

VW Group Customer Specific Requirements for Suppliers

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1 Scope of this document

The scope of this document is to ensure compliance to customer requirement by sub-suppliers of SMP Automotive who are supplying for any VW Group project. This document is listing requirements for these suppliers in addition to standard IATF16949 requirements and in addition to standard SMP requirements.

2 Responsibility

Suppliers who are supplier for SMP of a component for a VW Group product shall meet all requirements listed in this document during the whole project lifetime. This includes but not limited to:

- Regularly check for updates of this document on www.smp-automotive.com
- Ensure availability and awareness of related VW Group standards and requirements mentioned in this document
- Ensure requirements are met in their supply chain

3 Quality Management System (IATF 16949 section 4.4)

Primary manufacturer responsibility for the purchased parts installed in the finished product lies with the Supplier or Sub-supplier. The Supplier must therefore implement all organizationally and technically feasible measures to ensure the product safety of its parts and those of its Sub-suppliers and to minimize product liability risks.

The Supplier shall ensure, and require its Sub-suppliers to ensure, the following:

1. that a highly-developed appreciation of the importance of quality exists throughout their organization,
2. that the required product safety is guaranteed in the component development stage,
3. that special attention is paid to product safety in the quality planning process,
4. that the quality capability of the production processes is ensured and documented,
5. that appropriate production quality assurance measures are implemented to minimize the risk of faulty products,
6. that timely identification of faulty products as early as possible in the production process is ensured by appropriate measures (to minimize cost / loss of value added),
7. that quality data and the legally required compliance tests are documented in detail sufficient to prove that the products have been manufactured in accordance with applicable law and safety standards,
8. that a material tracking system is in place to limit the consequences of any faults that occur,
9. that all relevant personnel receive detailed information and training on product safety and product liability issues and
10. all Sub-suppliers use comparable systems analogous to Formel Q-konkret etc. that meet the Customer's requirements,
11. That an on-site product safety representative (PSB) has been appointed for each stage in the supply chain. The first tier Supplier's product safety representative must be entered in the Supplier database (LDB). The Supplier must ensure that this entry is up to date at all times,

12. that components with limited Shelf life meet all special labelling requirements, particularly those required by the Genuine Parts Supplier manual)

4 **Product Safety (IATF 16949 section 4.4.1.2)**

VWAG requires a management role defines as Product Safety Representative"
See Formel Q-konkret, chapter 4.2- Products Safety Representative.

VW- specific remark to "note" VWAG considers the "special approval" a responsibility of the supplier. No Additional approval by VWAG is required.

5 **Measurement System Analysis (IATF 16949 section 7.1.5.1.1)**

Suitability of Inspection Processes – consideration of measuring accuracy in the Inspection Processes (VW10119). VDA Volume 5. 6

6 **Record Retention (IATF 16949 section 7.5.3.2.1)**

In addition to the general requirements of the Quality Management System, Suppliers must maintain verification for individual D/TLD parts. This data must be kept for a minimum of 15 years after last production (see VDA Volume 1). This also includes the following documents that are identified with "D" or "TLD", these can be Drawings, Tables, Production Release Documentation, Technical Delivery Specifications, Test Specifications, Sample Reports, and other Quality Records, which can be demanded as proof and which can relieve the party of liability.

Verification Documentation also includes information regarding Planning Type activities, the selection and qualification of Personnel, suitability of Test Equipment, as well as Process Capability investigations and correspondence.

If there is a claim and/or if the Customer so requests, the Supplier must be prove that he has done everything in his responsibility, as the supplying company, to eliminate any faults and defects in their particular product.

Suppliers are required to apply a systematic verification process for all D/TLD parts.

As proof of effective implementation of the specific requirements the Supplier is required, using the Questionnaire for D/TLD (see supporting documents on the Group Business Platform), to conduct every 12 months a Self-Audit which has a valid period of max. 12 months. This shall be conducted self- reliantly for each manufacturing location by a Self-Audit and must be documented. The Supplier is responsible to apply the process in the same way within his Supply Chain, for Bought-in Parts and Outsourced Process Steps.

If shortcomings are identified during the Audit, it is expected that the Supplier will implement required improvements immediately of his own accord.

The implementation of Improvement Measures and their effectiveness are to be verified by the Supplier by conducting a new D/TLD Audit, this is within their own responsibility. Required documentation is to be traceable.

Results of the Self Audit are to be kept for at least 15 years and to be made accessible for any verification by the Volkswagen Group at any time. The evidence of activities by the Supplier to secure and comply with Quality Requirements is to be guaranteed at all times.

For the verification process all defined Standards according to VDA Volume 1 and Volume 6 Part 1, IATF 16949 as well as Customer Specific requirements (amongst others the Formel Q-konkret) are to be considered. The Customer reserves the right, to verify the compliance with the requirements at the Supplier by Process Audits, Technical Reviews, D/TLD audits or other supplier checks.

Upon request the results for the D/TLD Self Audit are to be accessible to the Customer.

7 Customer communication – supplemental (IATF 16949 section 8.2.1.1)

Formal-Q-capability appendix (Chapter 2; 7.2)

Access approval for the VOLKSWAGEN Group Communication Platform (www.vwgroupsupply.com)

8 Customer Designated Special Characteristics (IATF 16949 sections 8.2.3.1.2/8.3.3.3)

VWAG requires suppliers that supply parts with D/TLD-marking, to perform an annual self-audit according to the VW-defined D/TLD-Audit.

9 Design and development planning – supplemental (IATF 16949 section 8.3.2.1)

VWAG requires all suppliers to implement the Maturity Level Assurance process (QPN-I)

10 Development of products with embedded software (IATF 16949 section 8.3.2.2)

VWAG requirements regarding sub-supplier management are described in Formel Q-Capability Software (chapter 8), as well in the other applicable documents indicated in Formel Q-Capability Software (chapter 8)

11 Design and development changes – supplemental / Control of changes (IATF 16949 section 8.3.6.1 / 8.5.6)

VWAG requires all suppliers to obtain documented approval, or a documented waiver, prior to production. See Formel Q-konkret, (Chapter 4.5) – Change Management and Volkswagen Standard VW 01155

12 Supplier selection process (IATF 16949 section 8.4.1.2 e)

VWAG requires in the Formal Q-Capability Software (Chapter 4-8) the employed quality assurance tool for evaluation suppliers' quality capability to develop software products. Depending on the product additional requirements may apply, which are described in other applicable documents indicated in Formal Q-Capability Software (Chapter 2)

13 Supplier Monitoring (IATF 16949 section 8.4.2.4)

The Supplier is responsible within their Supply Chain for Purchased Products and Outsourced Processes.

This includes that the Direct Supplier informed its Sub-Suppliers throughout the supply chain about the Volkswagen Group requirements and ensures that the requirements are known, understood and implemented. The Supplier must ensure that all risks within his Supply and Process Chain are clearly identified and also evaluated, and systematic measures will be implemented to reduce any risks. For the Evaluation of the Supply Chain, all requirements and evaluations according to Formel Q-Capability must be fulfilled. Upon request and in the Self-Audit the supply chain is to be present. This basically includes the requirement of Project specific evaluations according to IATF 16949, Risk Analysis (critical paths similar to VDA for the maturation grade assurance) and Evaluation of Quality Capability of the overall Supply Chain. The Process Chain (Sub-Suppliers) includes all planned and realized value added activities / services that may have an impact on the required process and Product Quality.

The Customer reserves the right, to review such documentation and to verify the Evaluation of the Supplier, e.g. by mutual on-site Assessments with the direct supplier (1st tier supplier) within the Supply Chain or for Outsourced Process Steps. Basically the evaluations of the Supplier Chain can be taken into consideration for the overall Quality Capability. The evaluation will be conducted according to the actual Sub-Supplier Management questionnaire or with the Process Audit Process. With a negative evaluation the Customer reserves the right to take this into account for rating the Direct Supplier. The evaluation is based on the traffic signal system for the individual assessment of each question, as well as in the overall classification. The criteria of the traffic light system are described in Appendix "C".

14 Second-party auditor competency / Second-party audits (IATF 16949 section 7.2.4 / 8.4.2.4.1)

The process-audits in the supply chain must be conducted in accordance to Formel Q-Capability by certified VDA 6.3 auditors. (See auditor qualification in Section 3.2 of FQF 8.0)

15 Control plan (IATF 16949 section 8.5.1.1)

(See Formel Q-Capability, (chapter 4.2) Product Audit)

The product audit must be defined in the Product Control Plan. Product audit shall take place every 12 months for each product manufactured as a series production part.

16 Management of production tooling and manufacturing, test, inspection tooling and Equipment (IATF 16949 section 8.5.1.6 g)

The Economy Supplier is required to document a tool management system as well as scheduled and preventive service / maintenance for machinery and tools. Tool maintenance and modifications shall be documented. The Customer shall be promptly notified if any tools are lost or damaged. See VDA vol. 6.3.

VW group standard VW34022 for making of tools, auxiliary tools, test equipment and gages (identification plate) must be ensured.

17 Release of Products and Services (IATF 16949 section 8.6.1)

Part of Production Process and Product Approval (PPA) according to VDA vol. 2)

The sampling is to be based on VDA vol. 2. The latest version of the brochure "Formula Q – New Parts Integral" contains additional, more detailed Customer requirements regarding the sampling process.

This section 3.2 defines rules for designated parts in assemblies and for assuring consistent component quality.

The following rules apply with regard to designated parts, which are line with the recommendation in VDA Vol. 2 concerning the customer-specific product approval, "Evidence for PPA", item 21 "PPA Status of components in the Supply Chain":

Responsibility for the initial sample testing and approval of designated parts in higher-level assemblies resides with the Economy Supplier in coordination with the receiving plant; if there is more than one, with the receiving plant of first use, which is generally also the type leader plant.

Assemblies such as the front end module, cockpit, axles, seats, fuel tank, roof modules, complex welded assemblies, etc. may also contain designated parts that, for technical reasons, are delivered as individual parts directly to the Customer in the Volkswagen Group company for sampling. In such cases, the Customer and the Economy Supplier shall define the scope of services and responsibility of the Supplier in a standardized interface agreement at the outset of the tender process.

As part of the assembly sampling, Economy Suppliers shall provide the Customer with all results on both self-sourced and designated parts in accordance with the aforementioned procedures. The details shall be agreed between the Customer and the Economy Supplier in the sampling planning meetings. This applies especially where sample testing of variant rich parts / assemblies is necessary, e.g. regarding assemblies involving diverse equipment options, such as seats and door trim panels.

As part of the qualification and the preparation of the sampling, the Economy Supplier is responsible for coordinating, agreeing, and assessing all assembly quality requirements, e.g. joints, flushness, color, gloss level, functional dimensions, functional safety and electronic assessment. The Economy Supplier shall verify and ensure compliance with quality requirements using suitable test and measuring equipment. The same shall apply later with regard to compliance with quality requirements during production delivery, see section 1.4 above. Overall approval of the assembly is the Customer's responsibility.

After the initial sample approval, the Economy Supplier is required to complete and feedback on tooling data in coordination with the Customer's Quality Assurance department for purposes of ensuring component quality where duplicate tools are used.

Formel Q-konkret (Chapter 3.2) – Initial sample testing and approval:

The sample testing is to be based on VDA vol. 2. The latest version of Formel Q – Neuteile Integral" contains additional, more detailed Customer requirements regarding the sample testing process. This section 3.2 defines rules for designated parts in assemblies and for assuring consistent component quality.

Responsibility for the initial sample testing and approval of designated parts in higher-level assemblies resides with the first-tier supplier in coordination with the receiving plant (if there is more than one, with the receiving plant of first use, which is generally also the type leader plant).

(Refer for complete requirements to Formel Q-konkret, Chapter 3.2)

18 Layout inspection and functional testing (IATF 16949 section 8.6.2)

Formel Q-konkret (Chapter 4.6) – Requalification

In the context of VW group, the term “Requalification” is equivalent to the IATF-term “layout inspection and functional testing”.

To ensure quality the supplier must carry out a regular requalification of its scope of supply in accordance with VDA publication “Robust Production Process” (Section 5.3.4). VW group requires a complete requalification (equivalent to Production-and-Process-approval/initial sample release) at least every three years.

Requalification cycles can be defined by legislation, government agencies, and by component-specific requirements (e.g. in the performance specifications / Lastenheft) and must be implemented in the related product control plan.

Any deviation from the requalification content must be agreed between the supplier and the customer.

19 Statutory & regulatory conformity (IATF 16949 section 8.6.5)

It is to expect a worldwide use if certain destination were not specifically restricted by VW group.

20 Nonconforming Product Disposition (IATF 16949 section 8.7.1.7)

Must include suitable inspection and evidences of sub-supplier parts.

21 Monitoring, Measurement, Analysis and Evaluation (IATF 16949 section 9.1)

Process Capability review for Measurable characteristics (VW 10131)

When validating the process capability, the quality of a process in terms of the specifications of the products created by the process is evaluated.

On-going process capability shall be determined and assured by process capability inspections (PFU), see IATF 16949 sections 7.5.2 and 8 ff., in accordance with VW Standards 10130, 10131, and 10119, see VDA vol. 4.1 and 5.

The minimum scope of the special characteristics that are measured to determine the Cp and Cpk values shall be defined in the FMEA for the product and the process (P-FMEA). These documents can be viewed at any time by the Customer.

21.1 Internal Audit (IATF 16949 section 9.2)

VWAG requires a yearly supplier self-audit (VA/SL) acc. to Formel-Q capability (chapter 3), a Self-Audit has valid time period of max. 12 months.

A specific self-audit format must be used.

Supplier self-audit must be conducted by certified VDA 6.3 auditors.

Formel Q-Capability-appendix must be considered.

In case of D/TLD - marked parts supplier to VWAG a D/TLD - supplier Self-Audit acc. Formel Q-Capability is required within every 12 months. (Chapter 7: "Quality Verification Audit for D/TLD parts")

21.2 Quality Management System Audit (IATF 16949 section 9.2.2.2)

To ensure quality, the Supplier must carry out a regular requalification of its scope of supply in accordance with the VDA publication "Robust Production Processes", section 5.3.4, see IATF 16949, section 8.6.2. The Customer requires a complete requalification at least every three years.

Requalification cycles can be defined by legislation, government agencies, and by component-specific requirements, e.g. in the specifications, and shall be implemented. Testing frequencies shall generally be re-evaluated and agreed with the Customer's Quality Assurance department wherever the capacities to be produced are changing considerably. Any deviation from the requalification content must be agreed between the Economy Supplier and the Customer.

21.3 Manufacturing Process Audit (IATF 16949 section 9.2.2.3)

Process Audit in Series Production presumes a completed Product Creation Process (Product / Process Development) and includes increased focus on Customer Satisfaction and Supporting Processes.

The completion / implementation of defined actions once the Product Creation Process is finished is a Mandatory Requirement and will be verified during the Audit.

The Audit in Series Production without Process Development can be conducted with the launch of Series Production (SOP) or during the overall Manufacturing Period.

The Process Audit is conducted according to VDA 6.3 and uses the questions of the Process Elements:

- P5: Supplier Management
- P6: Process Analysis / Production
- P7: Customer Care, Customer Satisfaction, Service

Additionally there are further requirements listed in the section "Additional Formel Q-Capability Requirements that exceed VDA 6.3 Requirements" to be found in the Appendix document (see Group Business Platform). The evaluation procedure is described in Appendix "Formel Q-Capability Process Audit". Additional results from the Product Audit conducted in parallel will be considered. For determining the overall result for Formel Q-Capability Process Audit, the Grading guidelines must be applied.

An up-grading can only take place through a Customer Audit at the Production site of the Supplier after the successful and sustainable implementation of the Improvement Measures.

An upgrading from C to B will only be established once a "robust B" rating during a Customer Audit is reached. (i.e. degree of fulfilment greater than or equal 85% (see VDA 6.3)

21.4 Product Audit (IATF 16949 section 9.2.2.4)

The Supplier is obliged to conduct Product Audits according to VDA 6.5. The Product Audit shall take place at least every 12 months for each Product manufactured as a Series Production part.

For any A and B-faults as well as systematic C-faults caused by the supplier, the supplier shall immediately inform the Supplier Quality department of the Customer by reporting the issue. The implementation of further necessary actions is to be coordinated.

22 Warranty Management Systems (IATF 16949 section 10.2.5)

The process of failure analysis including NTF shall be implemented.

Procedure shall comply with VDA volume "Field Failure Analysis"

23 Customer Complaints and Field Failure Test Analysis (IATF 16949 section 10.2.6)

Cost and expenses resulting from field claims and 0 km complaints shall be shared by the Customer and the Economy Supplier based on the principle of causation.

The Economy Supplier's responsibility for field failures during the warranty period will be determined using a sampling procedure in accordance with the VDA publication "Field Failure Analysis" based on Technical Factors (TF) or the Claims Acceptance Rate.

The Economy Supplier's responsibility for field failures during the warranty period may be determined by other means where the defect is corrected without parts replacement.

The technical and commercial handling of supplies of defective goods shall in general take place independently through the Customers that install the part/component/system regardless of which Customer ordered the goods.

The principles that follow shall be supplemented by the respective Customer's specific provisions.

The Customer reserves the right to decide independently whether to implement quality-related measures (special situations). The term special situations refers, for example, to goodwill payments or recall, service, or workshop measures.

Economy Suppliers shall bear a portion of the Customer's costs that is proportionate to their share of responsibility. The share of responsibility will be determined to reflect causation (principle of causation). The share of responsibility determines the percentage of total costs incurred that the Economy Supplier must bear. Group Quality Assurance shall coordinate the handling of special situations affecting more than one Customer.

24 History of revision

Index	Date	Modification / Change	Author	Funktion
A	30.09.2020	first issue	Mujadzic, Erim (SMP)	Global Director SQM