

# METEOR

High performance  
sealing systems



**Quality Guideline**  
for  
**Suppliers**

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## 1. Introduction

Companies are rated according to products delivered and services rendered. Besides acceptable market price important criteria emerging towards this end are lasting quality, adherence to deadline as well as client service and support with problems.

At **Meteor GmbH** we are suppliers to the automobile industry and we also supply other technical applications, so we are defined by strict requirements.

The following important criteria/guidelines should be observed by companies desiring success in this business:

- Client satisfaction as determining factors for success
- Employee satisfaction contributing to safeguarding the future
- Process-oriented thinking and negotiation to enhance organisation efficiency
- Competitive productivity to achieve fair market pricing structure
- Partnership-type supplier development contributing to competitiveness
- Sustainable and careful handling of resources to demonstrate environmental consciousness
- Compliance with legal provisions and ethical standards

Quality assurance measures and methods currently applied are aggregated in these quality guidelines. Together with our suppliers we set ourselves a target of on-going development of client satisfaction and competitiveness.

These quality guidelines represent guiding principles for cooperation between **Meteor GmbH** and our suppliers, and they form an integral part of our purchasing conditions.

The latest version of this Quality Guideline for Suppliers will be available at any time on our homepage: [www.Meteor.de](http://www.Meteor.de).

We are convinced that these guidelines contribute to establishing positive cooperation between **Meteor GmbH** and our suppliers.

*Notice:*

*In case of any inconsistencies the german version shall prevail.*

## 2. Supplier qualification

### 2.1 Selection and approval of suppliers

At **Meteor** we purchase production materials and quality-related services for prototypes and series parts exclusively from a list of approved suppliers. All suppliers must maintain a certified quality management system.

New suppliers are added to the list of approved suppliers if the following criteria are fulfilled:

1. Minimum certification under DIN EN ISO 9001, preferably IATF 16 949
2. Positive financial status report
3. Positive rating following visit by representative of purchasing and quality management
4. and/or positive potential analysis according VDA 6.3
5. or already approved supplier of another **Meteor groupe** with positive supplier rating

Existing suppliers whose QM certificates (IATF 16 949, DIN EN ISO 9001 or equivalent norm) expire and are not renewed find measures are taken in consultation with specialist areas involved and might conceivably lead to termination of business relationship.

In the process of supplier selection existing suppliers are subject to renewed audit as required.

If this is required in individual cases, **Meteor** reserves the right to examine suppliers' production processes. Possible reasons are:

- Introduction of new products

- Production start-up following technical changes
- Change of plant location
- Inadequate series quality from supplier
- poor delivery performance

The supplier must grant **Meteor** the right to carry out inspections on supplier premises into whether products delivered, process, product and services meet specific requirements. Upon request of end client and upon liaising with supplier this may be performed as a joint site visit.

## 2.2 Supplier development

**Meteor** has the obligation of developing our suppliers with the aim of complying with IATF 16 949 requirements. **Meteor** is therefore prepared to offer support to our suppliers.

## 2.3 Customer requirements in supply chain

The specific customer requirements along the supply chain have to be fulfilled. For that, **Meteor** is obliged to forward the corresponding customer requirements to their suppliers. According IATF 16949 the suppliers are obligated, to forward the customer requirements as well to their sub-suppliers. By request **Meteor** is prepared to offer support to their suppliers and to provide the related information / requirements.

Customer requirements exist for instance from the OEM's (among others):

- BMW BMW - Customer Specific Requirements
- Daimler MBST – Mercedes Benz Special Therms
- Fiat Fiat – Customer Specific Requirements
- Ford Ford - Customer Specific Requirements
- Opel Opel/Vauxhall - Customer Specific Requirements
- Renault Renault – Customer Specific Requirements
- VW VW - Formel Q - Konkret

## 3. Advanced Product Quality Planning / APQP

Quality planning forms the basis for pre-empting potential errors and making on-going improvements, and the process involves the complete product life cycle from product/process development incorporating initial sample deliveries through to series production, and therefore it requires interdisciplinary cooperation by team members and maintenance of a systematic procedure.

For these reasons **Meteor** expect suppliers to engage in quality planning in line with provisions of

- VDA vol.: “Maturity Level Assurance for new Parts” or
- AIAG vol.: “APQP - Advanced Product Quality Planning” and “Control Plan”.

### 3.1 Specifications and requirements

Supplier undertakes:

- To obtain and observe legal provisions, specifications, product concept catalogues and norms in their valid versions (corresponding with drawing data)
- To request product concept catalogues and rate, adjust and comply with requirements
- To determine and comply with special features with relevance to lasting function, aesthetics, process potential and important process parameters. Final adjustment takes place together with **Meteor** quality planning department.
- To point out any missing information such as specifications and norms
- To point out any documentation inaccuracies to the officer responsible in purchasing department.

## 3.2 Failure mode and effect analysis (FMEA)

In an effort to identify possible product errors and rate their effects on overall product, users and/or identify ensuing error costs **Meteor** expect suppliers to draw up a potential error and factor analysis. This analysis should cover all risks possibly stemming from product design (system FMEA product) and production, packaging and transportation processes (system FMEA process).

**System FMEA - Product** is only to be drawn up when the supplier has with his approval been entrusted with development responsibility for the component he supplies. Scope and timing for drawing up the expected system FMEA - product is to be adjusted in consultation with the responsible **Meteor** quality planning operative.

**System FMEA - Process** is called for as a matter of principle in the case of new and amended processes and those containing elements demonstrably susceptible to malfunction and error (e.g. following client complaint).

The System-FMEA – Product / Process generally produces subject matter for the control plan and might include validation tests and tests relevant to the series whose purpose is to minimise identified potential risks.

System-FMEA – Product / Process should be drawn up in line with guidelines under VDA vol. 4. Risk rating and measures taken by supplier are to be submitted to **Meteor** for inspection upon request.

## 3.3 Control Plan

In the context of test planning the supplier is required to draw up a control plan in compliance with the provisions of IATF 16 949, appendices 1 and 2, which is designed to embody the whole process chain (goods inward test to goods outward test) and phase describe for each step relevant tests (including 100 % tests and validation tests for prototypes, initial units and random and requalification tests for series parts) for current product life. Minimum contents are:

- Process step/work procedure under review
- Feature to be tested in terms of
  - a. Specification, if available, with concrete tolerance limits and
  - b. In accordance with system FMEA – Process / Product (including additional designation in case of relevance to function or security)
- Testing device to be used
- Testing interval
- Number of pieces for testing per interval
- Person/position performing task
- Type of result documentation (e.g. manual notes by end user, automatic data saving,...)
- Reaction rules for divergences (e.g. repair work in line with directive XY, disposal of part,...)

The production control plan is to be kept updated throughout the lifetime of a product. Further updating may be required in the wake of client complaint and product and/or process adaptation.

The control plan is to be open to inspection by **Meteor** during sampling.

## 3.4 Measuring and testing equipment inclusive of inspection equipment

In order to ensure specification conformity in products delivered and evidence and maintain the conformity of production processes, supplier should use suitable measuring and testing equipment together with associated software and programs).

The fundamental suitability of planned measuring and testing equipment is to be negotiated between supplier and **Meteor** prior to implementation and is to be evidenced by supplier on the occasion of sampling with the aid of capacity tests/measuring system analyses (in line with VDA vol. 5 or AIAG/MSA). All testing equipment is to be rated in the MSAs, if listed in the product-specific control plan (PLP) or control plan.

This very testing equipment should equally be monitored by the supplier's surveillance system and subjected to regular calibration.

### 3.5 Verification of process capabilities

Process capacity tests serve as verification that the diversification of identified and agreed important product/process characteristics is so miniscule that there exists a safety margin to the tolerance limits, such that 100 % testing of "process capable" features can be dispensed with.

In line with control plan and specifications in connection with sampling and upon request supplier should submit proof of the main characteristics of process capabilities during series production.

As a matter of principle ascertainment of process capabilities should proceed with the aid of the provisions of VDA vol. 4 and AIAG/SPC, provided there is no different agreement with **Meteor**.

In order to prove process capabilities, the following statistical parameters should be rated and observed:

Machine capability	cm/cm <sub>k</sub>	≥ 1,67
Preliminary process capability	pp/pp <sub>k</sub>	≥ 1,67
Long-term capability	cp/cp <sub>k</sub>	≥ 1,33

If the stated process capability parameters are not attained, the characteristics concerned must be subjected to a documented 100 % test, and relative proof of testing (result documentation) is to be submitted to **Meteor** upon request.

### 3.6 Packaging planning

Selection of packaging may affect product quality and must therefore be tested during rating of production feasibility and before submission of any offer.

The supplier should agree with **Meteor** upon selection of suitable packaging to be used for deliveries, so that taking account of various transportation methods and routes and preventing quality risks due to environmental factors the goods arrive at **Meteor** undamaged.

Over and above this and in advance of series delivery **Meteor** may require from suppliers the performance of respective transportation tests.

### 3.7 Quality assurance on sub-supplier parts

If a supplier sources products or services from one or several sub-suppliers, he is also responsible for quality assurance on these products and services. Negative effects on the quality of **Meteor** products and services demonstrably caused by a sub-supplier are fully attributable to the supplier.

A supplier should ensure quality capacity of his sub-suppliers and suppliers, monitor it on an on-going basis and include it in the quality planning process.

### 3.8 Quality assurance agreements (QSV)

More comprehensive quality assurance agreements stand to be concluded between suppliers and **Meteor** covering amongst other possible regulations for instance:

- Assured product features and control thereof are again precisely defined
- Regulations on committee findings
- Use of special limit samples

It is possible upon request of one of the parties to draw up a written QSV at any time including details of agreement on application scope and period.

## 4. Samples

### 4.1 Definition

#### 4.1.1 Prototypes

Prototypes are initial available parts required by **Meteor** for installation and validation tests. Ideally prototypes should be fabricated under conditions resembling series production. Should this be impossible, supplier may agree alternative fabrication methods with **Meteor**.

#### 4.1.2 Pre-production parts

Pre-production parts involve a fabrication process not yet completely in compliance with the agreed series production process. As a matter of principle manufacturer, material and main production tools should already comply with series requirements.

#### 4.1.3 Initial samples

Initial samples are products and materials fabricated with series equipment, under series conditions and by employees set apart for the series. Their purpose is to prove quality requirements are met in advance of series delivery.

#### 4.1.4 Other samples (raw materials and other purchased parts)

This covers all samples such as hand-made samples and special samples in line with DIN 55 350 part 15. In the case of raw materials and quite a number of purchased parts it is often a matter of trade or catalogue goods. For this purpose supplier submits a sample with test report and all relevant data and safety sheet.

### 4.2 Delivery of samples

All samples must be clearly marked with tags and stickers (e.g. "testing samples", "prototypes" and "initial samples") and must be delivered separately together with relative delivery papers, test reports, safety data sheets etc. and not enclosed with other products.

### 4.3 Evidence of specification conformity of samples

The specification conformity of purchased parts is to prove by 3D-measuring/-scan from the supplier. The measuring reports have to be attached to the respective samples and they have to be send to **Meteor** along with the samples.

Deviations from this rule need the former written approval from the supplier quality department of **Meteor**.



## 5. Initial sampling

### 5.1 Submission of initial samples

Provided not agreed otherwise, first series production must be preceded by submission of initial samples in accordance with VDA vol. 2 - submission level 2 and PPAP - submission level 3 (PPAP/AIAG) for approval or approval testing in the following cases:

- Before first series delivery of a new part
- Before first series application of new tools
- Before first series application of changed materials
- Before series delivery following tool or process adaptation
- Following successful adaptation in light of amended drawings
- Following corrections in line with our test report t
- Following removal to new production location

All initial samples should be fabricated using process and tools intended for use in subsequent series production.

End customer is responsible for specifying which Automotive Standard is applicable to initial sampling. Parts applying to Ford, General Motors and Chrysler must be sampled with PPAP (PPAP/AIAG), while parts for all other end customers are to be sampled with VDA vol. 2.

### 5.2 Drawing up reports on production process and product approval (initial sample test reports) by suppliers

Initial sample test reports, associated initial sample parts, materials and documents required should be marked "initial samples" and sent to the requesting location.

Care should be paid that parts emanating from multi-cavity tools are tested per calibre and records are kept. Features that cannot be tested by suppliers themselves must be certified by certificates from testing institutes, and the testing records, safety data sheets, product data sheets and any material data sheets must accompany initial samples.

In the same way, materials contained in the products should be inputted to the IMDS system in line with VDA vol. 2, article 8 - Declaration of Materials Contained - and passed on.

### 5.3 Compliance with agreed sample submission dates

In order to observe agreed sampling dates and thus not to jeopardise the overall project plan, we expect compliance with the agreed timing for testing parts in line with drawings, free of defects and with complete documentation or according to agreements. In exceptional cases **Meteor** requires premature initial sampling, which may involve obtaining a deviation permit.

### 5.4 Scope of initial samples

Series approval testing calls for submission of 5 initial samples per tool, calibre and production process or the agreed material amounts. This does not concern any testing samples requested by our other technical departments.

## 5.5 Data required for initial samples

In order to facilitate sample testing calculations, the following data should be clearly stated in test reporting:

- Purpose of sampling (see point 5.1)
- Meteor material number
- Meteor material designation
- Drawing number
- status/date
- Amendment number (if amendment is involved)
- Number of tools and calibre

## 5.6 Labelling of initial samples

### 5.6.1 Raw materials and purchased parts

Deliveries of raw materials and purchased parts should be accompanied by manufacturer certificate showing exact designation and evidence of compliance with agreed specifications. Material tests and norms listed in the drawing should also be referred to in initial sample test reports.

### 5.6.2 Parts from multi-cavity tools

It is necessary that parts emanating from multi-cavity tools be specially marked per calibre. Classification should also be assumed for first applications in the case of important parts. This requirement applies equally to initial samples and series deliveries.

## 5.7 Input and maintenance of products in IMDS

**IMDS** stands for “International Material Data System” and is a joint initiative by Audi, BMW, Daimler, Ford, Opel, Porsche, Volvo, VW and EDS.

By reason of national and international environmental legislation (EU old car ordinance, legislation on hazardous substances etc.) all automobile producers are responsible for the whole life cycle of a vehicle (production, processing and workmanship, sale, application, use, recycling and disposal).

The supplier ensures that substances contained in his product are in line with IMDS.

## 5.8 Delivery of initial samples

As a matter of principle initial samples must be sent to the quality department for approval testing by the method agreed with our purchasing department. Initial sample parts for series approval should be packed and marked separately, and they must be sent separate from other sample deliveries. Initial sample test report is to accompany these initial sample parts. Delivery note should include number of initial samples and number of initial sample test report.

## 5.9 Evaluation of initial samples for series supply

Upon receipt of sample test report and initial samples **Meteor** carries out our own tests (e.g. dimensions, material and/or function). A ruling is marked on the covering sheet and returned to supplier.

One of the following decisions is made:

### 1. OK

Series supply without limitation may begin.

Deviations from requirements not identified in initial test report may be raised later.

**2. conditionally OK – follow-on submission required:**

Deviations from specifications have been identified. Product delivery is only approved for a specific time or item count >>> **Scheduled Reapproval of PPA Process is required.**

Deviations from requirements not identified in initial test report may be raised later.

**3. NOK – Reapproval of PPA Process is required:**

A new date for submission of samples should immediately be arranged between departments concerned at both contract partners.

## **5.10 Burden of additional inspection effort if repeated part submission warrant required**

If defects identified result in additional part submission warrant by **Meteor**, associated expenses will be passed on.

## **6. Series deliveries**

As a matter of principle only products whose initial sampling **Meteor** evaluate with “OK” may be used for series deliveries.

In cases where it is nevertheless necessary to use a product in series orders despite inadequate approval status, prior written application should be made for exceptional approval relative to the divergence to the quality department of **Meteor** via a formalised process. Award of exceptional approval for series orders is communicated to supplier in writing.

### **6.1 Process regulation and series testing**

Series testing must involve suppliers in statistical process control (SPC). Supplier must evidence with the aid of respective quality regulation cards (QRK) statistical process control was applied to all special (critical or significant) variable characteristics. **Meteor** reserves the right to view this documentation at any time, as required.

Part characteristics not subject to statistical process control require the supplier to take regular random samples. In order for a lot to be accepted, no defective parts should be identified in the random sample.

Quality assurance measures should be clearly and incontrovertibly visible from the records.

Parts manufactured using a non-accepted process ( $cpK < 1.33$ ) are subsequently subject to 100 % testing, which should last until the manufacturing process is optimised and capacity index of  $cpK > 1.33$  is attained (see point 3.5).

From an economic efficiency perspective we expect on-going process improvement with the aim of continual diversification minimisation. Related documentation must be open for inspection by our quality officer at all times. **Meteor** quality management reserve the right to view  $cpK$  values upon arrangement.

### **6.2 Random samples and testing frequency**

Determination of features in series production to be tested with reasonable frequency depends on controllability of manufacturing process. Determination of testing frequency and scope of random sampling should only take place once process capacity has been proven in relation to that feature. Correct, sensible application of testing frequency and scope of random sampling presuppose knowledge of current quality methods.

## 6.3 Actions to be taken by suppliers when failures occur

The supplier undertakes thoroughly to inspect the quality of his products to be delivered to **Meteor** before dispatch to **Meteor**, such that no products are dispatched that do not fully comply with specifications agreed for that product. The parties agree that goods inward checks at **Meteor** are not necessary because of the organisation of goods outward checks with suppliers, under the above conditions.

**Meteor** raises defect complaints in the context of orderly business practice, so the supplier waives any right to object to subsequent complaints about hidden defects. The German regulation is § 377 HGB.

If defect identification determines that defective parts have been or could have been shipped out, immediate email information should be sent to the **Meteor** quality assurance department concerned. It should go without saying that concomitantly written communication is provided on measures adopted to overcome the error.

## 6.4 Reworking of lots

Manufacturer must ensure that reworking carried out fully complies with agreed parts specifications and does not negatively impact quality, function and safety of the parts (e.g. through tighter repetition of tests).

## 6.5 Delivery of serial material with limited durability and/or expiration date

The supplier has to guarantee, that material with an expiration date arrives at **Meteor** in a condition, that allows its utilization without any restriction for a minimum of 2/3 of its defined expiration time.

## 6.6 Audits

In targeted pursuit of quality assurance monitoring, rating and improvement where necessary the supplier is required to draw up results-oriented plans to inspect through audits products ready for dispatch for compliance with technical documents, drawings, specifications, norms, legal provisions and further prescribed quality characteristics. The annual number of such tests is decided by supplier depending on available working procedures and systems.

Audit documents, ratings and catalogues of measures are in the safe-keeping of the quality department concerned, and if necessary proof should be provided.

**Meteor** or its agents enjoy the right to check subcontracted products for compliance with quality requirements both at sub-supplier's and at supplier's premises. Suppliers should not interpret an inspection of this sort as proof of efficient sub-supplier quality assurance.

Inspection by **Meteor** neither exempts suppliers of the duty to submit acceptable products nor precludes the possibility of subsequent rejection by **Meteor**.

## 6.7 Requalification

All products should periodically undergo a complete check for measurements and functions that takes account of applicable client requirements regarding materials and functions.

Provided no other agreement is made, after the beginning of the series this should take place once a year (approval by PPF/PPAP). Evidence should be provided unsolicited in the form of cover page sampling, and the results should be made available for client viewing.

Supplier is similarly responsible for carrying out requalification for his suppliers and sub-suppliers.

## 6.8 Labelling of deliveries

### 6.8.1 Use of new drawing and specification index

If parts are manufactured using a new index, they should not be mixed with parts manufactured using an old index, and it is important to ensure that parts bearing the old index are used first. If there is no further use for old index parts, they should be scrapped. The use of parts with a new index must be specifically marked as such in delivery papers. Equally containers and packages should be labelled with part description, drawing number and index.

### 6.8.2 Quoting charge number on delivery sheet

Lots delivered should show charge number on delivery sheet and accompanying papers. The purpose is to facilitate labelling of production lot when defects are discovered. Charge number markings are subject to documentation requirement.

### 6.8.3 Deliveries under exceptional approval

Deliveries sent in connection with exceptional approval to **Meteor** should be appropriately marked separately on each item.

## 6.9 Sub-suppliers

Supplier is fully responsible for our products emanating from sub-suppliers. This means he should insist sub-suppliers practice rigorous quality-control such as performance of FMEA (see point 3.2), process capacity tests and application of statistical process regulation, and they should monitor them appropriately.

In the case of a complaint, supplier is also obliged to adopt applicable measures with his sub-suppliers and monitor implementation thereof.

## 6.10 Changes to production processes

Before implementing process changes, suppliers should perform checks for compliance with drawing requirements and provisions, including failure mode and effect analysis, in advance of which no initial sampling may take place.

## 6.11 Testing parts delivered

Since suppliers are responsible for designing parts delivered, inward deliveries are only checked by minimal random sampling in line with current random sample regulations. Inward checks are reduced (skip lot procedure), if evidence of supplier process capacity is on hand and the parts have a positive quality history. This evidence should be held at the disposal of **Meteor**.

Further accompaniments to a delivery are acceptance certificates in line with DIN EN 10 204-3.1. In individual cases **Meteor** may require copies of test records and quality control card to be sent along.

## 6.12 Packaging

The type of packaging for series parts must be agreed with **Meteor** and approved in writing.

Part packaging labels should indicate the production date. Should the material be characterised by limited durability, the expiration date should also be indicated.

## 6.13 Complaints

### 6.13.1 Claims procedure

If **Meteor** identify quality defects in products delivered by a supplier, they are reported in a test report. Upon receipt of this report or evidence, the supplier has to respond within 24 hours by means of a 3D report and latest in 10 working days by means of an 8-D report.

**Meteor** retain the right to invoice a blanket amount for extra work entailed by complaints. Costs due to defective products are similarly invoiced.

### 6.13.2 Escalation procedures for suppliers

If quality problems with deliveries occur frequently, the **Meteor** escalation procedure is applied, the purpose being to implement suitable measures at the supplier to ensure future deliveries of products and materials revert to compliance with requirements. Depending on duration severity of the problems, allocation is made to one of the four escalation grades.

- ☞ **Escalation grade 0:** By reason of quality problems supplier is informed in writing of problem/defect. In the course of response supplier has to adopt effective abatement measures and document these in an 8-D report and action plan.
  
- ☞ **Escalation grade 1:** Supplier has to investigate defective features with a 100% test until stable delivery quality is achieved. The 100% test is to be documented for at least the 3 subsequent deliveries, and deliveries should be appropriately marked. Supplier is further required to present his abatement measures to **Meteor** in a problem/Q discussion.
  
- ☞ **Escalation grade 2:** If the quality requirements of escalation grade 1 are not fulfilled, the action plan is to be investigated at supplier's premises in form of a results-oriented process audit for appropriateness and efficacy. Supplier is responsible for implementation of ensuing measures, with reports on the corresponding status regularly made to departments concerned.
  
- ☞ **Escalation grade 3:** If the quality requirements of escalation grade 2 are not fulfilled, the supplier is classified under escalation grade 3. This means he is blocked for new requests and awards until suppliers are changed.

At escalation grade 3 problems are analysed by a **Meteor** team on the spot. Supplier must be prepared to support all activity of **Meteor** staff, and supplier management must ensure compliance with measures agreed.

In order to ensure the effectiveness of planned measures, progress is monitored and documented by means of regular reports.

Escalation grade 3 ends with de-escalation to be agreed separately with suppliers. If supplier support does not proceed well, and if the cause is attributable to supplier, he remains blocked for new projects and **Meteor** will rapidly pursue supplier change.

## 7. Assessment of deliveries

### 7.1 Quality targets

**Meteor** follow a strategic “zero error quality” target principle, and this means that all deliveries by suppliers are bound by this “zero error quality” requirement.

Every complaint is recorded and assessed accordingly. With the purpose of checking the Q position supplier keeps his own ppm statistics, which can be reconciled periodically with **Meteor** (supplier development department).

If the “zero error quality” target is not reached, the supplier is obliged to adopt additional interim quality assurance measures unsolicited, and these should be communicated in writing to **Meteor** (supplier development department). Effectiveness of these measures is to be proven in writing.

### 7.2 Supplier rating

Overall rating of deliveries is performed regularly, and suppliers receive written communication, sometimes being asked for a response.

The following main criteria contribute to the rating:

- Purchasing criteria
- Logistics performance
- Quality performance

In the case of B or C classification supplier should independently adopt necessary improvement measures by means of a scheduled plan with information to **Meteor**. **Meteor** are to be informed in a timely and unsolicited fashion on the implementation status of measures adopted.

If supplier has a protracted rating status of “C supplier“, **Meteor** will investigate whether further cooperation is possible.

## 8. Product safety / Product liability

Each company in the automotive supply chain is obligated, to ensure the safety and conformity of their products. Therefore the applicable statutory rules of the particular countries and regions and the expectations of the public regarding product integrity and safety must be fulfilled. The responsible person is obligated to initiate the required actions for products, which are attract attention as “precarious” in the market or were the conformity respectively the regulatory requirements are debatable.

The manufacturing responsibility for supplied raw materials and/or parts rests on the supplier or respectively his sub-supplier. Therefore the supplier has to take the organizational and technical measures, to guarantee the product safety and to minimize the risks of the product liability of his materials/parts and the ones of his sub-suppliers.

To ensure this activities, a Product Safety Representative (PSR) & Conformity Representative (PSCR) has to be appointed from the supplier organization and for every following step in the supply chain. In case of a personal / organizational change, the supplier has to inform the purchase department of **Meteor** unrequested.

## 9. Emergency plan

Supplier should draw up an emergency plan showing how he would ensure delivery to **Meteor** in case of the following:

- Interruption of energy supplies
- Shortage of workers
- Breakdown of important equipment and machinery
- Capacity bottlenecks caused by increasing client demand
- Capacity bottlenecks caused by client claims
- Quality and delivery problems with sub-suppliers
- Other serious events endangering delivery

If all measures still cannot ensure deliveries, **Meteor** purchasing department must be informed in writing immediately.

## 10. Parts subject to mandatory documentation (A parts)

Parts subject to mandatory documentation mean products implying elevated risk in terms of product liability. A parts and A features are clearly marked in documentation (drawings and provisions), and A features testing staff receive regular training. These training courses are to be documented. Supplier undertakes to record test results in suitable form and to keep them carefully for **20 years** following end of series. Records and instructions are to be submitted to **Meteor** upon request. More accurate regulations are found in VDA publication vol. 1 "Code of practice for the documentation and archiving of quality records" for automobile manufacturers and their suppliers.

## 11. Requirements related to environmental and energy management

### 11.1 Environmental requirements

In the interest of communal responsibility for the environment the supplier is urged to establish and maintain an environment management system in line with DIN EN ISO 14 001, and possession of an ISO 14 001 certificate counts towards supplier rating. Questioning on environmental issues may be integral to auditing by **Meteor**.

Suppliers not possessing a certificate in line with DIN EN ISO 14 001 or EMAS ordinance are required:

- To establish a documented environment management system
- To maintain an environmental protection program
- To be familiar with environment legislation and applicable provisions, observe them, be informed about forthcoming changes and prepare themselves appropriately
- To be familiar with environmental aspects and ramifications, document them, measure significant aspects and conclude an improvement program
- To carry out appropriate training in environmental issues for staff
- To consider environmental aspects during research and development, process planning and production.

The disposal of waste and/or scrap must be executed by certified waste disposal companies.

### 11.2 Energy requirements

In an effort to do justice to sustainable resource handling, energy efficiency is a significant element of resource protection. Systematic energy management in line with DIN EN ISO 50 001 is an appropriate instrument allowing the company to continually improve energy efficiency. This leads to achievable cost reduction and enhanced competitiveness.



A certified energy management system also evaluates the approach to sustainability in the supply chain. So the supplier is constrained to seek certification under DIN EN ISO 50 001 or indeed to plan for improvements in energy efficiency and consumption reduction.

The existence of the ISO 50 001 certificate will be considered in the supplier rating.

## 12. Registration, Evaluation and Authorisation of Chemicals (REACH)

**REACH** stands for **R**egistration, **E**valuation, **A**uthorisation of **C**hemicals and it is an EU chemicals ordinance designed to centralise and simplify valid chemical laws Europe-wide that came into effect on 1<sup>st</sup> June 2007.

Under REACH chemical substances can only be circulated after successful registration.

Suppliers of chemical substances to **Meteor** are obliged to deliver only registered materials or indicate potential hazardous materials as SVHC substances ( substances of **very high concern**).

## 13. Literature

- **VDA vol. 1**  
Quality management in the Automobile Industry  
Documentation and Archiving – Code of practice for the documentation and archiving of quality requirements and quality records  
Verband der Automobilindustrie e. V. (VDA)
- **VDA vol. 2**  
Quality management in the Automobile Industry  
Assurance for Supplies – Production process and product approval (PPA) Verband der Automobilindustrie e. V. (VDA)
- **VDA vol. 4**  
Quality Assurance in the Process Landscape  
Verband der Automobilindustrie e. V. (VDA)
- **VDA vol. 5**  
Prüfprozesseignung, Eignung von Messsystemen, Mess- und Prüfprozessen Verband der Automobilindustrie e.V. (VDA)
- **VDA vol. 6.3**  
Quality management in the Automobile Industry - Processaudit  
Verband der Automobilindustrie e. V. (VDA)
- **VDA vol. – Maturity Level Assurance for new Parts**  
Verband der Automobilindustrie e. V. (VDA) • **VDA vol. – Produktintegrität**  
Verband der Automobilindustrie e. V. (VDA)
- **IATF 16 949** Beuth Verlag
- **DIN EN ISO 9001** Beuth Verlag
- **DIN EN ISO 14 001**  
Environmental management systems Beuth Verlag
- **DIN EN ISO 50 001** Energy management systems  
Beuth Verlag
- **DIN 55 350 – Teil 15**  
Expressions for quality assurance and statistics – expressions for samples Beuth Verlag
- **Production part approval processes (PPAP)** AIAG
- **Product quality planning and control plans (APQP)**  
AIAG
- **Analysis of measuring systems (MSA)** AIAG
- **Statistical process control (SPC)**  
AIAG

## 14. Overview of changes

Edition	Change	Date	changed
1	First edition	06/02	Weitkamp
2	Reworking in line with ISO/TS 16 949	05/08	Weitkamp
3	<ul style="list-style-type: none"> <li>• Correction page 17 (typo)</li> <li>• Addition of chapter 6.7 – „Requalification“</li> <li>• Addition of chapter 13 – “Overview of changes”</li> <li>• Adjustment of chapter sequence</li> </ul>	05/10	Weitkamp

4	<ul style="list-style-type: none"> <li>• Complete reworking in light of company change of name</li> </ul>	02/15	Weitkamp
5	<ul style="list-style-type: none"> <li>• Revision ISO/TS 16949 towards IATF 16949</li> <li>• Chapter 2.1: Addition to sub-item 1, Change sub-item 4 and write in sub-item 5</li> <li>• Chapter 3: Revision "VDA Vol. 4 to VDA Vol – Maturity Level Assurance for new Parts"</li> <li>• Chapter 3.4: Revision VDA Vol 4 to VDA Vol. 5</li> <li>• Addition Chapter 4.3 – Evidence of specification conformity of samples</li> <li>• Addition Chapter 6.5 – Delivery of serial material with limited durability and/or expiration date</li> <li>• Chapter 6.13.1 was 6.12.1: Changing immediate action from 48 hours to 24 hours</li> <li>• Addition Chapter 8 – Product Safety/Product Liability</li> <li>• Chapter 11.1 was 10.1 – Addition: Disposal of waste / scrap</li> <li>• Chapter 13 was 12 – Addition: IATF 16 949</li> <li>• Adjustment of chapter sequence.</li> </ul>	04/17	Weitkamp
6	<ul style="list-style-type: none"> <li>• Chapter 1: Section 7 added</li> <li>• Chapter 2.1: "Poor delivery performance" added</li> <li>• Addition Chapter 2.3: "Customer requirements in the supply chain" updated</li> <li>• Chapter 6.3: Elimination of § 378 HGB</li> <li>• Chapter 7.1: Change of "ppm-target agreements" to "Quality targets"</li> <li>• Chapter 7.2: Section 3 added</li> </ul>	12/18	Weitkamp
7	<ul style="list-style-type: none"> <li>• Complete reworking in light of company change of name</li> <li>• Chapter 8: Section 1 added and elimination previous section 3</li> <li>• Chapter 11.2: Section 3 added</li> </ul>	03/20	Weitkamp