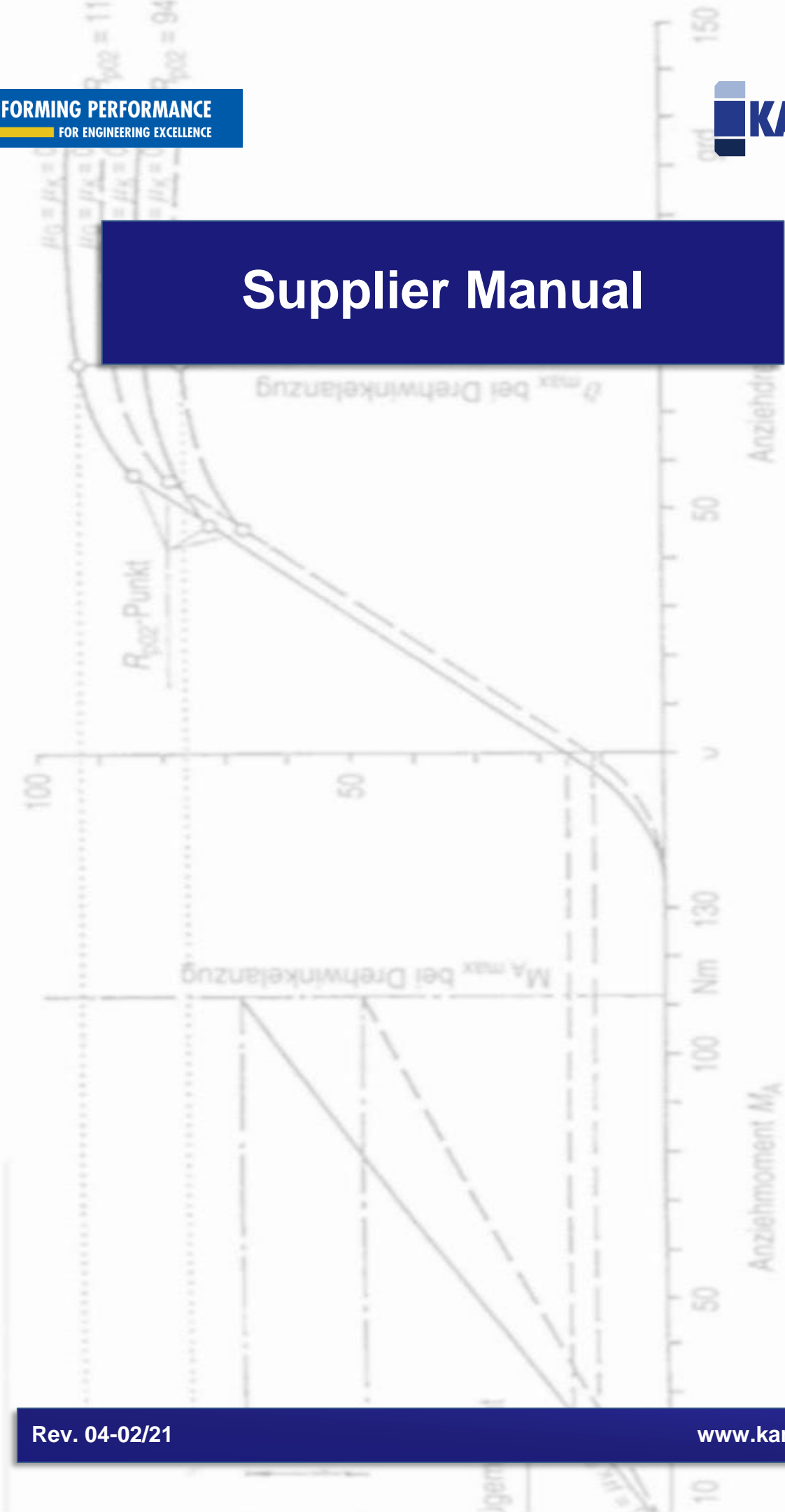


# Supplier Manual



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# Preface



KAMAX is a partner of the automotive and truck industry and develops, manufactures and supplies high tensile bolts which must satisfy high demands on quality and safety. The automotive and truck industry expects from KAMAX, and therefore, we expect from our suppliers, on-time deliveries, zero defects and environmental friendly products and services, at cost effective prices.

The objective of this Supplier Manual is to ensure smooth processes between us, KAMAX, and our suppliers and to establish a joint strategy which strengthens our common market position.

This KAMAX Supplier Manual has to be considered as a customer-specific requirement within the meaning of IATF 16949 and complements any other contract or agreement signed with our supplier.

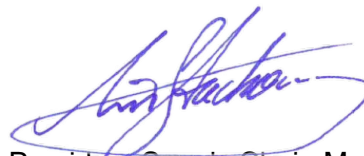
This document does not represent any limitation to the rules and standards referred to or to legal requirements.

Our suppliers are expected to drive continuous improvement processes, to implement appropriate risk management policies and to establish *zero defect* strategies within their organizations, based on partnership, demonstrating flexibility and commitment to common growth and excellence.

We also expect from our suppliers full EHS compliance, commitment to our Supplier Code of Conduct and business relationship as well as an adequate corporate social responsibility policy.

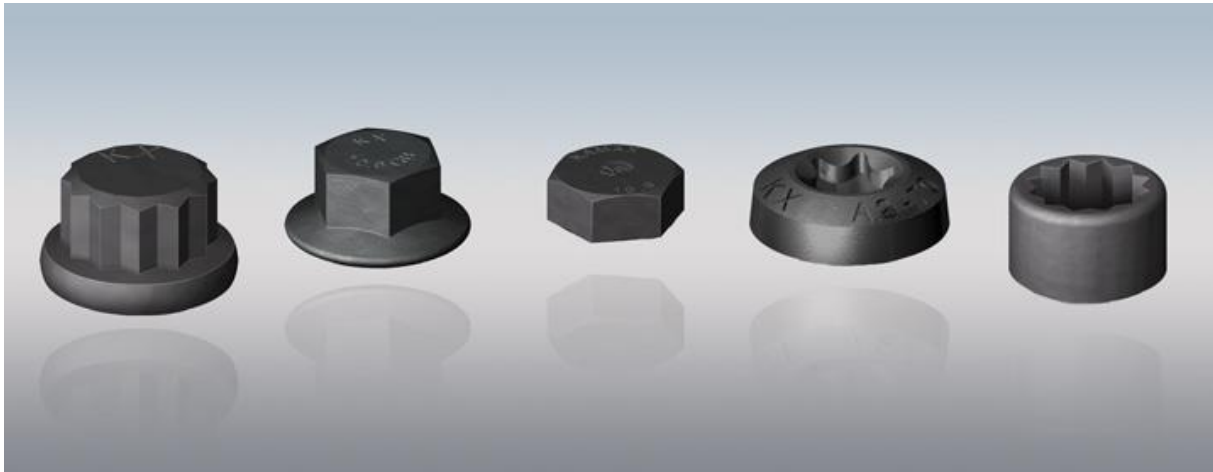
A handwritten signature in blue ink, appearing to read "D. H. Alshakel".

Vice President Quality Management

A handwritten signature in blue ink, appearing to read "Amir Alshakel".

Vice President Supply Chain Management

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# 1. General requirements



## 1.1. General

The KAMAX Supplier Manual informs suppliers and potential suppliers of the terms on which KAMAX conducts business. As this is a general document not intended to cover every aspect of every situation, KAMAX may issue other documents, which will refine the details of the terms on which KAMAX proposes to do business with any particular supplier.

Suppliers will be required to review and sign a variety of documents in order to do business with KAMAX. These documents may include standard non-disclosure agreements, purchase terms and conditions, quality agreements, master agreements, logistic agreements, as well as the KAMAX Supplier Code of Conduct.



## **1.2. Scope**

This KAMAX Supplier Manual is valid for the supply of production materials and services as well as for the supply of non-production materials and CAPEX to the KAMAX operations worldwide.

Some chapters may not be generally applicable, depending on the product or service supplied, such as the ones dealing with the initial samples approval process or with critical, special or safety characteristics.

The KAMAX Supplier Manual can also be found on our website under the following link: [http://www.kamax.com/uploads/media/KAMAX\\_Supplier\\_Manual.pdf](http://www.kamax.com/uploads/media/KAMAX_Supplier_Manual.pdf)

## **1.3. Supplier registration**

Suppliers are responsible to update and submit the information provided to KAMAX upon any changes in their organization.

All data have to be submitted via the KAMAX supplier portal Synertrade.

## **1.4. Supplier Code of Conduct**

Suppliers shall adopt and comply with the KAMAX Supplier Code of Conduct (see 1.22).

The complete Supplier Code of Conduct can be found on our website.

### **1.5. Quality Management System**

Suppliers are required to maintain an IATF 16949 certification or an ISO 9001 certification with the intent of upgrading to IATF 16949 certification through an IATF recognized certification body within a reasonable time frame, according to the development process described in IATF 16949 clause 8.4.2.3. In any case, conformity to the customer specific requirements of the automotive industry according to IATF 16949 has to be demonstrated by the supplier. Laboratory registration to ISO 17025 or equivalent, e.g. A2LA certification, is also favourable.

Suppliers are responsible for communicating and/or submitting to KAMAX the new certificates in case of re-certification or upgrade.

KAMAX reserves the right to carry out audits and assessments on quality management systems, processes, and products, if applicable together with KAMAX customers, after prior notification to the supplier. For this purpose, access to the supplier premises is to be granted to the KAMAX representatives and mutual customers.

### **1.6. General Quality expectations**

All KAMAX suppliers are expected to deliver high quality products and services, and to apply continuous improvement policies. KAMAX is looking for suppliers who demonstrate flexibility, commitment to common growth and excellence.

KAMAX expects from its suppliers:

- First quality products and services that fulfil all KAMAX specifications
- On-time deliveries
- Competitive costs
- High quality service
- Technical competence
- Continuous improvement
- EHS compliance
- Commitment to business relationship
- Appropriate risk management
- Adequate social responsibility

### **1.7. Quality objectives**

Suppliers are expected to develop a “Zero-Defects Strategy” and take all necessary actions to achieve the “Zero Defect” target. Appropriate internal key-process-indicators have to be defined to measure and assess the quality performance and to achieve the established objectives.

The following minimum requirements are applicable with regards to key process indicators and their targets:

- Internal and external complaint rates, preferably based on parts-per- million (ppm) or percentage of defects (%)
- Number of quality issues
- Cost of quality, including cost of defects, prevention and detection

### **1.8. Environmental, health and safety regulations**

KAMAX is committed to the protection of the environment within the complete supply chain with internal global standards which exceed legal regulations. KAMAX therefore expects from its suppliers to show voluntary commitment to environmental protection through the implementation and certification of an adequate environmental management system based on ISO 14001 or EMAS as well as to comply with the “Paris Agreement” to reduce the CO<sub>2</sub> emissions.

Suppliers must also meet, in general, all applicable local legal regulations regarding health and safety as well as the guidelines described in the UN initiative “Global Compact” and the “UN Guiding Principles on Business and Human Rights”.

A certification of the Occupational Health and Safety Management System (e.g. based on OHSAS 18001 or similar) is highly recommended.

### **1.9. Corporate Social Responsibility**

KAMAX is extremely aware of its social responsibility with regard to the observance of human rights. We therefore require all of our suppliers to adhere to the guidelines described in the UN initiative “Global Compact” and the “UN Guiding Principles on Business and Human Rights”.

### **1.10. Subcontractors**

Suppliers shall develop the requirements of this Supplier Manual within their supply chain and ensure that their subcontractors comply with these requirements.

Any change of subcontractor must be notified in advance to KAMAX and needs a new approval process.

KAMAX reserves the right to audit subcontractors, subject to prior notification, possibly with customer representatives.

However, this does not release the supplier from any of his responsibilities towards KAMAX and the subcontractor.

### **1.11. Advanced Product Quality Planning (APQP)**

See Chapter 2. Quality planning.

### **1.12. Initial samples approval process**

The purpose of the Initial Samples Approval Process is to ensure that all part requirements have been understood by the supplier and that the supplier's process is able to produce compliant product consistently.

First samples have to be documented, if nothing else agreed in writing, according to the current edition of the AIAG PPAP Manual or VDA Volume 2.

Recording material data in the IMDS (International Material Data System [www.mdsystem.com](http://www.mdsystem.com)) is a prerequisite for the Initial Samples Approval Process.

If nothing else is agreed, initial samples approval process is required:

- If a product is ordered for the first time (requested in the Purchase Order)
- After the supplier has changed a subcontractor involved in the manufacturing of the product
- For all affected characteristics after any product modification
- For all affected characteristics in case of a drawing index modification
- In case of a delivery stop
- In case of an interruption in delivery or production of more than one year (requalification)
- In case of a change in the production processes
- In case of a relocation of production or the use of new or relocated machinery and/or operating materials

To identify the characteristics, matching numbers must be used in the initial sample inspection report and in the accompanying current drawing released by KAMAX.

The supplier is responsible for acquiring the corresponding updated version of all AIAG PPAP and VDA documents and manuals mentioned in this Supplier Manual.

The initial samples shall be delivered to the corresponding KAMAX operation with a clear identification (e.g. "Attention: FIRST SAMPLES").

### **1.13. Statistical methods**

Suppliers shall use appropriate statistical methods to minimize the risk of process failures, to reduce variability and to monitor and control their processes, e.g. utilizing SPC tools.

#### 1.14. Process capability

The supplier shall establish appropriate controls of the relevant characteristics to achieve the requirements. If nothing else is agreed, the following process capability values shall be achieved:

- Machine capability  $C_{mk} \geq 1,67$
- Short term process performance  $P_{pk} \geq 1,67$
- Long term process capability  $C_{pk} \geq 1,33$

Process capability shall be monitored, recorded and submitted to KAMAX as requested. In case this process capability cannot be achieved, necessary actions shall be taken, e.g. 100% inspection.

Detailed information about process capability can be found at VDA Volume 5 and at AIAG SPC Manuals.

#### 1.15. Product safety

Product safety is of highest priority. Critical, special or safety characteristics require special attention, due to the fact that deviations in these characteristics can seriously affect product safety, product lifetime, product functionality, quality of the following manufacturing operations as well as passengers' safety and legal regulations.

These characteristics are described in VDA 1 and defined in our Technical Delivery Specification KN 6003 and have to be considered as such in the FMEA and Control

Plans. Further requirements about retention periods of the documented information are described in VDA 1 and in Chapter 3.3 of this Supplier Manual.

Suppliers shall nominate a Product Safety Officer according to the requirements of the automotive industry (e.g. VW Formel Q) and provide this information to KAMAX through the corresponding Purchasing contact.

#### **1.16. Identification and traceability**

The supplier is obliged to ensure the traceability of the products and services supplied. In case of any detected defect, the traceability should allow the containment of the suspect quantity. This information shall be linked to the data provided by KAMAX (Lot-No.).

The identification must be readable even after transport and storage of the products.

#### **1.17. Order and cleanliness**

The supplier shall establish appropriate procedures to maintain order and cleanliness in its premises. Self-assessments based on 5S or similar methods might be used.



### **1.18. Audits. CQI Self-assessments**

KAMAX may conduct audits at the supplier to verify its production process, in case of major problems or as a preventive measure.

The suppliers shall be informed in advance about the date and the scope of the audit. Audits are based on the VDA Volume 6.3 (Process audits), if nothing else is agreed with the supplier.

After the audit, the supplier shall be informed about the result of the audit and also requested to submit a detailed improvement plan, including actions and due dates.

Plating, coating and heat treatment suppliers are requested to perform an annual self-assessment according to the corresponding AIAG CQI Standards and to submit its front sheet to the corresponding Supplier Development contact at KAMAX.

### **1.19. Changes to products or processes**

The supplier must notify any changes to the product or process in advance. If nothing else agreed, these have to be document the corresponding initial samples report and approved by KAMAX accordingly (see 1.12). These changes shall be filed together with the history of the product and process.

### **1.20. Measurement system analysis**

The supplier shall ensure that all the measuring equipment is being controlled and calibrated according to the established frequencies.

The verification must be carried out according to the requirements of VDA Volume 5 or AIAG MSA Manual.

### **1.21. Quality complaints**

KAMAX will inform the supplier as soon as a problem, related to the supplied product or material, appears.

This may happen during the incoming inspection, during the production process, after delivering the product to the customer or in the field.

Additionally, samples of the defects can be provided to the supplier, if available.

A response in form of an 8D Report is requested. At a first step, a 3D Report has to be submitted to KAMAX within 48 hrs. after receipt of the complaint, if nothing else has been requested by KAMAX. Also appropriate problem solving techniques have to be used by the supplier, as *5 Why*, *Ishikawa* diagrams, etc..

The supplier shall inform other KAMAX operations immediately in case these could also possibly be affected by the same quality issue.

A complete 8D Report has to be issued within 2 weeks. The supplier shall inform KAMAX about the effectiveness of the corrective actions. Until the corrective actions have been successfully implemented, the supplier must deliver 100% certified products, with the corresponding identification.

In case of a complaint, the supplier shall bear all cost related to repairs, reworks, sorting actions, expedites, etc..

KAMAX will inform the supplier about these costs as soon as these have been evaluated. Suppliers are requested to respond within 5 business days after receipt.

If needed, KAMAX will apply the internally defined escalation model.

### **1.22. Agreements**

KAMAX establishes agreements with important suppliers. The following agreements, together with the KAMAX Terms & Conditions, regulate the business relationship between the supplier and KAMAX:

- Quality Agreement
- Logistic Agreement
- Non-disclosure Agreement
- Supplier Code of Conduct

Suppliers are expected to adhere to and comply with these agreements.

### **1.23. Continuous improvement**

The supplier shall implement a continuous improvement strategy. The following aspects must be taken into consideration:

- Reduce process variability and thus, increasing process capability
- Increasing productivity
- Adapting inspection frequency to the real need
- Eliminating rework and scrap

- Reducing risks through a systematic approach
- Analysing internal and external complaints
- Effective cost improvement
- Implementing lessons learned

#### **1.24. Supplier approval and status**

Before starting with serial production, suppliers need to be officially approved and included in the KAMAX internal List of Approved Suppliers.

The approval is based on an initial potential analysis, on the acceptance of the corresponding Technical Delivery Specifications and Agreements (see 1.22), on the success of the trial order and, finally, on the result of a process audit.

The process audit should be performed within 6 months after having completed the potential analysis and once the supplier started delivering the first trial orders to KAMAX.

KAMAX distinguishes between 4 types of suppliers: Potential, Standard, Key and Strategic suppliers. The criteria for this classification have been internally determined by KAMAX. Orders, and especially those related to new projects, are being preferably placed with strategic suppliers.

### **1.25. Supplier evaluation**

KAMAX performs a continuous evaluation on key suppliers of relevant commodities. This assessment (Report Card) considers quality, logistics, service as well as innovation and development potential and classifies the suppliers in 3 categories: A, B and C. Suppliers are being informed periodically about their performance and shall use this information for their continuous improvement activities.

They are expected to respond to the evaluation reports according to the KAMAX requirements, including the confirmation of receipt for A-suppliers as well as detailed action plans in case of B- and C-suppliers.

Suppliers shall use the information contained in the Report Card for their Continuous Improvement processes and consider the achievement of an A-classification as a Quality Target.

## 2. Quality planning



The Advanced Product Quality Planning refers to a structured method of defining and establishing the necessary steps to assure that a product satisfies the customer requirements. The supplier must have a documented process to ensure that all elements of the APQP process are completed properly and on time.

Suppliers are required to establish an Advanced Product Quality Planning according to AIAG APQP Manual or VDA Volume 2 for every new part supplied to KAMAX. This applies, especially to the commodities Purchased Parts and Coating / Plating. For other commodities, the APQP is recommended and would be requested, if necessary, in the RFQ.

At a minimum, if nothing else is requested from the corresponding KAMAX Quality Department, the APQP file should include the following phases:

- Technical review
- Risk and feasibility assessment
- DFMEA (if applicable)
- Design review (if applicable)
- Gage review
- Process flow chart
- PFMEA
- Control Plan
- Run @ Rate

### **2.1. APQP technical review**

The purpose of the APQP technical review is to ensure that all requirements in the RFQ have been understood and that the supplier has a plan to produce the parts meeting all KAMAX requirements.

### **2.2. Risk and feasibility assessment**

The supplier shall review all technical documents (e.g. drawings, specifications, ..., etc.) provided by KAMAX and evaluate the risk associated with the processes.

This analysis shall include the feasibility study for the object detailed in the specifications and the RFQ.

### **2.3. Design FMEA (if applicable)**

If the design of the product is under supplier's responsibility, a DFMEA has to be performed. This has to be a living document throughout the phases of the product development supporting the design process in reducing the risk of failure.

#### **2.4. Design review (if applicable)**

The design review has the target to ensure that the design has been adequately defined to enable construction of tools and gages.

#### **2.5. Gage review**

The gage review shall consider the design, construction and calibration of the gages used to verify the product.

#### **2.6. Process flowchart**

The process flowchart provides a logical pictorial representation of the process flow that can be used for the definition of the PFMEA, Control Plans, etc.

#### **2.7. Process FMEA**

The process FMEA ensures that all potential failure modes of the process have been considered and addressed to reduce risk of defects through an appropriate RPN reduction strategy.

The FMEA is thus an important instrument for preventing defects. It must be carried out in such good time that the results and measures to be taken can still be incorporated into planning.

The FMEA must be developed and/or revised in the following cases:

- development / production of new parts
- introduction of new manufacturing methods



- relocation of plants
- drawing changes
- process changes
- if defects occur

The complete and detailed procedure is described in VDA Volume 4 and AIAG FMEA Manual.

## **2.8. Control Plan**

The control plan represents an effective planning tool for the complete process, including manufacturing, assembly and inspection of the parts.

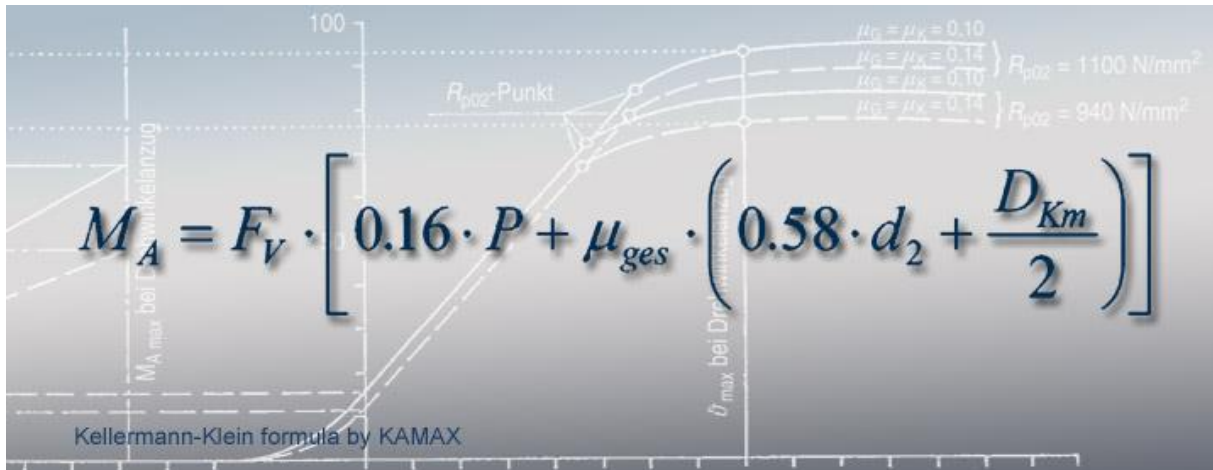
It should be the result of a team work including employees from the different areas involved in the process, such as planning, manufacturing, and quality as well as other affected departments.

The results of product (design) and process FMEA, previous experiences with similar processes and products, as well as the use of continuous improvement methods must be considered in the control plans.

## **2.9. Run @ Rate**

The target of the *Run @ Rate* methodology is to verify that the supplier's actual manufacturing process, while operating under normal operating conditions and under total customer requirements, is capable of producing components that simultaneously meet quality and daily contracted capacity.

## 3. Further requirements



### 3.1. Preventive maintenance

The supplier shall develop and implement a system for preventive maintenance to ensure the delivery capability.

The maintenance plan shall include the maintenance intervals as well as the extent of the maintenance.

### 3.2. Risk management

The supplier shall develop and implement a risk management strategy to minimize potential process failures.

Furthermore, an emergency strategy, documented in an emergency plan, must be established for all processes that can put in risk the delivery of the parts, materials or services to KAMAX.

The emergency plan shall consider alternative manufacturing sites, alternative tools or material sources, procedures in case of fire, natural disaster, cyber-attack, etc. in order to avoid supply-chain breakdown

### **3.3. Training**

The supplier shall establish an adequate training program for all the employees with responsibilities in the design, manufacturing, inspection and delivery of the products or services.

Special requirements shall be considered for personnel dedicated to critical processes, like heat treatment, parts inspection, etc..

### **3.4. Retention periods**

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

If nothing else is agreed, the following minimum requirements must be met:

- For normal parts: 15 years
- For parts with critical or safety characteristics: 30 years

These regulations do not replace legal requirements.

### **3.5. Insurances**

The supplier must take out a third-party liability insurance policy covering the risks related to product liability as well as to possible recalls.

The Supplier is liable for all damage caused by defaults of the delivered products in the scope of contractual responsibility and the product liability laws.

Evidence of the insurance policies has to be provided to KAMAX who will evaluate if the coverage of the policies is reasonable.

Any change in the terms and conditions of the insurances must be communicated to KAMAX.