 Process validation

Before the serial production SOP the supplier must perform a process validation with the R&R method, with the help of which it checks whether it is able to produce the required product quantity. In the case where the required quantities are not met, it is necessary to prepare an action plan.

5.7 PPAP status decision

Based on the presented samples and PPAP documentation, the buyer states its decision on the PSW form or on the headline form according to VDA 2. There are 3 possible decision levels:

1. Authorised (the product meets the requirements and the supplier can start with production)
2. Authorised subject to conditions (supplies are limited in time or quality and it is necessary to do a re-sampling before the production).
3. Denied (the presented samples and documentation do not meet the requirements. The supplier needs to effect improvements and resubmit the PPAP documentation).

5.8 Requalification

The supplier must perform a production requalification at least once per year. The requalification scope is defined with the buyer or the supplier checks all product characteristics regulated on the drawing or specifications and prepares the evidence for the process ability for special and critical characteristics.

6. MANAGING CHANGE

The supplier must communicate every process and product change before its implementation. The changes need to be communicated in the following cases:

a) Before the implementation of new technology which at the validation was not used in the production process;
b) When moving to a new location,
c) At the implementation of a new tool or the modification of an existing one
d) At the implementation of process changes (new testing methods, the usage of alternative equipment)
e) When changing materials and integral product parts
f) When changing sub suppliers of integral parts and materials.

The supplier communicates the change to the buyer in writing following the process described under 4.

7. DEVIATION AUTHORISATION

In the case where the supplier discovers a deviation during production or shipping, it must immediately inform the buyer. The supplier informs the buyer in writing. The products, authorised for supply by the buyer, must be clearly labelled by the supplier. Every package must be labelled

8. INCOSISTENCY MANAGEMENT

When receiving the products supplied by the supplier a deviation can be found. The action procedure can include the following scenarios:

- Rejection of the whole quantity and return to supplier,
- Sorting the quantity by the supplier or an external service in agreement with the supplier.

All products found to be defective after sorting are recorded as bad parts for PPM. For each deviation the buyer sends a claim report and the supplier must respond to the claim within 24 hours. The reporting rules and time frame are stated on the 8D form. In the case where the supplier cannot prepare the report in a certain time limit due to the complexity of the report, it must notify the buyer in writing. The notification must include a new deadline, which must not exceed the period of 15 days.

8.1 Reimbursement

The buyer is entitled to charge the costs for any deviations, according to the price list included as an enclosure to the General purchase conditions. The costing is determined following an invoice or debit note.

9. SUPPLIER AUDIT

The supplier must enable the buyer to carry out audits in the areas where its processes take place. At the beginning of establishing cooperation, the supplier carries out a Potential analysis (following VDA 6.3) and Process analysis (following VDA 6.3), which assesses the P2-P7 element effectiveness. After the audit following its normal procedure, the buyer presents an audit record and demands the preparation of an action plan for deviation elimination within a time limit defined by the buyer.

In case of a potential analysis (at a potential supplier) the potential supplier must eliminate all deviations stemming from the Potential analysis report.

Following constant improvement, the supplier must carry out internal product, process and system audits.

10. TRACEABILITY

Material traceability: the supplier needs to ensure a FIFO system for materials and products.

It must ensure traceability for at least the following data:

- product production date
- product batch, including all batches of all components
- testing results

and keep data records.

The traceability system must be authorised by the buyer.

11. DOCUMENT ARCHIVING

At the request of the buyer, the supplier is obliged to submit the entire quality control documentation of the supplied goods, as well as product safety records. For critical characteristics the documentation archiving time is of 15 years from the end of production or tool exclusion. The documentation that needs to be archived is the risk management plan, FMEA, PPAP documentation and corresponding samples, validation reports, requalification reports, traceability records, drawings, staff training records, measurement and testing results.

The minimal time of record archiving must be organized for the period of at least three years after the conclusion of serial production or tool exclusion.

12. TERM CLARIFICATION

APQP- Advanced Product Quality Planning

FIFO- First-in, First-out

FMEA – Failure Mode and Effects Analysis

PSW- Part Submission Warrant

PPAP- Product Part Approval Process

PSB- Product Safety Representative

R&R- Repeatability & Reproducibility

8D- Eight Disciplines Problem Solving Process

SOP- Standard Operating Procedure

NDC- Number of Distinct Categories

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