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## TRATON Customer Specific Requirements

### Quality Assurance Requirement for Purchased Parts & Suppliers

#### Foreword

This Commercial Vehicle Standard (CVS) contains fully harmonized requirement specifications of the brands (legal entities) MAN Truck & Bus SE (hereafter MAN), Scania CV AB (hereafter Scania), Navistar Inc. (hereafter Navistar) and Volkswagen Truck and Bus Ltda (hereafter VWTB) which are congruent to fulfil technical requirements of all TRATON brands. Any review of this standard shall only be done in agreement with all TRATON brands.

In this CVS, all non-company standards are referred as international standards (e.g.: ISO, EN). These international standards are available as national edition at the respective national standardization organization (e.g.: DIN ISO, SS-ISO, DIN EN, SS-EN).

#### Notice

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Make sure that you have the latest version of this standard. Latest version is the electronic issue distributed by the respective Standardization organizations and if applicable the respective supplier portal.

<b>Technical responsibility</b>  MAN Truck & Bus SE: Supplier Quality and Delivery Management, BQ KPI, Steering & Support, BQSK  Scania CV AB: Supplier Quality and Delivery Management, SR Procurement Processes & Methods, SNDP  Volkswagen Truck & Bus QAPC  Navistar International Corporation: Quality Supplier Quality	<b>Standardisation organisations</b>  MAN Truck & Bus SE, Standardization, EHOS  Scania CV AB: Corporate Standards, EMCC	Continuation page 1 to 29  Replacement for: CVS10:2022-03  <b>Distribution:</b> This Commercial Vehicle Standard is distributed at all involved brands of TRATON Group internally and also externally to relevant suppliers via supplier portals of the involved brands.
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## Contents

Foreword.....	1
Notice .....	1
Contents .....	2
Changes from previous issue .....	3
Scope .....	4
0 General provisions.....	4
0.1 Additional reference documents.....	5
1 Request, offer preparation and general requirements .....	6
1.1 Offer prerequisites .....	6
1.1.1 Documentation.....	6
1.1.2 Correspondence and contact person .....	6
1.1.3 IT systems .....	6
1.1.4 Compliance with environmental, material, statutory and regulatory regulations.....	7
1.1.5 Use of recycled material .....	7
1.1.6 Requirements for Supplier compliance with ESD regulations.....	7
1.1.7 Cybersecurity management .....	7
1.2 Request documents .....	8
1.2.1 Supplier's duty to obtain information .....	8
1.2.2 Test equipment and gauges .....	8
1.3 Supplier concept development.....	8
1.3.1 Selecting Suppliers (tier2-n).....	9
1.3.2 Logistics and packaging concept.....	9
1.4 Quality framework agreement / Quality Target Agreement.....	9
1.4.1 Responsibility in the supply chain.....	10
1.4.2 Transparency in the supply chain .....	11
1.4.3 Access to business and plant premises of Suppliers (tier2-n).....	11
1.4.4 Special process requirements .....	11
1.5 External service providers .....	11
2 Quality criteria for award of contract.....	12
2.1 Elements of assessment criteria .....	12
2.2 Safeguarding measures in conjunction with award of contract.....	12
2.3 Concept Responsibility Agreement .....	12
3 Cooperation with Suppliers during the product development process .....	12
3.1 New parts integral qualification program.....	13
3.2 Quality planning.....	13
3.3 Production process and product release (PPA/PPAP) .....	14
3.3.1 Components requiring certification .....	15
3.3.2 Part approval.....	15
3.3.3 MAN .....	15
3.3.4 Scania/Navistar .....	16
3.3.5 Part release .....	16
3.4 Software.....	16
4 Quality measures during series production.....	16
4.1 Ongoing assurance of process capability .....	16
4.1.1 Tool management .....	17
4.2 Product safety and product liability.....	17
4.3 Products requiring documentation and special verification.....	17
4.3.1 D/TLD verification.....	17
4.3.2 Verification – chemical products .....	18
4.4 Identification and management of problems .....	18

COMMERCIAL VEHICLE STANDARD  
MAN Truck & Bus SE / Scania CV AB / Navistar Inc./ Volkswagen Truck & Bus

CVS10:2024-08

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4.4.1	Complaints management.....	19
4.4.2	Early warning system.....	20
4.4.3	Obligation to conduct own field observation.....	20
4.5	Continuous improvement process (KVP).....	20
4.6	Change management .....	20
4.7	Layout Inspection / Requalification .....	21
4.8	Lessons Learned .....	21
4.9	Handling of warranty claims and special situations .....	21
4.9.1	General remark .....	22
4.9.2	Liability of the Supplier .....	22
4.9.3	Warranty period.....	22
4.9.4	Calculation of the Supplier's share of costs .....	22
4.9.5	Costs to be reimbursed.....	23
4.9.6	Billing of costs due to defective parts .....	24
4.9.7	Serial complaints and recall actions on road safety reasons.....	24
4.10	Technical Supplier Reviews.....	24
4.11	Critical Supplier program .....	24
5	Terms and Abbreviations .....	25
6	Normative references .....	27
Annex A	(informative) Change history .....	29

### Changes from previous issue

The whole standard has been re-written. Selected parts have been extracted from Formel Q Konkret and adapted to TRATON requirements.

## Scope

This standard contains Customer requirements, which are more specific to the commercial vehicles area, different or are in addition to what is stated in the reference documents. The document is following the Volkswagen Formel Q Konkret document structure.

Be aware that this standard only contains product quality-related requirements and that other documents define Customer requirements for other business areas and functions.

The order of precedence in the reference documents is:

1. TRATON Customer Requirements CVS10
2. VW Formel Q series when referred to.
3. IATF16949 / ISO 9001

The first two documents can be found on VW ONE. KBP (Konzern Business Platform) [www.vwgroupsupply.com](http://www.vwgroupsupply.com).

The CVS10 can be found at:

*Information > Divisions > Quality Assurance > Brand Specific Information*

the VW Formel Q series can be found at:

*Information > Divisions > Quality Assurance > Formel Q*

This standard CVS10 is additionally distributed internally and via the respective supplier portals of the involved brands.

**MAN:** The terms and conditions laid down below are prior to the MAN “Purchasing Conditions for Production Materials and Spare Parts for Commercial Vehicles”.

**Navistar:** The terms and conditions are first prior to CVS10.

## 0 General provisions

For the purpose of simplification, '**Customer**' refers to the TRATON Brand(s) receiving the purchased items, '**Suppliers**' are those who deliver items to the TRATON Brand(s), and **Suppliers (tier 2 – n)** are those who deliver items to the Suppliers.

When applicable, the specific brand for which the requirement is valid will be stated. When no brands are stated, it is a common requirement, or the requirement stated in Formel Q applies.

The English document is the genuine and jointly developed version, which is approved by all TRATON Brand(s).

TRATON ensures that the Supplier receives access to the required Customer criteria and requirements by means of activation on the ONE.KBP. These shall be taken into account in calculating the offer. If the Supplier is enabled on the Group Business Platform, the DUNS numbers for the contract, development (for hardware and/or software), the logistics and production site shall be entered in the Supplier database and kept up-to-date.

For more terms and abbreviations see chapter 5 *Terms and Abbreviations*.

The following apply in addition:

- statutory and regulatory directives and conditions
- the agreed technical supply specifications and standards of the Customer,
- the VDA publication series “Qualitätsmanagement in der Automobilindustrie” [Quality Management in the Automotive Industry] and “Das gemeinsame Qualitätsmanagement in der Lieferkette” [Joint Quality Management in the Supply Chain] ([www.vda-qmc.de](http://www.vda-qmc.de)) in their latest versions,

- CVS92 TRATON Software Quality Requirements for Embedded Software in Components, Systems and Vehicles
- the rules and references listed in the brand-specific supplements annex.
  - Applicable laws and regulations
  - AIAG Automotive Core Tools

The contractual Customer-specific regulations of the brands for the passing on of additional expenses caused by Suppliers (e.g. for field, 0km and CKD complaints) apply.

The Supplier shall obtain the referenced documents on their own responsibility.

The Supplier shall take all aforementioned documents into account when preparing their offer and assures by submitting the offer that he is aware of them, acknowledges them, complies with them and is responsible for the implementation of the requirements in their supply chain, including assigned added value (e.g. subcontractors, plant Suppliers, outsourced manufacturing processes, process steps through outsourcing, partial production at second locations, extended workbenches, contract order manufacturing).

The warranty provisions in accordance with the contract or the terms and conditions of purchase for product material of the respective Customer as well as any existing separately concluded warranty contracts remain unaffected and take precedence in the event of contradictions.

**MAN:** The terms and conditions laid down below are prior to the MAN “Purchasing Conditions for Production Materials and Spare Parts for Commercial Vehicles”.

**Navistar:** Unless specifically exempted by Navistar Director of Supplier Warranty, Supplier is required to comply with the Navistar Supplier Warranty Requirements (Document IW-001-SWR) for the Product in effect at the time of Supplier RFQ. Existing or separately concluded Supplier warranty terms that contradict Navistar Supplier Warranty Requirements (Document IW-001-SWR) published as of the date of Supplier RFQ do not apply. Supplier understands and agrees it is required to be capable of fulfilling Navistar’s supplier warranty requirements for the Product.

Information arising out of the business relationship may be shared with TRATON and other Volkswagen Group Companies.

The disclosure of confidential information by the Supplier to external third parties may only take place with the written consent of the Customer. The external third parties are to be bound to secrecy.

By submitting a tender/quotation to a brand of the TRATON group, the Supplier acknowledges having read, understood and agreed to comply with all requirements and demands set forth in this CVS10.

In the part price offer, all quality assurance activities and measures needed to reach for zero defects in manufacturing and deliveries (see reference documents) are to be included.

**NOTE concerning cybersecurity references to CVS92:**  
**CVS92 is currently under development. Until release of this standard all cybersecurity requirements shall follow the Formel Q Konkret, chapter 3.4. The release of CVS92 will be announced.**

### 0.1 Additional reference documents

Suppliers shall always comply with the latest versions of brand-specific standards (including e.g. technical standards). In order to receive information about all standards updates, Suppliers shall subscribe to the newsletter of and check the respective brand-specific supplier portals.

Brand product standards and other requirement documents can be found on the respective brand portals.

Portal for Technical Documentation (PTD) MAN: [www.ptd.man.eu](http://www.ptd.man.eu)

Scania Supplier Portal (SSP) for Scania: <https://supplier.scania.com>

ONE.Portal for VWTB: [www.vwgroupsupply.com](http://www.vwgroupsupply.com)

Navistar Supplier Network [www.navistarsupplier.com](http://www.navistarsupplier.com)

Note: A list of normative references is added in chapter 6 *Normative references*.

**MAN:** Standard M 3335 applies for change management of technical standards.

**Scania:** Updates of standards leading to product and/or process changes shall, for Scania contracted parts, be handled via the Supplier Change Request (SCR) routine.

**Navistar:** ISQ-003-FO – SREA apply.

## 1 Request, offer preparation and general requirements

### 1.1 Offer prerequisites

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### 1.1.1 Documentation

The Customer is entitled to request that the Supplier issue copies of documents that are necessary for checking or verifying the correct implementation of quality assurance (e.g. parts history, test sequence plan, test records, individual parts drawings, safety-chemically relevant recipes, production layout). If the senior management of the Supplier decides that it is not possible to issue copies for reasons of confidentiality, it shall be possible to at least view the documents. All documents shall be available in English and other languages where applicable.

#### 1.1.2 Correspondence and contact person

All communication shall be submitted in English. Contact persons at Suppliers shall be able to communicate with the Customer in English both verbally and in writing. Other languages might be accepted when allowed by the Customer.

The Supplier shall ensure that the Customer is provided with a contact person authorized to make decisions over the course of the project until the end of service (EOS).

If necessary, permanent representation by a resident shall be decided upon in coordination between the Supplier and the Customer.

A prescribed language for contact persons shall be agreed with the Customer on a project-specific basis for the project and series production phases.

#### 1.1.3 IT systems

Suppliers portals are online platforms that allow access to Customer standards, manuals, and WEB-based applications (such as LDB, KPM, KVS, LION, BeOn, eQ2, etc.), Suppliers need to ensure that qualified staff members can access the communication platforms and meet Customer's expectations for response times and availability. Suppliers need to validate the information and contact persons in the Suppliers' portals and applications after any change.

Suppliers need to register for the secure area (login) and accept the individual applications before signing a contract with the Customer. These applications are essential for component classification, approval, fault rectification, and data transfer.

#### **1.1.4 Compliance with environmental, material, statutory and regulatory regulations**

During the contract period, the Supplier is obliged to ensure that its products comply with all applicable laws and regulations, as well as statutory or official decisions. The Supplier will continue to monitor and ensure compliance even after the products have been handed over to the Customer.

The Supplier will ensure that the products that are the subject matter of this contract fully comply with the environmental, material and substance requirements.

The Supplier shall ensure that components, operating supplies and process materials which remain on the vehicle or are intended for the supply of spare parts can be used worldwide in accordance with the respective statutory requirements for substances and materials (e.g. chemicals, heavy metals, persistent organic pollutants and biocides). The same applies to "off-board" systems, e.g. charging infrastructure, which are used in conjunction with the vehicle. The intended uses and legal deadlines shall be taken into account in each case.

The Supplier shall inform the Customer about the requirements and deadlines on the material composition. Furthermore, the Supplier shall inform the Customer immediately of any changes to the material composition, inquiries by state authorities and doubts regarding the worldwide usability of contractual products and initiate measures in coordination with the Customer.

##### **1.1.4.1 Restricted substances in delivered parts and components/Reporting of part material composition**

Suppliers are responsible, and shall have a documented routine, for monitoring the changes in the list of substances (GADSL-Global Automotive Declarable Substance List), according with CVS55.

The Suppliers are responsible for collecting Material Data Sheet (MDS) declarations from Suppliers even when Customer assigned/directed parts are involved.

**MAN:** The corresponding IMDS standard is M 3212 and MAN 239.

**Scania:** A submission of the latest accepted MDS by the Customer is required with each PPAP/PQA request. The corresponding IMDS standard is STD4352 and CVS55.

**VWVB:** The corresponding IMDS standard is according to VDA 2 Chapter 8.

**Navistar:** MPAPS B-50 Restricted Chemical substance applies, follow document SQ-011-PR.

#### **1.1.5 Use of recycled material**

If the recycled material is not stipulated in the technical specification (incl. re-granulated material) the usage is only permitted with the approval of the Customer.

When using recycled material, all technical and functional requirements shall be met.

#### **1.1.6 Requirements for Supplier compliance with ESD regulations**

The requirements of the component specifications, the technical drawing, EN 61340 shall be complied with in assembly, packaging and logistics for ESD-relevant components, assemblies and purchased parts. All relevant employees at each job level shall be trained accordingly.

**MAN:** The relevant MAN standard is M 3431

**VWVB:** VW standard 80132 "ESD Guidelines for Automotive Manufacturers apply

**Navistar:** The relevant MPAPS and/ or R&D requirements is applicable.

#### **1.1.7 Cybersecurity management**

See CVS92. Other additional brand specific requirements may apply.

## 1.2 Request documents

The Supplier shall check all requirements of the request documents with regard to completeness, consistency, feasibility and report anomalies to the Customer in writing. If any amendments/additions are required, for example with regard to software, paint quality, residual dirt, safety equipment, (airbags, etc.), they will be clarified with the respective technical departments of the Customer before the offer is created (e.g. product development, production process and product requirements) and will be documented in writing.

All quotations submitted by Suppliers shall include at least the following items:

- D-U-N-S® Number of development, manufacturing and software development locations.
- Manufacturing concept description (e.g. type of process, flow chart, factory layout, preliminary control plan, material requirements).
- Quality Assurance time plan (incl. testing & method, PPA/PPAP submission)
- For Scania and common sourcing projects: Supplier selection for special processes with Scania's "Customer approved sources form".
- For MAN and common sourcing projects MAN's "Consolidated checklist"
- For Navistar and common sourcing projects: Feasibility form with RFQ documentation required.
- Annex A Compliance Statement to CVS10 (The original matrix to fill-in can be found in the Quotation system STAR. Some cells can contain additional information)
- Annex B Customer Approved Sources Form (The original form can be found in the Quotation system STAR).

The above stated are minimum requirements. More information may be required upon request from the Customer.

For special application (e.g. low volume, customized truck & bus solutions and industrial & marine engines, etc), the requirements can be adapted by the quality Supplier of the sourcing TRATON brand.

### 1.2.1 Supplier's duty to obtain information

The Supplier is responsible for obtaining the documents referenced in the request documents. Customer-specific documents are provided on the specific Customer portal.

### 1.2.2 Test equipment and gauges

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

## 1.3 Supplier concept development

After consultation with the Customer, the Supplier will prepare an offer, the content of which will vary depending on the scope of development and which shall consider least the following items:

- Description of structural design (e.g. geometry, materials, functions, software).
- In case of cybersecurity relevance, presentation of the cybersecurity management system in the supply chain, CVS92 apply.
- Project Supplier planned with responsible contact partners for the development and production site.
- Explanation of planned development and production processes, factory layout and supply chains.
- Explanation of a deadline schedule for a parts approval target forecast.



- Details of testing and approval planning (manufacturing chain including recipient).
- Description of Supplier management and change management as well as the requalification process.
- Explanation of measures for achieving quality targets.
- Plausibility analysis and agreement on targets (0km and field).
- Commitments regarding target costs, deadlines, capacities.
- Risk assessment regarding deadlines, costs, and quality.
- Stipulation of a cost bearer for special measures that incur costs.
- Binding feasibility statement based on specifications.
- Logistics and packaging concept

A plausibility check for project-critical scopes is carried out as part of the Customer Technical Review Meeting (e.g. QTR, TRM) Any deviations from the requirements shall be reported in writing to the Customer's Technical Review, contact person and escalated if necessary.

### **1.3.1 Selecting Suppliers (tier2-n)**

There may be additional Customer specifications with regard to the selection of Suppliers (tier2-n). Compliance with the requirements of CVS10 terms (e.g. from Chapter 1.1.4) shall also be ensured by the Supplier within the supply chain and the subcontractors shall be obliged accordingly.

Suppliers (tier2-n) who are all involved in special manufacturing processes (i.e. painting and chrome-plating of components and for high-strength connecting elements and seals, special processes defined by Customer, but not limited), shall obtain approval from the Customer.

If necessary, the Procurement and Quality divisions of the Customer conclude appropriate interface agreements with the Supplier.

### **1.3.2 Logistics and packaging concept**

In order to avoid transport damage, the Supplier shall store and deliver the goods in suitable transport means approved by the Customer, taking account of the agreed conditions (time, temperature, light, shielding gas, ESD requirements etc.).

Unless otherwise agreed, packaging planning is the responsibility of the Supplier. The Supplier shall provide evidence of the suitability of the transport protection concept and the packaging in pre-production (installed for PPD pilot production, verified for PPD pre-production).

The Supplier is responsible for the cleanliness of the transportation containers as well as for compliance with cleanliness criteria during delivery (transfer of risk).

**MAN:** M3399 shall be followed

**Scania:** Chapter 1.3.2 is not valid - STD4172 is valid.

**Navistar:** Chapter 1.3.2 is not valid, - D-13 Packaging Requirement applies.

## **1.4 Quality framework agreement / Quality Target Agreement**

The Customer mandates a zero-defect approach, requiring the Supplier to agree in writing to a quality improvement program, contract regulations and other liability for any defects beyond specified limits. In the absence of a written agreement, the Supplier shall annually reduce error rates by half.

The Supplier undertakes to take the CVS10 into account as part of its quality management system and to meet the requirements of IATF 16949 and CVS92 as far as project-specific applicable, and to

ensure the corresponding requirements for the external resources (services and value creations) commissioned by it. The first step for the verification of this are internal self-assessments, that demonstrate the implementation and fulfilment of the requirements of the Formel Q papers and CVS92, including remote sites used (remote functions) and external resources (services and added value) commissioned by the Supplier.

As part of the offer assessment, recognized valid certifications according to IATF 16949 or declarations of conformity from recognized certification bodies to be provided to the Customer for the Supplier evaluation (see chapter 2 following) along with corresponding self-evaluations according to Formel Q Capability or where applicable according to CVS92, at the request of the Customer. Certifications apply to all manufacturing sites supplying directly or indirectly to any TRATON-involved brand. It also applies for manufacturing Supplier (tier – n) if it is possible to be certified with IATF 16949 by accredited third-party certification body.

The Supplier is responsible for the quality of the products and the documentation supplied to the Customer. The Supplier will manage and coordinate the Suppliers (tier2-n) in the production and supply chain. The Supplier ensures, using relevant contractual regulations, that documentation valid for the relationship between the Customer and the Supplier is likewise observed in dealings with Suppliers (tier2-n) in the production and supply chain.

Should the Customer require the Supplier of a product in the production and supply chain to use specific suppliers, directed part suppliers, the two parties shall conclude a quality assurance agreement with each other. The Supplier bears full responsibility for the quality of the goods supplied to the Customer in this constellation including PPAP responsibility.

Non-manufacturing Suppliers (tier – n) and those supplying parts for special applications shall have ISO 9001 certification from an accredited third-party body.

Non-automotive Organisations and their Suppliers in the supply chain shall have certificates from the, for the Organisation relevant QMS certification bodies (relevancy to be judged by the Customer).

#### **1.4.1 Responsibility in the supply chain**

The Supplier (e.g. assembly Supplier with assembly operations and responsibility for individual parts/assemblies) is responsible for ensuring that its suppliers (and also directed part suppliers, service providers etc.) comply with the quality requirements. This includes the following points:

- The production process and product sample approval (e.g. PPA / PPAP) is carried out by the assembly/system/module Supplier. Deviations and exceptions shall be contractually agreed in coordination between the Supplier and the Customer (e.g. interface agreement).
- Ensuring and verifying quality capability and performance in the supply chain.
- Defining quality assurance agreements. The Customer's requirements shall be taken into account accordingly.
- Ensuring all component-specific requirements.
- Consideration and assurance of functions, special characteristics of products and production processes, including the application and verification of required preventive methods (e.g. risk analyses, FMEA).
- Ensuring the flow of information between the contractual partners
- Specifications for handling D/TLD parts and other legal or official requirements (e.g. CCC, CoP) and the necessary documentation (e.g. MDS or CDX).
- Ensure conformance to specification and traceability.
- Ensuring change management in the supply chain.
- Ensuring cybersecurity management in the supply chain.

- The contractor shall provide the client with information about all software elements used in the delivered software (FOSS, 3rd party, in-house development).
- If, according to the Customer's risk assessment, hedging measures on the scope of delivery are required that lie outside the added value of the Supplier or its direct suppliers, the Supplier shall transfer the requirement to subsequent delivery stages and support appropriate discussions between all partners involved.
- Ensuring qualitative and quantitative component supply throughout the product life cycle.

#### **1.4.2 Transparency in the supply chain**

PPA/PPAP documents (PPA/PPAP report, process approvals), QM plans, production steering plans, test plans and work instructions as well as results and assessments from Suppliers (tier2-n) shall be handed over to the Customer in case of legitimate interest and on request or made available by the Supplier for inspection.

Appropriate Customer forms shall be used to demonstrate the supply chain upon request.

#### **1.4.3 Access to business and plant premises of Suppliers (tier2-n)**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **1.4.4 Special process requirements**

Requirements on special processes and products are valid for Scania designed parts. The requirements apply also for MAN and Navistar designed parts in case of common sourcing projects.

Scania has defined a number of processes especially important for the quality of the end product. With reference to section 1.2 "Request documents" and Scania's "Customer approved sources form", Suppliers and Suppliers of certain products or processes, is subject to a special approval process.

**Scania:** The processes and requirements for special processes are defined in Scania standard STD4584.

**Navistar:** In addition, as identified by the Automotive Industry Action Group (AIAG), Suppliers are required to conform with relevant AIAG Special Process documents: CQI- handbook applies.

**VWTB:** The Application Review (AP) according to FQC (Formel Q-Capability) item 10 is not mandatory for suppliers of painted parts.

### **1.5 External service providers**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

## 2 Quality criteria for award of contract

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

### 2.1 Elements of assessment criteria

- Quality capability: Refers to the assessment of process suitability according to Formel Q Capability and CVS92.
- Quality performance: Refers to the performance assessment of the Supplier in the project and series production phases, based on criteria such as delivery quality, production process and product approval, adherence to schedule, and field and 0km complaints. The Supplier's performance is also assessed for the provision of spare parts (After Sales). The results are included in the Supplier's overall assessment. Failure to meet quality requirements in the project, series production and After Sales can also result in escalation into the Critical Supplier programmed and could lead to a "C" rating.
- Quality Technical Review: Refers to the project-specific review of technical plausibility of the offer prior to contract award. The assessment by the Customer, if necessary, takes place in a discussion between the Supplier and the Customer (e.g. Formel Q – New Parts Integral). If no Technical Review meeting (e.g. QTR) documents are transmitted after a request, this also leads to a C classification and thus to exclusion from the award.

### 2.2 Safeguarding measures in conjunction with award of contract

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

### 2.3 Concept Responsibility Agreement

The Concept Responsibility Agreement (KVV) is agreed between the Customer and its Suppliers as part of the award process and is a prerequisite for nomination if requested by the Customer. It serves the early, binding delimitation of responsibilities for the development of products and services (e.g. software) between the Customer and the Supplier.

As part of the request, the Supplier is given a component-related concept responsibility quota of the Customer.

The agreed concept responsibility quota applies in case the Supplier delivers defective goods if and to the extent that the analysis of the defective products and services reveals a concept or development-related defect.

The concept responsibility quota agreement does not apply if responsibility cannot be determined on the basis of the analysis of the defective products and services. In this case "No trouble found", the costs will be split equally between the Supplier and the Customer until the cause is found conclusively.

Further information can be found on the ONE.KBP in the "Information\Divisions\Quality Assurance\Basic Requirements\Regulations (QA)" directory and in the KVV framework contract.

**Navistar:** Supplier responsibility for products returned from the field without a detectable defect, "No Trouble Found", is defined in Navistar Supplier Warranty Requirements (Document IW-001-SWR).

## 3 Cooperation with Suppliers during the product development process

Depending which TRATON brand places the procurement order, following part approval routines are accepted:

- VDA publications "Quality Management in the Automotive Industry".
- IATF Automotive Core Tools are applicable.

### 3.1 New parts integral qualification program

**MAN:** The qualification program for new parts integral (QPN Integral) comprises the procedure for assuring the maturity level for new parts (as per VDA RGA), the QTR, the PPF process (VDA volume 2) and the certificate of series capability (SFN, previous multi-staged 2-day production). QPN Integral is based on the milestones of the Volkswagen Group Product Development Process (PEP) and is used by the Customer. MAN product development process milestones are similar to VW PEP but contain commercial vehicles-specific details.

The Maturity Level Assurance of delivery scopes as a project management method is based on a maturity level milestone philosophy. The Customer's Quality Assurance department plans a schedule for these maturity levels and agrees this schedule with the Supplier after contract award. This means that Suppliers (and also Suppliers (tier2-n) in some circumstances) of critical delivery scopes and the Customer are integrated in the product development process at an early stage (see Formel Q New Parts Integral and VDA RGA).

All Suppliers are obliged to implement the Maturity Level Assurance process and associated modules.

**Scania:** APQP (Advanced Product Quality Planning) shall be used by the Suppliers for the introduction of new parts or components, as well as part modifications and process changes. The plan shall be according to the principles defined in the APQP Manual.

**Navistar:** APQP Manual (Navistar Suppliers to use APQP Workbook ISQ-005-FO) shall be used by the Suppliers for the introduction of new parts or components, as well as part modifications and process changes. The plan shall be according to the principles defined in the APQP Manual.

**VWTTB:** VDA 2 guidelines should be used with follow-up of the 2 days of production by the VWTTB Readiness team.

### 3.2 Quality planning

The Supplier shall ensure that agreed milestones and results are reached on time. The Supplier shall complete and keep the quality framework schedule up to date in such a way that all product and Q-relevant key deadlines as well as the project deadlines specified by the Customer are covered.

The Supplier is responsible for the implementation and presentation of suitable analyses, feasibility studies, construction and process FMEA and quality assurance and measurement concepts derived from this (e.g. statistical tolerance chain analysis incl. influences of add-on parts and assembly variance), process flow charts as well as equipment and maintenance planning.

In any case, the Supplier shall ensure that the latest technology and quality standards are applied.

The Supplier shall create inspection plans and shall coordinate them with the Customer on request. The inspection plans shall take account of all previously defined inspection characteristics (e.g. D/TLD and STD3944 (with regard to test equipment, also see 3.2.2)).

The Supplier shall independently develop a CoP test plan for the CoP-relevant scopes (Conformity of Production legislation valid worldwide) and make these available to the Customer on request. The Supplier will coordinate the components, bodies and body parts necessary to perform the CoP inspections as well as their procurement with the Customer prior to the conclusion of the contract.

The Supplier shall coordinate with the Customer the characteristics for which a 100% end-of-line inspection is necessary based on PFMEA.

The function of the supplied part shall be 100% assured regardless of the employee by suitable testing equipment. Any deviations shall be agreed with the Customer in writing.

For products for which an expiry date shall be taken into account, the latest usability shall be specified together with the Customer before the contract is awarded.

At the request of the Customer, the Supplier will demonstrate the manufacturability of all nominated components in detail. The Supplier will ensure the personal participation of authorized and qualified representatives of its company, Suppliers (tier2-n) and service providers.

The components are to be 100% measured with regard to relevant characteristics until process capability has been proven. The test characteristics shall be coordinated with the Customer as part of quality planning. The measured values shall be recorded and evaluated statistically. Individual verifications can be requested by the Customer if necessary.

During quality planning, the damaged parts analysis process for field-damaged parts shall also be taken into account and all necessary prerequisites for this shall be implemented before SOP. Trigger criteria for the NTF process (no trouble found) shall be agreed with the Customer. Furthermore, all requirements and tests required for product safety shall be included in the quality planning.

If the safety function of safety-relevant scopes (e.g. airbag module, seats) is yet to be implemented (e.g. with sample deliveries), this property shall be clearly and permanently marked. The labels (also electronic labels) shall be recognizable or readable in an installed condition and shall be coordinated beforehand with the Customer.

### **3.3 Production process and product release (PPA/PPAP)**

The PPA/PPAP process is valid until the end of service (EOS) and is generally conducted on the basis of VDA volume 2 or AIAG PPAP manual latest edition or another acceptance procedure agreed with the Customer. The Supplier is obliged to provide the documentation in the defined IT tool for all delivery volumes. Further detailed requirements of the Customer regarding the PPA procedure can be found in Formel Q New Parts Integral.

At the request of the Customer, semi-finished products/individual parts of the product or the respective scope of supply shall also be provided for production process and product approval (this applies for the entire product life).

The respective valid version of a reference sample (sample for PPA/PPAP) and the inspection reports shall be kept by the Supplier in accordance with the legal and regulatory requirements, but at least for a period of five (5) years after termination of the contract (even in After Sales) if no further agreements have been made with the Customer.

When no other component specific agreements are available, for software-based systems, the Supplier shall be able to implement all error corrections in the software that the Customer deems necessary up to 15 years after the end of production (EOP - component). The Supplier shall ensure that the delivered software is kept available and that all necessary conditions for processing and delivery of the software are met in compliance with the requirements of CVS92, applies.

The following Customer-specific regulations apply to the handling of directed parts for PPA/PPAP certification:

- The Supplier is responsible for implementing the PPA/PPAP process of directed parts in higher-level assemblies. In addition, all results for self-procured components and directed parts shall be presented to the Customer.
- Details shall be defined in the PPA/PPAP coordination discussions between the Customer and Supplier. This applies especially where sample testing of variant rich assemblies is necessary, for assemblies with diverse equipment options (such as seats and door trim panels).
- If there are several receiving plants, agreements shall be made with the first plant to use the parts, generally this is also the type leader plant, or project specific.
- Assemblies such as the front end module, cockpit, axles, seats, fuel tank, roof modules, complex welded assemblies, etc. may also contain directed parts that, for technical reasons, are delivered as individual parts directly to the Customer in any Customer brand within TRATON group for PPA/PPAP release. In such cases, the Customer and the

Supplier will define the scope of services and responsibility of the Supplier in an interface agreement when the contract is concluded.

**Scania/Navistar**: Formel Q New Parts Integral is not applicable.

**VWTB**: The Supplier is obliged to provide the documentation in BeOn for all delivery volumes.

### 3.3.1 Components requiring certification

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

### 3.3.2 Part approval

All samples requested, and needed for the PPA/PPAP approval process, shall be delivered free of charge.

The Supplier shall provide all samples, including the required proof and documents, which are needed for any approval free-of-charge and deliver them carriage free. This can also include C-samples for grain, C-samples for mock up (Meisterbock)/Matching/AAR/Cubing. The precise scope of the documents, as well as the type and number of sample parts can be found in the initial sample order or in the "sampling documentation" checklist.

Appearance Approval shall be attained, where required, according to the brand-specific standards. Parts (new and carry-over) submitted for evaluation (in repeated loops when needed) and to be used as Master Sample (kept on Suppliers site), are a part of the part approval work.

MDS is a crucial aspect of the approval process. With reference to section 1.1.4.1 "Reporting of part material composition" the Supplier is expected to submit the MDS in due time.

**MAN/Scania/Navistar**: PPAP documentation, Part Submission Warrant (PSW) and supporting data as referred to from the order and/or requested in ePPAP, shall be submitted in the ePPAP module of the eQ2 application, reachable from Customers portal.

**VWTB**: BeOn system is used by VWTB

### 3.3.3 MAN

In the case of non-metallic materials, proof of inspection results shall be deemed sufficient on the basis of the material identification characteristics agreed within the scope of the material approval as per MAN 239-1 and the acceptance limits in accordance with the material identification sheet.

Generally, for parts that are surface treated, an untreated part shall be supplied for initial sampling.

#### 3.3.3.1 Elements of sampling process

Definition of the submission stage and the associated documents is performed based on VDA Volume 2 and as per MAN-specific criteria. The Supplier is provided with a copy of the sampling documents checklist at the sampling planning stage or, at the very latest, when an order is placed by the ePPAP case published by MAN.

The proof required for catalogue parts, which are elements of the product, shall be agreed with MAN.

The technical approvals defined by MAN in MAN 239-1 and 239-3 are analogous to Volkswagen AG's prototype permit obligation ("Baumustergenehmigungspflicht"). Where appropriate, it may be necessary to obtain the following approval and append the documentation:

- material approval for non-metallic materials (TUC approval, MAN Nuremberg)
- surface treatment (TUC approval, MAN Nuremberg)
- development approval of the C sample priority parts/RGA-A parts
- MAN design (design approval)

- approval of highly stressed engine components as per M 3458
- model approval by the relevant authority
- if necessary, deviation approval

### **3.3.3.2 Results of the sampling process**

If the Supplier is not able to meet individual deadlines, quality targets or other requirements specified in sampling plan, this information shall be passed on to MAN in written form as soon as possible, i.e. definitely before delivery of the sample parts.

In the event of unavoidable deviations, the Supplier shall first obtain a special release in writing from MAN. The completed special release, signed off by MAN, shall be added to the PPA documentation.

Additional effort on MAN side for incomplete or rejected PPAs without prior consent will be charged.

### **3.3.4 Scania/Navistar**

PPAP submission level 4 shall be used for the part approval prior to Supplier's production and deliveries commence to Scania according to the AIAG PPAP manual 4th edition.

#### **3.3.4.1 Significant Production Run**

A Significant Production Run (SPR) shall be carried out according to the PPAP manual 4th edition.

The SPR report shall be available on request by the designated SQM.

The size of the significant production run shall be 1 to 8 hours continuous production of minimum 300 pieces, unless otherwise agreed upon with the designated SQM. Scania/Navistar shall be informed with a 2 weeks prior notice of the production run date to allow attendance.

#### **3.3.4.2 Master sample**

See PPAP manual 4th edition, section 2.2.15 "Master Sample".

The Supplier shall retain master samples, originating from the significant production run related to the PPAP of all delivered products, unless otherwise agreed in writing with the designated SQM.

### **3.3.5 Part release**

When the submitted documentation and (possible) samples are reviewed and checked, the Customer will take a decision if the part is qualified to be released.

Deliveries to Production Units and/or Spare Parts warehouses without a Customer approved part release in writing are not allowed.

## **3.4 Software**

See CVS92. Other additional brand specific requirements may apply

## **4 Quality measures during series production**

See Formel Q. No additional Q requirements in regard to Formel Q.

### **4.1 Ongoing assurance of process capability**

See Formel Q. No additional Q requirements in regard to Formel Q.



#### 4.1.1 Tool management

The Supplier is obliged to provide documentation of a tool management system as well as scheduled and preventive service / maintenance for machinery and tools. Tool maintenance and modifications will be documented. Any loss of tools or damage shall be reported to the Customer immediately (see VDA volume 6.3).

**MAN:** Standard MAN 239 and M 3666 applies.

**Navistar:** Follow the Navistar Supplier Tooling Guidelines document at [www.navistarsupplier.com](http://www.navistarsupplier.com).

#### 4.2 Product safety and product liability

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### 4.3 Products requiring documentation and special verification

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

##### 4.3.1 D/TLD verification

These requirements includes technical documentation marked with:

**MAN:** D parts according to M 3010-2.

**Scania:** <C> Critical, according to STD3944 "Classification of Requirements - COR" and <L> Regulated characteristics according to STD4178 "Regulated characteristics".

**VWTB:** "D", "TLD" or "A"

**Navistar:** "Special and Critical characteristics should be managed as per MPAPS (Material, Parts, and Process Specifications) and STD mentioned on Engineering documents"

The Supplier should, in close cooperation with the Customers representative, establish additional Special Characteristics based on FMEA, which are sensitive to the Supplier's process (and product when design responsible) and can affect safety, environment, fit, form, function or appearance. See IATF16949 Annex A.2 Control Plan – Product control or VDA 6.3.

In addition to the general requirements of the QM system, product-specific quality verification for products requiring documentation is to be conducted by the Supplier and archived for at least 15 years after the end of production. Drawings, tables, manufacturing approvals, technical terms of delivery, inspection specifications, sample reports and other quality records may be required as evidence. This also includes evidence of planning activities, selection and qualification of personnel, suitability of test equipment, and process capability analyses and correspondence.

Suppliers are required to use the system for every product to be supplied requiring documentation

The systematic and consistent procedure for verification is checked and evaluated on a spotcheck basis by the Supplier with a D/TLD self-audit according with chapter 4.3.1.2 and by the Customer as part of process audits, technical audits or other supplier visits.

On request, the proofs shall be made available to the Customer.

##### 4.3.1.1 Labelling of technical documentation

The Customer has different labelling variants of equal importance. If the Supplier uses labelling other than that listed above for its documents and records, the Supplier shall provide a key that shows the correlation to the labelling listed above (e.g. an overview matrix with the labels for all Customers and internal labelling) as managed specifications.

#### **4.3.1.2 Self-audit – products requiring documentation (D/TLD self-audit)**

To check the implementation of the requirements for products requiring documentation, the Supplier shall perform and document a site-specific D/TLD self-audit independently every 12 months (with a validity period of 12 months) in accordance with the current requirements catalogue for components requiring documentation (form – TLD Quality Audit; see ONE.KBP. The Supplier is obliged to use this procedure in the same way for its supply chain, purchased parts and outsourced process steps. The date of the last passed D/TLD self-audit shall be documented. The obligation to the D/TLD self-audit begins with the first PPA/PPAP procedure of the commissioned product.

If defects are detected during the audit, it is expected that the Supplier will immediately implement the necessary improvement measures independently.

The Supplier will check the implementation of the improvement measures and their effectiveness in a new D/TLD self-audit carried out independently. Corresponding documentation of this shall be maintained.

The results of D/TLD self-audits shall be archived for at least 15 years and kept available for verification by the Customer at all times. Evidence of the Supplier's activities to ensure compliance with the quality requirements shall be guaranteed at all times. All specifications as per VDA volumes 1 and 6, part 1 and IATF 16949 and Customer-specific requirements shall be taken into account during the verification process.

On request, the results of the D/TLD self-audits shall be made available to the Customer.

#### **4.3.1.3 Product group specification / product selection**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **4.3.1.4 Assessment of individual questions / audit results**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **4.3.1.5 Audit report / action plan**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **4.3.2 Verification – chemical products**

In order to be able to use chemical products in vehicle construction, vehicle operation or After Sales, the Supplier shall ensure that all binding obligations, in particular national and international laws and official requirements, as well as the requirements of the Customer are met. The Chemical Compliance Assessment is to be carried out on a Supplier basis, not individually for each chemical product or substance.

**MAN:** Carrying out a CCA is only relevant for those suppliers who deliver chemical products/ substances in a form that changes their physical state, e.g. when their aggregate state are liquid, gaseous or particulate and whose form can be changed during customers use. The CCA is only to be sent on customers request.

**Navistar:** Section 4.3.2 is not applicable;

#### **4.4 Identification and management of problems**

As part of the Supplier's responsibility to maintain quality, the Supplier shall advise, or take action, to prevent the quality of the deliveries being impaired during transport or by corrosion.

When parts are sensitive to aging (e.g. corrosion), an extra check is demanded before delivery to the Customer.

The product quality after production shut downs (e.g. holiday breaks, vacation periods, etc.) should be secured with extra quality checks when starting production again at Suppliers.

**Navistar:** The routine “Shutdown Startup Process Questionnaire, ISQ-018-FO” shall be filled and documented.

#### **4.4.1 Complaints management**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q

##### **4.4.1.1 0km complaints**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q

##### **4.4.1.1.1 Further details for the handling of product quality deviations from Suppliers**

**MAN:** eQ2 system is used for communication and processing of 0km complains. Immediately after receipt of the delivery, insofar as this is feasible in the orderly course of the business, MAN shall check whether the goods correspond to the quantity and type ordered, and whether there are any externally visible signs of transport damage or other identifiable defects. If MAN finds any damage or defects during the aforementioned checks, it shall notify the Organisation of this immediately. If a defect is discovered later, MAN shall also report this immediately.

**Scania:** See Scania standard STD4457 “Handling of Product Quality Deviations from Suppliers

**VWTB:** The VWTB complaints shall be followed by KPM–Halle system.

**Navistar:** At Navistar, the Global 8D (G8D) reporting process is the standard way to resolve problems. Suppliers might get either D0 8Ds or Full 8Ds, and both require prompt, well-documented actions.

##### **4.4.1.2 Reworking and sorting activities**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

##### **4.4.1.3 Field complaints**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q

##### **4.4.1.3.1 Analysis of defective parts**

The analysis of defect parts is essential for the allocation of the responsibility and the associated share of costs of the Supplier. The Customer will determine together with the Supplier the procedure for defective part analysis, like the number of parts to be analyzed, the creation of samples, the focus on reference markets or which party performs the examination. If the Supplier does the analysis on its own, it shall perform the examination according to accepted standards.

##### **4.4.1.3.2 Return of defective field parts**

The return of defective parts is possible if the defective parts are still available at the dealer or at the end customer.

##### **4.4.1.3.3 Disposal of defective field parts**

**MAN:** Following approval by MAN – at the earliest after 90 days – any defective parts held by the Supplier are to be disposed of properly in accordance with the country-specific regulations (in Germany according to the Recycling Management and Waste Law) by the Supplier itself or by specialist waste disposal companies commissioned by the Supplier. At the request of MAN, evidence of any disposal carried out shall be provided at any time. If the Supplier has recognized parts as defective, these shall become the Supplier’s property. Approval from MAN is not required

for disposal of these parts. Following the legal duty of field data observation, the Supplier shall bear the costs incurred in connection with the defective part analysis itself.

**Navistar:** Supplier will retain defective field parts for a period of thirty (30) days beginning on the date the Supplier analysis has been completed or until the claim has been resolved by Navistar.

#### **4.4.1.4 Analysis parts with export or transport restrictions**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **4.4.1.5 Exemption from requirement**

In exceptional cases, i.e. to maintain, or start, the production, a request can be submitted for a special release of parts not fulfilling all requirements. The request form can be found at brand-specific Supplier portals (e.g for MAN [www.vwgroupsupply.com](http://www.vwgroupsupply.com)). Customer reserves the right to charge the Supplier with a fee for handling the request to allow deliveries of parts not fulfilling all requirements if the Supplier has caused the deviation request. Shipments to the Customer are only allowed with an approved allowance in writing and when material boxes are properly marked according to the instructions published on the brands Supplier Portals.

In cases such as these, the Supplier shall plan and execute remedial measures. The assembly of parts/components by Customers that do not fulfil all requirements should be limited to the coverage of the period until parts are available that do fulfil all requirements.

Reworked parts shall fulfil all specifications and requirements.

#### **4.4.2 Early warning system**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q

#### **4.4.3 Obligation to conduct own field observation**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q

#### **4.5 Continuous improvement process (KVP)**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **4.6 Change management**

Changes to the production site, production process, product including software versions or the supply chain can lead to the loss of market approval of the vehicles and/or products and shall therefore be communicated in good time so that the common goal of a status-appropriate development/quality release (location release, production process and product release) can be achieved.

The Supplier will notify the Customer in advance of all changes in its process chain (site, product, process, supply chain) and obtain written consent from the Customer before such changes are implemented. Changes to D-U-N-S®, e.g. due to a change of company name, changes to the ownership of the production site (mergers, sales etc.), expansions of delivery quantities and changes in the target plants shall also be reported to the Customer in advance and delivery capability shall be ensured.

Further approval and information obligations in the event of changes are regulated by the trigger matrix of VDA Volume 2 / AIAG PPAP manual 4th edition section 3 "Production Process and Product Release".

In the event of any relocation (including within a given production site), a project plan and continuity concept shall be drawn up in consultation with the Customer before implementation.

Material changes to products, operating supplies and process material as well as the expiry or loss of approvals shall be actively communicated to the Customer by the Supplier immediately in writing and require the transmission of an updated material data sheet via IMDS or CDX.

A new PPA/PPAP procedure shall be carried out by the Supplier in consultation with the Customer. Approval by the Customer is required before delivery from the new production site can take place.

Failure to observe these regulations will result in a "C" rating (new business on hold).

**Scania:** All intended changes by Suppliers to a product and/or process shall be submitted to Scania according to the Scania Supplier Change Request procedure (SCR in eQ2).

**Navistar:** For all intended Product or/and Process changes by Supplier, the Supplier Request for Engineering Approval (SREA) form should be submitted to the applicable Navistar Supplier Quality Representative for review and approval.

#### **4.7 Layout Inspection / Requalification**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **4.8 Lessons Learned**

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### **4.9 Handling of warranty claims and special situations**

The contractual Customer-specific regulations of the companies for the further loading of Supplier-caused additional expenses (e.g. in the case of field, 0km and CKD complaints) apply. The Supplier's responsibility for field failures during the warranty period will be determined using a spot-check procedure in accordance with the VDA publication "Field Failure Analysis" based on Technical Factors (TF) or the Claims Acceptance Rate (AQ).

The Supplier's responsibility for field failures during the warranty period may be determined by other means if the defect is corrected without parts replacement (e.g. software).

The technical and commercial handling of defective goods supplies will generally take place independently via the Customers that use the product regardless of which Customer placed the order.

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.

Suppliers will 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 Supplier shall bear.

Starting from an NTF percentage of 30%, the Supplier is obliged to initiate an NTF (no trouble found) process in accordance with the VDA volume "Field Failure Analysis". The number of underlying damaged parts per year shall be agreed on a Customer-specific basis.

**Scania:** If the Supplier and the Customer have entered into a "General Supply Contract" including the "SCANIA Terms of Purchase for Production Material (Automotive Parts)" (hereinafter collectively referred to as "GSC"), the provision(s) in the GSC governing warranty claims and special situations shall, in case of conflict, take precedence over the provision(s) in section 4.9 of CVS10. For avoidance of doubt, if the Supplier and the Customer have not entered into a GSC including the "SCANIA Terms of Purchase for Production Material (Automotive Parts)", the provision(s) stated in CVS10 concerning warranty claims and special situations in section 4.9 of CVS10 shall apply.

**Navistar:** For Navistar the Warranty requirements for the Product outlined in Navistar Supplier Warranty Requirements (Document IW-001-SWR), applies.

#### 4.9.1 General remark

The terms and conditions laid down below govern the processing and settlement of defect rectification costs. The aim is to simplify the processing of claims relating to liability for defects and to thus lower the analysis and logistics costs incurred. Claims resulting from product liability law, tort, actions performed without due authority and/or indemnification between joint and several debtors shall remain unaffected.

The contribution of the Supplier regarding the share to bear for the recovery costs will be determined from case to case by a team of experts on the basis of the principles laid down in section 4.9 "Handling of warranty claims and special situations".

**Okm Complaints:** Okm Complaints are carried out by the issuing production unit(s) and after sales warehouse(s).

#### **Field claims:**

**MAN:** The recourse team is responsible for setting up and presenting field claims to the Supplier.

**Scania:** The Supplier Recovery Coordinator at Purchasing Supplier Quality is responsible to coordinate the work and presents the claim letter to the Supplier in regard to field claims.

**Navistar:** The Navistar Supplier Warranty Group will be the Supplier contact for accessing field claims and associated failed parts.

#### 4.9.2 Liability of the Supplier

The Supplier shall warrant that the parts it delivers are free of defects at the transfer of risk.

The Supplier is thus e.g. liable for defects that are due to shortcomings in the design, materials, workmanship, manufacture of goods supplied, and for defects in them caused by deviations from agreed specifications, or any combination of these. The Supplier's liability for defects in goods supplied shall not include defects that are due to materials, design information or technical specifications received from the Customer, or to incorrect assembly or disassembly or faulty installation, storage, handling, use or repair by the Customer or the end Customer.

#### 4.9.3 Warranty period

The warranty period is 24 months and ends 36 months after the delivery was made. The respective warranty period shall begin

- upon first registration of the vehicles in the case of parts for initial equipment,
- upon installation in a vehicle/unit in the case of spare parts,
- upon commissioning in the case of installation in engines that are not used for road vehicles (ships, power units etc.).

#### 4.9.4 Calculation of the Supplier's share of costs

Based on the results of the examination, the Supplier's share of costs is calculated.

#### Field parts:

For reasons of effectiveness and reduction of costs, the Supplier and the Customer may also use the results of the defective parts analysis to jointly determine the factor with which further similar defects shall be invoiced.

#### **4.9.5 Costs to be reimbursed**

The Customer will strive to keep costs due to defective parts delivered by the Supplier as low as possible. The Supplier might make own suggestions about how to handle the rectification of defective parts in order to keep the costs and customer impact as low as possible.

In addition to statutory claims, the Supplier shall reimburse the Customer as follows.

##### **Okm Complaints:**

The Supplier shall compensate the Customer for all and any costs, losses or damage incurred or suffered by the Customer, e.g.:

- the purchase price,
- costs for repair and/or replacement of the defective goods (e.g. removal and installations costs),
- identification costs (costs of locating the affected parts, e.g. in warehouses or service),
- processing costs (costs incurred in addition to identification costs until detection of the defect, e.g. machining),
- landing costs of the replacement goods,
- administration costs,
- logistics and handling costs

Further costs that might occur shall be announced to the Supplier and be agreed jointly.

##### **Field claims:**

The following costs are in general to be reimbursed:

- the purchase price (material A-price),
- additional costs 100% of the purchase price (material A-Price). By the additional costs all logistics and handling costs are covered,
- removal and installation costs: Average value of the time (composed of all defect parts cases within the relevant settlement period) x actual hourly wage rate of the executing Supplier. The hourly wage rates will be reviewed and adjusted as appropriate to the beginning of each calendar year.

Further costs that might occur shall be announced to the Supplier and be agreed jointly.

##### **Okm Complaints and field claims:**

In addition the Supplier shall reimburse the Customer for any additional damage that the Customer might claim compensation for, e.g. consequential losses for which it or its sub- contractors is/are responsible.

The costs for the return of defective parts shall in general be borne by the Supplier by taking into account its legal duty of field data observation.

In general the costs for analysis of defective parts shall be borne by each party itself.

If the repair of the defect part requires no replacement of the part (e.g. adjustment work), the expenses incurred for the rectification of the defect and for the purposes of the subsequent service shall be borne by the Supplier. In case of a defect within a piece of software delivered by or via the Supplier, the costs shall be handled in the same way as for a defect without parts replacement.

#### 4.9.6 Billing of costs due to defective parts

##### **0km complaints:**

The Customer will claim the costs due to defective parts from case to case. The Customer shall provide the Supplier with the relevant data to comprehend the costs, which arise from the defective parts, and the cost calculation.

**VWTB:** The costs resulting from quality failure at 0km are computed and entered into the KPM System through the Inspection Reports. Debits are charged by the Supplier Debit System.

##### **Field claims:**

The Customer will claim the defect rectification costs regularly. The Customer and the Supplier can arrange the frequency on a case by case basis if needed. The Customer shall provide the Supplier with the relevant data to comprehend the costs, which arise from the defective parts, and the cost calculation.

#### 4.9.7 Serial complaints and recall actions on road safety reasons

Serial complaints and/or recall actions on road safety grounds bear the risk of high costs. As soon as the Customer believes there to be a serial complaint that is the result of a defect on parts delivered by the Supplier, the Customer shall inform the Supplier of this as quickly and as detailed as possible. The costs shall be agreed with the Supplier on a case- by-case basis and a mutual agreement shall be concluded.

**MAN:** A serial defect exists if MAN and the Supplier, on the basis of the defect symptoms and the cause of a defect that has occurred, jointly determine that this defect can occur in all supplied parts or in a certain proportion of the supplied series (e.g. batch or production lot).

Notwithstanding this, a serial defect shall exist if the same defect is found during the useful life of the vehicle/unit within the warranted mileage or service life (normally in the component specification) in at least

- 10% of secondary parts,
- 5% of functional parts,
- 3% safety and engine parts,

of all supplied parts or a certain part of series production (e.g. batch or production lot). The definition of secondary, functional and safety parts can be found in MAN 239. If restriction to a batch or production lot is not possible, the defect rate shall be calculated on the basis of all similar defects as regards defect symptoms and/or cause that are determined within a maximum period of 24 months before detection of the similar defects. The basis for calculation shall be the quantity of all parts delivered in 24 months before the last incoming goods delivery (total of similar defects/delivery quantity in 24 months before last incoming goods delivery x 100%).

Contrary to the warranty period stated in 4.9.3, the warranty period for serial defects is 48 months and ends 60 months after the delivery was made.

#### 4.10 Technical Supplier Reviews

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.

#### 4.11 Critical Supplier program

See Formel Q Konkret. No additional Q requirements in regard to Formel Q.



## 5 Terms and Abbreviations

AAR	Appearance Approval Report
APQP	Advanced Product Quality Planning”
BeON	Beshallerung OnLine
Common sourcing	Sourcing for more than one brand EFR Exemption From Requirement
eQ2	Web-based B2B tool consisting of various functional modules like ePPAP, eQuality, eInvoice
CCC	
CVS	Commercial Vehicle Standard
eSCR/SCR	(electronic) Supplier Change Request
ESD	Prevent Damage to Electronic Systems by Electrostatic Discharge
MDS	Material Data System
IMDS	International Material Data System
KPM-Halle	Konzern Problem Management for Parts M xxx/MAN xxxx Company standard of MAN
MAN	MAN Truck and Bus SE (whole group including for example MAN South Africa)
MAN T&B KSW	MAN Truck & Bus SE Customer special request MDS Material Data Sheet
MLA	Maturity Level Assurance
ONE.KPB	Volkswagen Konzern Business Platform
PEP	Product creation process
PPA	Production process and product approval
PPAP	Production Part Approval Process
PQA	Proof Of Quality Assurance
PSW	Part Submission Warrant
PTD	MAN Portal for Technical Documentation QPN Integral/QPNI Formel Q New Parts Integral
RFQ	Request for quotation
RGA (MLA)	Reifegradabsicherung (Maturity assurance process)
Scania	Scania CV AB (Whole Scania group including for example Scania Latin America)
SOP	Start of Production
SOCOP	Start of Customer Production
SQA	Supplier Quality Assurance (MAN)
SQM	Supplier Quality Manager (Scania)
SSP	Scania Supplier Portal
STDxxx	Company Standard xxx of Scania
TRATON	TRATON SE

TUC	Code for identity sheet of the Nuremberg material technology, division chemistry
TRM	Technical Review Meeting
VDA	Verband der Automobilindustrie (Association of the Automotive Industry)
VWTB	Volkswagen Truck and Bus Ltda.
0km	Defined as Product defects that occur before the vehicle has left the Customer manufacturing facility. In the case of service parts 0km Complaints is defined as Product defects that occur prior to installation into the vehicle. 0km Complaints are carried out by the issuing production unit(s) and after sales warehouse(s).
Field Claims	Defined as Product defects that occur after the vehicle has left the Customer manufacturing facility. In the case of service parts Field Claims is defined as Product defects that occur after installation into the vehicle.
G8D	G8D or 8D is a disciplined problem-solving method. The method establishes a permanent corrective action based on scientific analysis of the problem and on the origin of the problem by determining the root causes.
D/TLD	VWTB Special Characteristics

## 6 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Document designation	Title
IW-001-SWR	Navistar Supplier Warranty Requirements for supplier support of production and service parts when there is a field failure.
APQP Manual 2nd edition	Advanced Product Quality Planning Manual
AIAG Automotive Core Tools	PPAP, APQP, FMEA (AIAG/VDA), MSA, SPC
IATF16949	Quality Management Systems requirements for automotive production and relevant service parts Suppliers
CVS55	Restricted and Prohibited Substances in Products
CVS92 ( <i>under development</i> )	TRATON Software Quality Requirements for Embedded Software in Components, Systems and Vehicles ( <i>see note in chapter 0</i> )
ISQ-018-FO	Shutdown Startup Process Questionnaire,
ISO 9001	Quality Management System
M 3010 (all parts)	Process for compliance with regulations and safety provisions for MAN products
M 3212	Requirements for material data sheets in the International Material Data System (IMDS)
M 3335	Provision of company standards for external users, Process instruction
M 3399	Logistics Standard
M 3431	Guideline to Prevent Damage to Electronic Systems by Electrostatic Discharge (ESD)
M 3458	Highly stressed engine components with special release process and qualification inspection requirements, Component group-specific qualification requirements inspections
M 3666	Labelling of tools, auxiliary tools, test equipment and gauges, General requirements (nameplate)
MAN 239	General terms of delivery for purchased parts, Applicable standards and guidelines
PPAP 4th Edition	Production Part Approval Process
STD3868	Scania Customer Requirements
STD3944	Classification of requirements - COR
STD4172 (all parts)	Scania Logistical manual
STD4178	Regulated characteristics
STD4319	Accelerated corrosion test - Atmospheric corrosion
STD4352	Reporting of Substances and Material Composition of Product-Related Parts to IMDS

**COMMERCIAL VEHICLE STANDARD**  
MAN Truck & Bus SE / Scania CV AB / Navistar Inc./ Volkswagen Truck & Bus

CVS10:2024-08

<b>Document designation</b>	<b>Title</b>
STD4457	Handling of Product Quality Deviations from Suppliers
STD4584	Requirements for Special Processes
VDA Volume 2	Production process and product approval (PPA)
VDA Volume 4	Quality Assurance in the Process Landscape
VDA Volume 6.3	Process Audit
VW Formel Q series	Quality Management Agreement Between the Companies of the Volkswagen Group and its Suppliers
VDA publication series	“Qualitätsmanagement in der Automobilindustrie” [Quality Management in the Automotive Industry]
VDA publication series	Das gemeinsame Qualitätsmanagement in der Lieferkette” [Joint Quality Management in the Supply Chain]

## Annex A (informative) Change history

Release date	Changes
2024-08	The whole standard has been re-written. Selected parts have been extracted from Formel Q Konkret and adapted to TRATON requirements.
2022-03	The changes in this CVS10 are based on the revision of Formel Q Konkret. Changes in the structure of Formel Q Konkret are adopted which resulted in an over-all revision of the CVS10. Due to many changes, the changes are NOT shaded or marked in another way and suppliers are expected to read the entire CVS.
2020-03	CVS10 is released.