# SUPPLY AGREEMENT
# SCHEDULE D

## QUALITY COMMITMENT FOR SUPPLIERS
## QC1

## Index

# 1 Introduction

## 1.1 Preface

Valeo Thermal Commercial Vehicles Germany GmbH, Gilching, or any associated companies as per the German Company Law [Aktiengesetz] §§ 15 ff - hereinafter uniformly referred to as “Valeo” - is committed to meeting customer and end-user expectations at the highest level through a strict quality management system. The important role of the supplier is placed firmly in the foreground in achieving this aim.

This ‘Quality Commitment for Suppliers’ provides the basis for our working relationship. It defines quality requirements for the development, production and inspection and testing of supplied parts and services. Valeo promotes and develops team work together with its suppliers. A precise definition of requirements along with communication on all levels allows for a working relationship that encourages an open association with ideas and issues.

Valeo expects its suppliers to adhere to those items listed in the Quality Commitment, which are a constituent part of every order. The suppliers are obliged to ensure that their own sub-contractors also fulfil the requirements of this Quality Commitment.

Given that our suppliers have a considerable influence over the performance of Valeo, those customer requirements defined by the vehicle manufacturers will also apply to our suppliers by way of this Quality Commitment. Valeo expects its suppliers to develop their own quality management systems in line with the requirements of the international quality standard, EN/ISO 9001 (in the currently valid version). This will allow them to fulfil all statutory and safety requirements and to supply Valeo reliably with zero-defect parts.

## 1.2 Purpose and Scope

This Quality Commitment for Suppliers applies to all internal and external suppliers of prototypes, series parts and services to Valeo. This Quality Commitment is an integral part of all enquiries and offers. Suppliers should develop their own quality management systems in line with the international quality standard, EN/ISO 9001 (in the currently valid version) and in accordance with the regional requirements of the customer, the applicable legislation and also national standards. The purpose of this Quality Commitment is to clearly define the special requirements of Valeo and to fulfil these requirements while working together as partners.

## 1.3 REACh

The European Union chemical regulation REACh (Registration, Evaluation, Authorisation and Restriction of Chemicals) comes into force on 01. July 2007 and has the goal to protect humans and environment better than so far against possible risks while handling chemicals.

Valeo as a downstream user according to article 3 No. 13 of the REACh regulation is depending on information from suppliers to satisfy the reporting requirement in the supply chain.

### 1.3.1 Reporting requirement of existing suppliers

In case of relevant product, supply availability or quality changes of products supplied to Valeo caused by the REACh regulation, the supplier immediately have to implement appropriate measures and update Valeo.

### 1.3.2 Reporting requirement of new suppliers

New suppliers have to submit a declaration of REACh conformity in the supplier approval process (see section 2.2).

# 2 Supplier Qualification

## 2.1 Supplier selection

The supplier of a certain product or service will be selected from the ‘List of approved suppliers’ only and in due consideration of previous supplier evaluations.

## 2.2 Supplier approval

Valeo has a list of suppliers who have in the past proven their ability to fulfil our expectations. All materials for prototypes, pre-series and series parts and all services will be purchased only from suppliers who are on the list of approved suppliers.

Suppliers on this list will be audited, if circumstances so demand. A typical reason for a supplier audit could be insufficient series quality. The nature of the audit will depend on the actual defects observed.

The standard certification of quality management for new suppliers is in accordance with EN/ISO 9001 (in the currently valid version). The first evaluation carried out by the purchasing department of Valeo must be positive and an additional brief audit carried out by the quality department of Valeo must be successful.

If required in individual cases, Valeo will examine the supplier processes. A typical reason for this could be the introduction of new products, production start-up where technical modifications have been introduced or insufficient series quality with the supplier.

The supplier is obliged to grant both Valeo and the customers of Valeo the right to check, at the supplier premises, whether products supplied to the supplier and the supplier process, product and service themselves fulfil the specified requirements.

## 2.3 Supplier development

Valeo is developing its supplier base towards conformity with EN/ISO 9001 (in the currently valid version). Valeo is prepared to support its suppliers by providing them with information required and a clear definition of its expectations. Supplier meetings serve to promote the exchange of knowledge and experience.

The supplier is to carry out internal audits at regular intervals in order to maintain its QM system.

In order to fulfil the requirements of Valeo, the supplier quality management system must be geared towards preventing rather than detecting defects. For this reason, it is necessary to use development and process knowledge that will prevent the manufacture of products beyond the boundaries of these requirements. Where risks or deviations are detected (through FMEA, capability tests, warranty reports, ...), defect- prevention mechanisms must be employed to minimize or prevent these risks during the planning of procedures, facilities, processes and tools. These defect-prevention mechanisms must also be employed during trouble-shooting.

Employees are considered to be an important resource for the supplier. Therefore, Valeo requires its suppliers to ensure the ongoing professional development of its employees and to make use of staff motivation programmes in order to promote continuous improvement.

## 2.4 Supplier evaluation

### 2.4.1 General

Even a detailed quality system cannot fully guarantee that the supplier will always supply zero-defect products. The supplier performance will be monitored and evaluated by those Valeo departments that are responsible for quality management, engineering, purchasing and logistics.

### 2.4.2 Supplier quality evaluation

The supplier quality performance is measured continuously and calculated on a monthly basis in a supplier evaluation process.
The monthly calculation takes into consideration the number of defective parts in relation to the number of supplied parts per month depending on the defect impact and the defect incidence frequency for Valeo. Quality targets are defined on an annual basis by the local Valeo subsidiaries. They serve to provide evidence of continuous improvement and are not a substitute for the general zero-defect target.

#### 2.4.2.1 Key evaluation figures

- **QL**: Supply reliability (on-time and correct quantity)
  Percentage supplier classification value in accordance with SOP 4.5.1

- **QP**: Delivery quality (product quality 0-km)
  Percentage 0-100% - see 2.4.2.2 ff

- **QK**: Q costs to the account of the supplier (0-km & field)
  Material and other costs to the account of the supplier, in Euro

#### 2.4.2.2 Evaluation of delivery quality QP (product quality 0-km)

For the following reasons delivery quality is no longer evaluated in ppm:

- Different defect evaluation according to the impact of the defects on processes and/or on products of Valeo

  and

- The number of received defective deliveries is calculated along with it

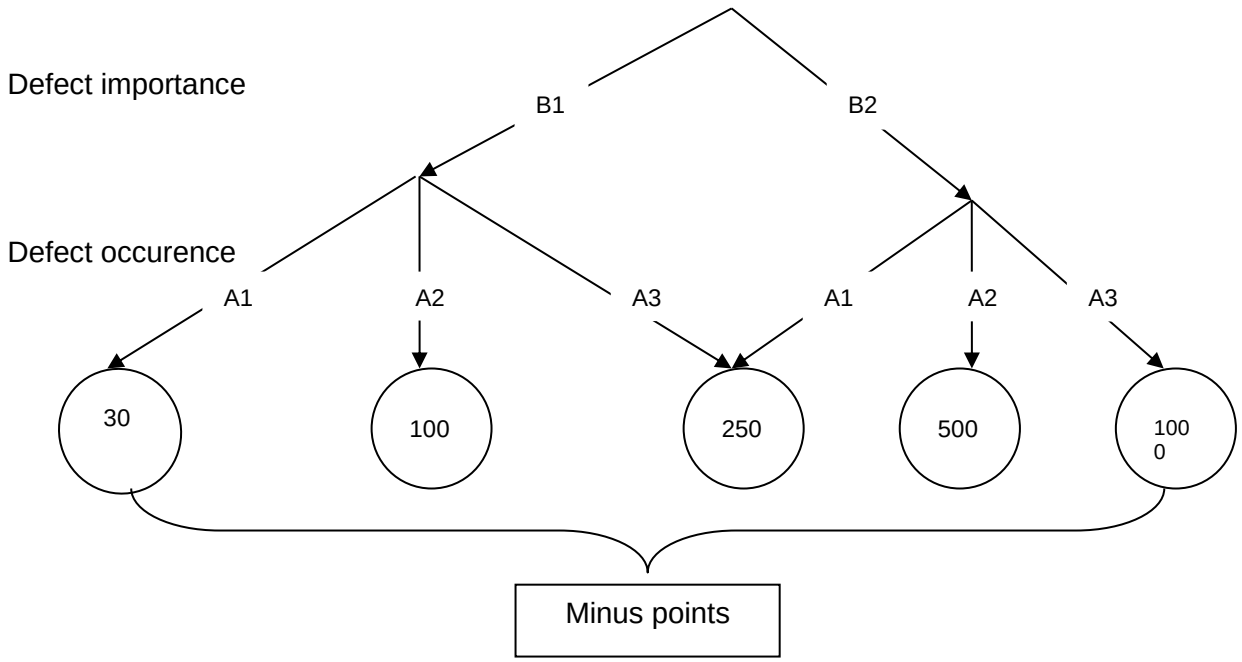
**QP**: percentage figure is calculated from the classification of the individual deliveries.

- Each non-defective delivery is valued at 0 points
- Each defective delivery receives minus points from 30 to 1000 depending on the defect importance and the defect occurrence frequency

### 2.4.2.3 Calculation QP

$$Q_P = 100 - \frac{\sum \text{Classification of individual deliveries}}{\text{Number of deliveries}} \%$$

### 2.4.2.4 Scheme for evaluation of supply quality QP




### 2.4.2.5 Evaluation of defect importance

- **B1: low importance:** (production not affected)
  - No interference with functioning or performance
  - Logistical characteristics not fulfilled (delivery papers, packaging, labelling)
  - Defect notified by supplier himself
  - Parts usable with minor re-working or special action
  - Parts usable after sorting or re-working by supplier at Valeo premises
  - Parts usable without interfering with Production

- **B2: high importance:** (production affected)
  - Functioning given but performance affected
  - Functioning requirements not fulfilled
  - Special drawing characteristics (CC, SC, YC, YS) not fulfilled
  - Safety risk and/or statutory regulation not fulfilled
  - Parts usable but with medium-level re-working and/or assembly interference
  - Sorting action and/or re-working by supplier at Valeo premises not enabled
  - Parts cannot be assembled and/or re-working of parts at Valeo not possible
  - Return of entire delivery to supplier
  - Agreed corrective action not adhered to by supplier
  - Production stop

#### 2.4.2.6 Evaluation of occurrence

- **A1: low-level occurrence**:
  - max. 2% of the delivery defective
  - no repeat defect
- **A2: medium-level occurrence**:
  - max. 20% of the delivery defective
  - no repeat defect
- **A3: high-level occurrence**:
  - over 20% of delivery defective
  - repeat defect

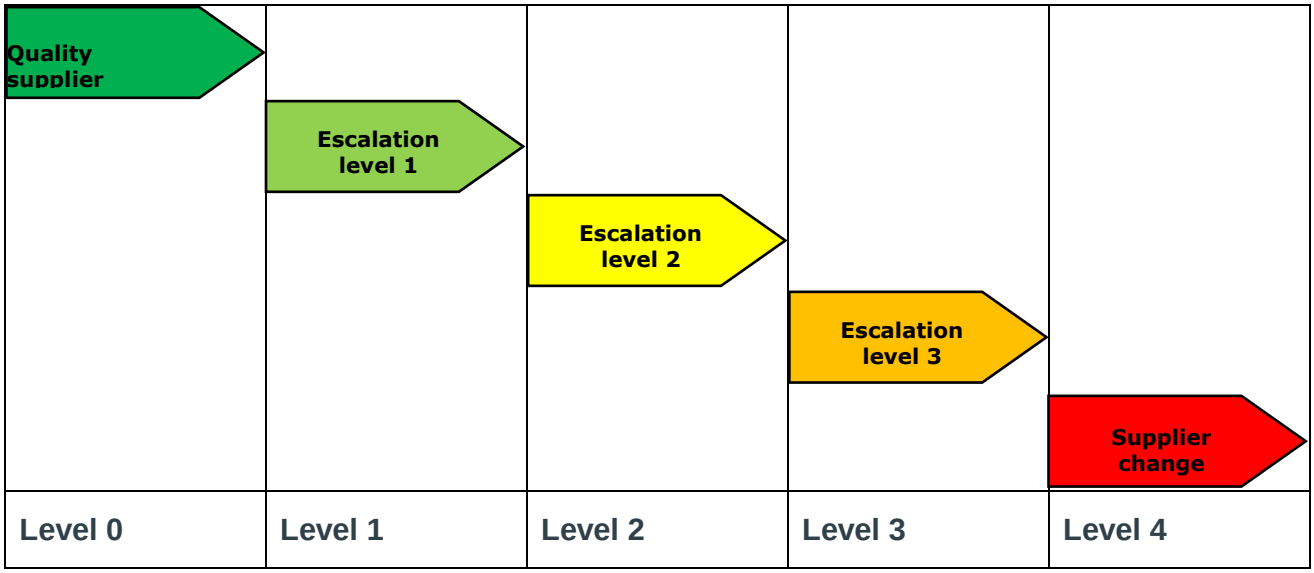
### 2.4.3 Evaluation of engineering, purchasing and logistics

The supplier performance will be evaluated by the relevant departments based on a questionnaire containing evaluation criteria. The maximum fulfilment level is 100%. The targets for these evaluations are defined on a yearly basis by the local Valeo plants together with the purchasing department.

## 2.5 Escalation in the case of non-fulfilment

If the supplier does not achieve the targets the, supplier management must set out a plan of corrective action and submit it to the local Valeo plant. The quality of this action plan will determine whether the supplier is placed on probation and how long the probation period will be. If an improvement in the supplier evaluation cannot be expected within a six-month period, all new contracts to the supplier will be suspended.

### 2.5.1 Escalation model



| ESC0 (Escalation level 0) | |
|---|---|
| **Criteria** | The supplier fulfils the quality and supply requirements (PPM, service level, etc.). |
| **Actions** | Standard incoming goods inspection and complaints are handled by the plant. |
| **Results** | Display current statistical evaluation. |
| **Responsibility** | **Plant quality and disposition** |

A Suppliers

| ESC1 (Escalation level 1) | |
|---|---|
| **Criteria** | The supplier does not fulfil the quality or logistic specifications.<br>E.g. if there is negative trend of increasing no. of complaints. |
| **Actions** | The supplier is thus requested to provide and implement corrective actions based on normal supplier evaluation (e.g. update every 3 months). |
| **Results** | Introducing mandatory suitable corrective actions and optional visit of supplier. |
| **Responsibility** | **Plant purchasing** |

| ESC2 (Escalation level 2) | |
|---|---|
| **Criteria** | Implemented corrective actions (ESC1) do not shows any improvement. |
| **Actions** | The management board of the supplier is requested to get involve with the plant management. Insufficient improvement even after this will lead to a downgrading to ESC3. Effective actions to improve the quality and supply performance will lead to an upgrading in level 0 or 1. |
| **Results** | New agreement on targets with supplier (action plan). |
| **Responsibility** | **Plant management** |

B Suppliers

| ESC3 (Escalation level 3) | |
|---|---|
| **Criteria** | Inadequate supply reliability + failure of corrective measures + Insufficient cooperation by supplier. |
| **Actions** | The Supplier will be put "On-hold" for all new RFQ's and new business. Central Purchasing will inform the supplier officially. Open actions of ESC2 will be followed up. Remove "On-hold" status only if supplier gets back to ESC0 or ESC1. |
| **Results** | Temporarily block the supplier for involving in new projects and inform other Plants. |
| **Responsibility** | **Central purchasing** |

| ESC4 (Escalation level 4) | |
|---|---|
| **Criteria** | If an improvement in the supplier evaluation cannot be expected within a 6-month period. |
| **Actions** | Supplier is permanently "On-hold" and phase out process will be started (Central Purchasing). |
| **Results** | Supplier will be replaced as soon as possible. |
| **Responsibility** | **Central purchasing/General management(P/Q)** |

C Suppliers

Supplier Evaluation (ABC rating)

# 3 Advanced Product Quality Planning (APQP)

## 3.1 General

APQP is a framework used for the prevention of potential defects and to support continuous improvement. The APQP process covers all stages from development to series production. It requires a multi-disciplinary team consisting of people from all main departments such as sales, development, production planning/work scheduling, production, purchasing and quality assurance.

The supplier must set out a plan showing the individual stages, the corresponding date of completion and the areas of responsibility for the required activities.

One type of APQP is producibility evaluation. A completed and signed producibility evaluation (sent to the supplier together with the request for a quote) is an integral part of the quote submitted by the supplier.
Feasibility must be verified by means of a completed and signed producibility evaluation before an order is placed with a supplier. This type of APQP is a constituent part of the quote. A quote cannot be taken into consideration if the completed and signed Feasibility evaluation is not returned to the purchasing department as part of the quote submitted. Part submission warrants are not valid if the APQP has not been completed. Standard parts (standard / catalogue parts) can be excluded here.

The APQP is carried out in conjunction with the supplier multi-disciplinary team and its progress is checked regularly. If Valeo does not take part, the supplier must carry out this work independently and have it approved and signed-off by the relevant quality assurance engineer at Valeo. The APQP may lead to a quality agreement which defines and determines the most important characteristics and the manner in which they will be inspected, evaluated and documented during series production.

There are 2 types of APQP process:

### 3.1.1 Suppliers with responsibility for development

➔ Apply entire checklist – incl. feasibility evaluation for the APQP process (Advanced Product Quality Planning and control Plan APQP)

### 3.1.2 Suppliers without responsibility for development

(Manufacturing as per drawing/specification)

➔ Apply checklist – minimum only feasibility evaluation from the APQP process (Advanced Product Quality Planning and Control Plan APQP)

## 3.2 Feasibility evaluation

Feasibility evaluation describes the assessment as to whether a part for which a quote has been requested can be manufactured under series conditions as described in and required by the relevant drawings and specifications.

The feasibility evaluation must be carried out by the supplier, if necessary together with the relevant department at Valeo. The feasibility evaluation is required for each and every part for which a quote is requested by the purchasing department. In particular, specified tolerances from a statistical point of view, the actual functioning of and stress on the part must be considered. In addition, a statement should be made as to whether the supplier capacity will allow for the supply of the planned number

of units and whether the supplier can adhere to the scheduled deadlines. Valeo expects to receive suggestions from the supplier as to any changes or additions to drawings and specifications. These will be carefully examined and implemented as part of our approach to continuous improvement in terms of product quality, process reliability and the most economical production.

## 3.3 Specifications and requirements

Valeo will provide all information and technical data necessary for requests for quotes and for orders. This excludes catalogue parts and other products without special requirements.

The data consists of this Quality Commitment, all current Valeo drawings, the specifications and technical delivery conditions (i.e. Valeo and customer standards, but not generally applicable industry standards), and other regulations and standards, that outline the quality characteristics that have to be complied with.

Relevant data must also be contributed by the supplier, where the supplier is responsible for the engineering aspect and for development. If necessary, this data will be approved by Valeo.
During the individual APQP stages, the supplier is obliged to check that technical data is complete, relevant and correct. In the case of modifications at a later point in time, the supplier is responsible for ensuring that the relevant supplier departments are in possession of up-to-date data and that this data is in line with all documentation and manufacturing and quality instructions.

## 3.4 Requirements for prototypes and pre-series parts

### 3.4.1 Definition of prototype

Prototypes are parts that, as a rule, are not produced using series tools. These parts are produced by the manufacturer with the aid of all available technical and manufacturing resources and based on preliminary drawing specifications. These parts must be fully functional. Prototypes are generally to be supplied together with a measuring report. The required test values are to be agreed in advance with the relevant quality department at Valeo. The prototype supplier must remain in close contact with the development departments at Valeo. If so desired, the prototype supplier is obliged to hand over to Valeo all available data resulting from the manufacture of the prototypes with regard to the planning of the production process and the manufacture of the production tools. The development department and the quality engineer at Valeo are responsible for evaluating the prototypes.

Prototypes must be clearly labelled using tag and label.

Any deviations from this standard must be agreed in writing with the relevant quality department and in advance of the submission of the parts.

Applicable customs regulations must be taken into consideration when delivering the parts.

### 3.4.2 Production control plan for manufacturing prototypes

Production control plans are to be drawn up when the prototypes are being manufactured. The extent of these plans is to be agreed with the relevant quality person at Valeo. In addition to all special characteristics (s. 3.11), these plans contain descriptions of the tests on dimensions, materials and functionality, which were all carried out during the manufacture of the prototype.

### 3.4.3 Definition of pre-series part

Pres-series parts are parts that, unlike prototypes, are manufactured using the production tools. Reworking is permitted in order to fulfil the drawing requirements, provided this is disclosed in the sample documentation. These parts are checked to a 100%, the results of which are recorded in a measuring report.

## 3.5 Process flow chart

The process flow chart is a graphic depiction of the entire process flow beginning with incoming goods, through production and on to dispatch. It is supplemented by short descriptions of the individual production stages and lists the resources and various inspection points and shows the material flow. Process flow charts are indispensable to quality planning. They provide the basis for FMEAs and for maintenance schedules and production control plans. They are to be included with the initial sample documents, if this is specified in the initial sample order.

Important operations, automatic retrieval and test points must be identified, evaluated in the FMEA process with regard to existing risk, and secured in the production control plan, if necessary by means of a suitable test method. The labelling and flow of material must be organized in such a way as to exclude the possibility of incorrect material or parts being processed.
Production control plans and FMEAs should always be up to date.

## 3.6 Failure Mode and Effects Analysis / FMEA

FMEA helps to prevent failures by means of a structured analysis of potential failure. FMEAs must be carried out during development and also during process planning. They are required for all new or modified products and processes. FMEAs are ‘organic’ documents that must be continually updated with regard to modifications in development and process and to product use.

- ‘System FMEAs Product’ are to be carried out by the department responsible development and/or design.

- ‘System FMEAs Process’ detect possible process weaknesses and help to formulate appropriate actions that will remove the problem. The relevant production preparation department is responsible for carrying out the FMEA before production of tools and equipment. ‘System FMEAs Product’ should be available before a ‘System FMEA Process’ is created. In the case that a ‘System FMEA Product’ is not available to Valeo, this must not delay the creation of a ‘System FMEA Process’ by the supplier.

Those product features and process parameters that are categorized by the FMEAs as ‘significant’ or ‘critical’ will become important features in the production control plans.

The supplier must make available at all times the ‘System FMEA Process’ to the quality assurance department at Valeo. Any actions resulting from the FMEAs must be verifiably implemented before initial sampling.

## 3.7 Production control plan

One important stage of quality planning involves the creation of a production control plan. The production control plan describes the system for testing parts and processes. A production control plan can apply to a product group or a product family manufactured using the same processes and in the same location. In addition, instructions for process monitoring and maintenance scheduling should be defined and consistently applied.

A production control plan describes the necessary activities at each stage of the manufacturing process including incoming goods inspections, checks during the process and outgoing goods inspections, in addition to all periodical checks to confirm that all processes are under control. Periodical checks are, for example, functionality tests and reliability and life-time tests, in keeping with technical specifications and product requirements.

The production control plan is required during the entire life-time of a product, i.e. during the prototype, pre-series and series production phases.

The production control plan contains all special characteristics that are represented in the drawings and specifications and that are derived from the FMEAs. Approval by Valeo may be required.

## 3.8 Process instructions / Work instructions

It is necessary to ensure that, where required, easily understandable and sufficiently detailed process and work instructions are available to personnel involved in the manufacturing process.
These instructions should be directly related to the required documents, such as:

- FMEAs
- Production control plans
- Development drawings, product specifications, material specifications, proof samples and industry standards
- Packaging standards
- Product and process capability

Process and work instructions must be available at each workstation and must contain all process-relevant machine settings.

## 3.9 Planning tools and equipment

Process flow diagrams, ‘System FMEAs Process’ and production control plans are to be examined as to whether the requirements for the development of new machinery, tools, testing devices and equipment that result from previous problems have been taken into consideration. Preliminary process capability studies must be planned and carried out before the delivery of new tools/equipment.

The supplier must set out a detailed schedule for the acquisition of new or modified tools and measuring devices and equipment. Checks must be carried out regularly on this schedule to ensure that it is being adhered to, in order to guarantee that it corresponds with Valeo planning. Should the supplier schedule deviate for reasons of technical modifications, tool problems, or for other reasons, the relevant Valeo purchaser and the Valeo quality engineer must be notified immediately. Proposals for necessary actions that will allow the original deadline to be adhered to must be submitted in writing.

In the case of a new tool, tool modification or replacement tool, a new initial sample together with a part submission warrant is to be submitted to the relevant Valeo plant.

### 3.10 Measuring and testing devices

The supplier is responsible for the use of suitable measuring and testing devices (incl. software and programs) to ensure satisfactory process monitoring. The supplier and Valeo will agree on the measuring methods and devices to be used. In order to guarantee the safety for the production and dispatch of zero-defect parts, all measuring and testing devices listed in the production control plan must be approved and their capability verified.

The supplier alone is responsible for providing standard measuring devices. Special tests and the acquisition of any required special testing equipment are subject to the approval of Valeo. The measuring methods and equipment proposed by the supplier and agreed with Valeo must be incorporated into the production control plan.

The manufacturer must install and maintain a suitable system for the monitoring of measuring equipment and other equipment that is used as measuring and/or testing equipment.

### 3.11 Special characteristics (CC, SC, WSC, YC and YS)

In so far as is requested by the Valeo customer, the customer specific labels or symbols will also be used as special characteristics on the Valeo drawings. The approach to the Valeo customer labels or symbols must be clearly defined during the APQP process.
The following agreements and procedures apply:

**Critical characteristics (CC)** are special characteristics that **influence adherence to statutory regulations and/or the safe functioning of the product and/or vehicle.**

**Significant characteristics (SC)** are special characteristics that **influence product and/or vehicle functioning in terms of customer satisfaction**, without influencing adherence to statutory regulations and/or the safe functioning of the product or vehicle.

**Webasto significant characteristics (WSC)** are special characteristics that **influence product functioning and/or reliability or the manufacturing process**, without influencing adherence to statutory regulations and/or safe product and/or vehicle functioning.

**YC characteristics** are special characteristics that have the **potential to influence adherence to statutory regulations and/or safe product and/or vehicle functioning**.

**YS characteristics** are special characteristics that have the **potential to influence product and/or vehicle functioning in terms of customer satisfaction**, without influencing adherence to statutory regulations and/or safe product and/or vehicle functioning.

Risk disclosure is required for YC and YS characteristics during the course of product and process development (see section 3.6 – FMEA).
Depending on the result of risk assessment, and taking into consideration the effective introduction of preventative measures, the demand for verification of process capability and monitoring in series

production may be reduced or it may be required. The risk assessment results must be recorded for all YC and YS characteristics and must be approved by Valeo.

**Important: WSC, YC and YS will remain on existing drawings, but will no longer be used on new drawings.**

In the case of CC, SC and WSC characteristics, verification of preliminary process capability and the monitoring of process capability are required in series. Process capability results are an integral part of the initial sample documents.

### 3.12 Preliminary process capability

Studies on preliminary process capability must be conducted in order to obtain information at an early stage on new or revised processes relative to customer requirements for a capable process.

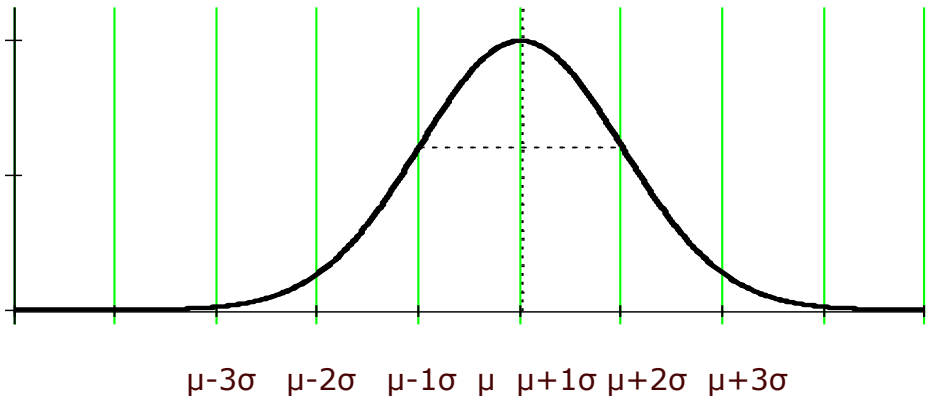
The studies must be based on as many measurement values as possible, using at least 6 parts for each significant and each critical characteristic.
The preliminary process capabilities are to be included in the part submission warrant.

The measurement values must be recorded in the order of production. The preliminary process potential (Pp) and the preliminary process capability (Ppk) can be calculated, once the manufacturing process proves to be stable (no inexplicable values outside of the action limits or other criteria for non-coincidental behaviour).

The indices Pp and Ppk are used to differentiate between the results of the studies on preliminary process capability and those on process-accompanying verification of capability. The latter are referred to with indices Cp and Cpk. The calculation of Pp and Ppk is based on the same formula as for Cp and Cpk.

$$Cp = \frac{T}{6 \times \sigma}$$

T = prescribed tolerance range
σ = standard deviation
μ = average value of random sample



Once the preliminary process capability has been assessed over a long period of time and shows OK-results, long-term data capture can be conducted for process capability (for example on 35 parts from 2 production lots).

For new products that are to be manufactured using new tools or instruments and where no other agreement has been made in writing, the following capability factors are specified by Valeo.

Ppk ≥ 2.0
Cpk ≥ 1.67

The supplier is responsible for process monitoring and for the storage of the SPC data. The supplier will supply data on request or by agreement to Valeo.

If the supplier is unable to verify a sufficient process capability for individual characteristics, a 100% test is to be carried out by the supplier. The process capability applicable to each respective characteristic is to be noted in the part submission warrant.
Otherwise, in variation to this, reference must be included in the part submission warrant about the 100% test.

Once a process has been improved, all previous tests must be repeated in order to verify that the improvements have taken effect. Accordingly, the process improvements must be recorded through studies on preliminary process capability. These documents, which will include processes, data on and confirmation of the 100% test, must be submitted to Valeo. The products supplied must be appropriately labelled in order to differentiate them from previous deliveries.

### 3.13 Requirements of process capability

Process monitoring with an SPC requires that processes are run under controlled conditions. This means that they are not influenced by systemic fluctuations. Process stability must be examined before the start of production. For this reason, random checks must be carried out and evaluated continuously during production. Unless otherwise agreed in writing, the capability factors as outlined above are required.

The supplier is responsible for monitoring the processes and for safe-keeping the SPC data. The supplier is obliged to pass on data to Valeo on request or by agreement.

### 3.14 Packaging plan

The choice of packaging affects product quality and must, therefore, be examined during the feasibility evaluation and before submitting a quote.

The supplier must ensure that the packaging is suitable, taking the various means of transport and routes into consideration and in order to avoid a risk to the quality of the product due to dampness, corrosion or soiling. The supplier must ensure that all parts arrive at the Valeo end-user plant, undamaged and without loss of value.
The packaging is to be defined by the supplier together with Production preparation/Logistics at Valeo before initial sampling.

The packaging is to be designed in such a way that it can be transported with commercially available means of transport.

### 3.15 Quality assurance for parts from sub-contractors

The supplier is responsible for ensuring that his sub-contractors meet all those Valeo requirements that relate to the supplier part. The necessary information must be passed on by the supplier.

The supplier must guarantee the effectiveness of the quality management system of his sub-contractors in accordance with the standard EN/ISO 9001 (in the currently valid version). An action plan must be available for all defects.

Furthermore, the supplier is responsible for ensuring that his sub-contractors monitor the quality of their products.

If new sub-contractors are introduced after approval of the initial samples, new initial samples must be submitted to Valeo for approval. Furthermore, the supplier must carry out regular product, process and system checks at his sub-contractor. The supplier must first receive permission from Valeo before placing an order for tools with sub-contractors. Valeo is authorized to visit the sub-contractor premises together with the supplier at any time after prior agreement, in order to evaluate the quality of the products and processes.

# 4 Initial Samples

## 4.1 Definition of initial sample

Initial samples are produced by the production staff at the final production location with the final production tools, production processes, materials, feeds, speeds and cycle times. On the basis of the initial sampling, decisions are made as to the acceptance of the production methods and equipment, testing, material checks and statistical analyses. With the initial sample, the supplier confirms through his signature that the initial sample meets those requirements that were set out in the drawings and specifications.

Applicable customs regulations must be taken into consideration when delivering parts.

## 4.2 Requirements for initial samples

The standard procedure for submitting a sample is VDA vol. 2/PPF or alternatively QS-9000 reference manual ‘Production Parts Approval Process’ (PPAP).

If the product has to be approved by the supplier, Valeo will accept the result if the safety of the processes has been verified and the approval procedure was agreed during the APQP phase.

## 4.3 Procedure for initial samples

All parts and materials etc. supplied to Valeo are subject to the stated quality evaluation as specified under ‘4.2 Requirements for initial samples’.

Incoming products that have not been approved will be rejected and returned by the purchasing department to the account of the supplier or they will be scrapped on the spot, by agreement with the supplier.

### 4.3.1 Production trial run

Validation of the effectiveness of the manufacturing process begins with the production trial run, which must be carried out under the same conditions as a series run. It can also be used to produce the initial samples. A process approval audit can be carried out on agreement between the supplier and Valeo. The minimum quantity for process approval will be agreed between the supplier and Valeo.

The parts from the production trial run will be used for:

- Establishing preliminary process capability
- Evaluating testing systems
- Verification of producibility
- Production validation
- Product sample warrant (PSW)
- Packaging evaluation

### 4.3.2 Initial sampling

Deliveries of initial samples must meet the following requirements:

- The initial sample parts and deliveries must be labelled with 'Initial Sample' or have a banderole with the words 'Initial Sample' on it.
- The order number for the initial samples must be stated on the delivery documents.
- The part submission warrant must be completed in full. This includes a Valeo part drawing with the individual items from the test report marked in.
- The part submission warrant includes all documents ticked in the initial sample order.
- The Valeo identification number, quantity and technical revision index must be stated on all documents.
- Initial samples must be delivered separately to series material.

Incomplete deliveries of initial samples (i.e. deliveries that do not fulfil the above requirements) will not be accepted and will be deemed, as such, not to have been delivered.

In the case of re-starts and changes of application, the first three deliveries after initial sample approval must be labelled with a sticker ('modified parts')!

The production part approval process (i.e. the approval of the initial samples and of the production trial run) requires of the supplier the following as a minimum:

- The supply of the parts in accordance with the order placed (quantity/delivery date)
- The part submission warrant (PSW) and protocols that verify the complete (100%) testing of 3 samples (where necessary per form/tool) of each part number in all dimensions and specifications as per the drawing.
- The drawing (all measured positions with regard to the test report marked and numbered)
- Study of the preliminary process capability and the manner of documentation, i.e. in hard copy or in electronic format and the data format must be agreed during the APQP process.
- Test report for any test gauges used
- Material data sheet as per VDA vol. 2 or an extract from the material data sheet within the 'International Material Data Systems' (IMDS). An extract must be included with the PSW. *Unless specifically required by Valeo, IMDS verification can be omitted.*
- The fulfilment of all materials requirements must be certified.
- Technical test data for all specifications (efficiency test), that are noted on the drawing
- Production must be approved in writing by the supplier.

Any deviations from these requirements must be agreed in writing prior to submission of the samples.

The production process, including facilities, machinery, tools, compression mould and process parameters, must be recorded. These documents, together with the relevant System FMEA Process, must be made available to Valeo for inspection. A part submission warrant (PSW) may only be submitted if, in the case of deviations, the necessary actions (corrective action and drawing modifications) have been agreed in advance both with the relevant development engineer and the quality engineer at Valeo. These are to be noted in the part submission warrant. These actions must include activities, responsibilities and deadlines. This procedure is only to be applied where the drawing has

been modified by hand and signed by the relevant product engineer and accompanies the part submission warrant.

Any deviations on the above procedure will not be accepted unless they have been agreed in writing during the APQP phase. In the case of non-conformance, the supplier must apply for a special approval which will allow for the dispatch of the parts for a limited length of time or for a limited quantity.

### 4.4 Approval of initial samples

Approval for the initial sample will be given once the following requirements have been fulfilled:

- All documents required in the initial sample order have been submitted and the drawing requirements have been fulfilled

and, where necessary

- The APQP process is completed, with the exception of the initial sampling.

If approval cannot be granted, Valeo may grant special approval before series delivery.

The production trial run will be approved once the initial sample approval has been given and the targets of the preliminary process capability have been achieved.

### 4.5 Modifications

Modifications to approved products and processes are as a rule to be notified on time to the purchasing department at Valeo. On approval / authorization by Valeo, a sampling process will be automatically initiated.
If approval is not granted by Valeo, the situation remains as it was and the process up to that point in time is maintained by the supplier

# 5 Requirements for product and process quality

## 5.1 Supplier responsibility

Once the supplier has received the part submission warrant (PSW), the supplier systems must ensure that only those parts are supplied to Valeo that comply with the specifications.
The supplier is responsible for all actions that contribute to the fulfilment of the above-mentioned requirements (FMEA, product control plan etc.) and must ensure fulfilment during the entire supply period. This includes sub-contractors, internal procedures and packaging.

The incoming goods, process-related and outgoing goods inspections must be carried out in accordance with the production control plan and test instructions. The scope of the inspections and process monitoring must be in tune with the stability and capability of the processes. The methodology of all supplier activities must be geared towards failure prevention, in order to minimize inspection expenditure and to increase process safety.

## 5.2 Incoming goods inspection

The supplier is responsible for presenting an inspection concept in order to fulfil the agreed targets and specifications. Both contractual parties are committed to the target of ‘ZERO DEFECT’.
Anyway, Valeo will carry out spot checks on incoming goods. Valeo will notify the supplier immediately and in writing of any defects discovered here.

As far as this is indicated in the normal course of business, Valeo will either inspect before the next production stage those components that were manufactured with the delivered parts or will test the finished product that was manufactured using the delivered parts.

Valeo is obliged to notify the supplier immediately of any defects in a delivery, as soon as they have been detected in the normal course of business. As a result, the supplier disclaimed any objection to a delayed notification of defects.

## 5.3 Traceability

Verification of traceability is required at the time of the parts submission warrant (PSW) for all parts and for characteristics related to statutory requirements such as the Federal Motor Vehicle Safety Standards (FMVSS) for flammable parts. The supplier is obliged to install a system for the traceability of all parts that are supplied to Valeo, which will provide information on the production lot, date etc. The supplier must continuously improve and stabilize the quality of this system in order to enable the quick isolation of defective parts. An effective traceability system contributes to cost reduction in the case of a recall action. The system must include:

- Traceability of the lots with regard to production line, shift, date of manufacture and test documentation
- The lot number / date codes should be stated on each tool-produced part
- No more than two lot numbers/date codes per dispatched unit
- The lot numbers/date codes must be delivered in order of production. ‘First in – first out’ (FIFO) system for parts must be observed for stocking and warehouse.

Parts that are subject to the above and that are delivered to Valeo without the appropriate labelling as to traceability will be rejected to the account of the supplier.

# 6 Deviations and Corrective Action

## 6.1 General

Quality planning, the approval of prototypes, pre-series and series parts and a supplier system for process and product monitoring are the prerequisites for the fulfilment of the quality requirements of Valeo, which have been defined in drawings and specifications. Therefore, Valeo expects the supplier to deliver only parts that fulfil these requirements in their entirety. If the supplier is unsure of the required standard, he should contact the relevant quality department at Valeo.

Valeo expects to be notified immediately if the supplier establishes that materials may have been delivered that deviate from these requirements. In this case, an 8D-process is to be initiated by the supplier in order to prevent a recurrence. In extraordinary circumstances, the supplier can apply for special approval if the Valeo quality standards cannot be fulfilled. The special approval is limited to a specific and limited period of time and/or a specific parts quantity. During this period of time the supplier must resolve the problem while maintaining close contact with the relevant departments at Valeo.
Details of corrective action must be set out in the supplier quality system documentation.
The purchasing or the logistics department of the Valeo plant involved must be notified immediately in the case of a supply shortage. Valeo reserves the right to charge any additional costs incurred to the account of the supplier.

## 6.2 Dealing with defective delivery units

All parts that have been delivered to a Valeo receiving plant that are deemed to be defective will be rejected. The supplier in question will be notified immediately. In order to avoid a production stop in the Valeo manufacturing plants, the delivery of defective-free parts to the lines must have top priority for the supplier. For this reason, details on any action such as sorting, replacement stocks, re-working etc. are required within 1 hour, provided the Valeo receiving plant has not decided to forego these. If the supplier is not in a position to achieve this, Valeo will begin any necessary works to the account of the supplier.

The following activities must be undertaken by the supplier:

- Labelling and isolation of the defective parts in the supplier stocks
- Labelling of the first three deliveries of defect-free parts and all re-worked parts using an appropriate label on each container
- Creation of an 8D report or a similar document by agreement, which will show the completion of steps 1, 2 and 3 within 24 hours.

The time schedule for the complete resolution of the problem and the completion of the 8D report must be submitted to the quality department within one week.

The costs for any handling required in the Valeo receiving plant will be invoiced along with the actual labour costs to the supplier, including the replacement of products that have already been delivered to the customers.

### 6.2.1 Re-worked parts and problem solving

Each re-working of parts that are delivered to Valeo must be approved in writing by the Valeo receiving plant prior to dispatch of these parts. They must be suitably labelled and delivered as a separate delivery. The supplier is obliged to ensure, that the re-worked parts have been fully checked by the supplier quality department to ensure that they fulfil entirely the agreed re-working requirements. The relevant documentation shall be supplied to Valeo on request.

If the defective parts cannot be re-worked in such a way as to allow them to fulfil all the specifications, the supplier may, in exceptional cases, apply for special approval to dispatch these parts. Special approval must be given in writing.

### 6.2.2 Problem solving for rejected parts

The supplier must analyse the parts that have been returned by Valeo (production plants, service points or customers) in order to establish the cause of the defect, to work out a solution to the problem and to carry out corrective action that will prevent a recurrence.
For this reason and as in the case of internal defects, a structured problem-solving methodology must be applied. The approach preferred by Valeo is the 8D problem solving process. Comparable methods may also be applied by agreement. The supplier methodology must be defined in writing and must contain the following:

- An analysis of the underlying cause of the defect as regards product, process and quality system
- A description of short-term and final corrective action that will be undertaken to remove the root cause
- The inspections and controls applied in order to ensure that corrective action will be undertaken and that it will be effective
- The extent of similar problems that require preventative action. This includes variations and similar processes.
- Preventative action and the application of inspections and controls to ensure that they are effective.
- Statement of responsibilities for all actions and their applicable documents.

The supplier is to conclude the complaint processing within the specified period of time (as per complaint sheet) in order to completely eliminate the problem. Any notification in the interim period, for the case that deadlines cannot be met, will be in writing.

## 6.3 Costs for justified 0-km and field complaints

In the case of justified complaints, the supplier will reimburse the material value, a processing fee of 50 Euro, assembly and dismantling costs, the costs of other re-working that may be necessary, transport costs and test costs.

## 6.4 Modifications

Modifications of any nature to production parts, production processes or changes in production location are to be notified in writing to the purchasing department at Valeo and require approval. This also applies to all changes to quality assurance measures that may be employed for the manufacture of the product.

# 7 Continuous Improvement

## 7.1 General

One of the fundamental principles of our quality policy is that of continuous improvement (see Chapter 1 of this 'Commitment'). It is crucial that we maintain and continuously improve our market position. The considerable effect that our suppliers have on the performance of Valeo in terms of products and services requires the implementation of the philosophy of continuous improvement across our entire supplier base. Continuous improvement for our suppliers must include: the quality of the parts, the service (i.e. length of time, delivery, technical capability and co-operation) and prices. This requirement does not replace the need for innovative improvement.

The supplier must continue to develop his knowledge of familiar procedures and methodologies for the analysis, monitoring and evaluation of processes, in order to effectively implement the process of continuous improvement.

## 7.2 Continuous improvement of processes

Regardless of the capability requirements of process capability, continuous improvement is much valued whereby Significant Characteristics and Critical Characteristics have top priority. The supplier must identify opportunities to improve quality and productivity and implement suitable projects for improvement. Some examples are:

- Machine downtimes, machine installation times
- Cycle time
- Scrapping, re-working, repairs
- The use of floor space without added value
- Too great a variety of parts
- Waste of labour and material
- Too high costs as a result of insufficient quality
- Difficult assembly or installation of the product
- Frequent manipulation of the flow of goods

# 8 Appendix

## 8.1 Overview of modifications

| Version | Revision | Date | Revised by |
|---|---|---|---|
| 1 | First release | June 06 | Stefan Funke |
| 2 | ▪ Layout<br>▪ Modified contents:<br>- VA 4.06.01 replaced by AA 4.5.1 (page 6)<br>- Webasto replaced by Valeo (p. 8)<br>- Headlines of 3.1.1 and 3.1.2 (p. 14)<br>- WSC-Information also valid for YC & YS (p. 20)<br>- WSC, YC and YS are linked to information (whole document)<br>- "...Gilching, or any associated companies as per the German Company Law [Aktiengesetz] §§ 15 ff - hereinafter uniformly referred to as "Valeo"..." added (page 4) | July 09 | Ahmet Erdem |
| 3 | ▪ Layout of index<br>▪ Section 1.3 (REACh) added | Feb 10 | Ahmet Erdem |
| 4 | EN/ISO 9001:2000 replaced by EN/ISO 9001 (in the currently valid version) | Jan 12 | Ahmet Erdem |
| 5 | Escalation Model updated | March 13 | Sukhvinder Saini |
| 6 | Branding added | June 16 | Ahmet Erdem |
| 7 | EN/ISO 9001:2008 replaced by EN/ISO 9001 (in the current valid version) | April 17 | Ahmet Erdem |
| 8 | Spheros replaced with Valeo | July 17 | Ahmet Erdem |
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## 8.2 Glossary of terms

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| 8D process: | A systematic procedure for the resolution of problems and for the introduction of suitable corrective action that will ensure that defects will not recur. |
| Accreditation: | A procedure for the recognition of the competence and capability of an organisation to carry out specific tasks. |
| Examples: | ▪ The competence of a certification office to carry out a specific certification is accredited.<br>▪ The capability of a testing laboratory to carry out specific tests and types of test is accredited. |
| APQP: | Advanced Product Quality Planning |
| CC: | Critical Characteristic |
| Cp: | Continuous process potential |
| Cpk: | Continuous process capability |
| Design Of Experiments (DOE): | Design of Experiments contains methods such as Shainin and Taguchi for product and process improvement through experimentation to determine the effects of influencing factors and/or their diffusion.<br><br>These experiments are used on two levels: first of all to solve chronic quality problems in production and secondly for product development and planning.<br>The aim is to identify the important influencing elements – regardless of whether the cause is a product or process parameter, raw materials, purchased parts, environmental factors or measuring equipment. |
| Design review: | A documented, comprehensive and systematic inspection of a design in order to assess its capability to fulfil quality requirements, in order to identify problems where they exist, and in order to propose the development of solutions.<br><br>A design review can be carried out at any stage of the design process, and in any case on completion of the process. |
| Design verification: | In design and development, design verification refers to the examination of the result of an observed activity, in order to establish whether it conforms to the requirements of this activity. |

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| Design validation: | In design and development, design validation refers to testing the product in order to establish whether it conforms to defined user needs. |
| FMEA: | Failure Mode and Effect Analysis.<br>The analysis of potential failure effects and consequences. |
| FMVSS: | Federal Motor Vehicle Safety Standards |
| Precision: | A qualitative name for the extent of the approximation of results ascertained to the reference value |
| IMDS: | International Material Data System. An internet-based database that was initiated by the European automotive industry in order to provide detailed information on the various materials used in vehicles.<br><br>On the Internet: http://www.mdsystem.com/. |
| ISO 9000 ff: | The Euro standard ISO 9000 et seq. is the internationally-agreed standard for quality management systems |
| Justify: | Eliminating systemic measurement errors by intervening to modify the measurement device. |
| Calibrate: | Ascertaining systemic measurement errors of test equipment under specified application conditions without intervening to modify the device. |
| Critical characteristics: | Product specification (dimensions, specifications, tests) or process parameters that could have an effect on adherence to statutory requirements or the safe functioning of the product. They require special action on the part of the manufacturer as regards assembly, dispatch and in inspection and control and they must be contained in the production control plan. Critical characteristics can be labelled as follows: CC, SC, WSC, YC, YS |
| Life-time tests: | Test procedures in accordance with pre-defined specifications with the aim of testing whether the function of a product is guaranteed for the life-time of a vehicle (approx. 10 years). |
| Management review: | A formal evaluation of the status and the adequacy of the management system by top management with reference to corporate policy and objectives. |

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| Production control plan: | Written description of the system for continuous control of processes. Manufacturers must set out production control plans and incorporate into them all important (significant) and critical design characteristics, process parameters and endurance tests and/or tests as per specifications. The production control plan must be a description of the methods applied and in addition be a reaction plan and include proposals for corrective action. |
| PPAP: | Production Part Approval Process |
| Pp: | preliminary process potential |
| Ppk: | preliminary process capability |
| Ppm: | parts per million: 5,000 ppm = 0.5%<br>Measures the share of defective parts as 'defective parts per million manufactured, delivered and received parts' in a particular period of time. |
| Quality policy: | All-inclusive aims and objectives of an organisation with regard to quality as formally expressed by top management.<br>Quality policy is one of the elements of corporate policy and is approved by top management. |
| Advanced quality planning: | see "APQP" |
| QS 9000: | System requirement for quality management system at Chrysler, Ford and General Motors. |
| SC: | Significant Characteristic |
| Environmental simulation: | Process for simulating the effects of environmental conditions. |
| Validation: | Confirmation based on inspection and the maintenance of documentary evidence that the special requirements for a very specific use have been fulfilled. |
| VDA: | Association of the German Automotive Industry (Verband der deutschen Automobilindustrie) |
| Verification: | Confirmation based on inspection and the maintenance of documentary evidence that the specified requirements have been fulfilled. |
| WSC: | Webasto Significant Characteristic (for Webasto/Valeo see 'significant characteristic') |

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| Certification: | Process on the completion of which a neutral third party will issue a certificate for a unit. |
| Reliability: | Capability of a product to fulfil all function characteristics across a defined period of time. |

## 8.3 Acronyms

**Abbreviation Explanation**

| | |
|---|---|
| APQP | Advanced Product Quality Planning |
| CC | Critical Characteristic |
| CNC | Computer Numerical Control |
| Cpk | Critical Process Capability |
| DOE | Design of Experiments |
| EC | European Community |
| ESC | Escalation Model |
| FIFO | First In - First Out |
| FMEA | Failure Mode and Effects Analysis |
| FMVSS | Federal Motor Vehicle Safety Standards |
| IMDS | International Material Data System |
| ISO | International Standards Organization |
| MDS | Material Data Sheet |
| MSA | Measurement Systems Analysis |
| OEM | Original Equipment Manufacturer |
| PPAP | Production Part Approval Process |
| Ppk | Preliminary Process Capability |
| Ppm | Parts per Million |
| PSW | Part Submission Warrant |
| SC | Significant Characteristics |
| SPC | Statistical Process Control |
| 8D | Report on problem resolution prevention |