Customer-specific requirements - quality

(CSR - Quality)

between

Dr. Schneider Unternehmensgruppe

- hereinafter **"DR. SCHNEIDER"** –

and the supplier

- hereinafter **“LIEFERANT”** –

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0 Preamble

DR. SCHNEIDER as a supplier of complex products is obliged facing the international automobile manufacturers and the consumers to guarantee the prescribed by law, the contractual and the reasonably expected quality of the products and the performance.

This CSR-quality describes the general regulation of the framework between Dr. Schneider and the supplier, which is necessary for the realization of the common target:

„zero – defect – quality“

1 quality planning regarding contractual products

The supplier will use suitable preventive methods of quality planning to secure the „zero-defect-quality“ regarding the products and the performance and will seek clearance with Dr. Schneider. The planning documents shall be kept always available for DR. SCHNEIDER.

The project schedule of the supplier consists of the following elements of quality planning and the milestones:

- preparation of FMEA-product, so far as the supplier is in charge of the development of products;
- preparation of FMEA-process for pre-series and series production;
- preparation of process flow chart;
- preparation of a production control plan (QM-plan). incl. critical and significant characteristics for dimensions, raw material, function and lifetime for pre-series and series production;
- planning and provision of the tools and the technical devices, etc.;
- planning and provision of the test equipment;
- planning and provision the packaging;
- production of the first sample parts manufactured;
- evidence of the test equipment-, the machinery- and the process ability;
- the construction pattern release of the automobile manufacturer, if the supplier is instructed with the development of products;
- quality assurance at subcontractors;
- release of the production process and the products (initial sampling).

1.1 FMEA (product, process)

The supplier takes risks analysis (FMEA) with a particular focus on his own products at Dr. Schneider and his customers for all delivered products to Dr. Schneider and the related processes. In addition to this the supplier will update the FMEA whenever differences and modifications of the product- and/or the process quality arise. The supplier is obliged to improve effectively the points evaluated as critical by appropriate corrective actions and preventive measures. These measures are important to comply with specifications, characteristics and safety of the products, as well as a capable manufacturing.

1.2 process flow chart

The process flow chart includes the sequence and the place of the performance of every individual process step.

1.3 production control plan (QM - plan)

The production control plan includes a comprehensive documentation of the product - and the process characteristics, the process control measures, the tests and the measuring systems, which are important before and during the series production. Test instructions are contained building on the production control plan and the technical documents, to ensure the requested product quality. The definition of suitable test criteria will be prepared in cooperation with Dr. Schneider. The production control plans have to be checked and updated, if the product or the processes were modified or are no longer stable/ able.

1.4 test equipment planning

Test- and measuring equipment must be selected so that the quality requirements are effectively be monitored during the series production.
Please consider e.g. measurement uncertainty/ test equipment capability, data collection and analyzability as well as the evidence of the measurement device calibration.

1.5 capability verification

The supplier ensures by applying appropriate statistical techniques (e.g. quality control chart) that the applied machines, tools, measuring and test equipment, as well as the processes in which these are introduced are suitable and capable for the production of the Dr. Schneider delivered products.

The SPC characteristics are suggested by the supplier and are agreed with Dr. Schneider, for which qualifying references have to be demonstrated.

The following demands must be met:

- short-term capability (machine capability) $C_{mk} \geq 2{,}0$ (for machine parameters/ characteristics)
- temporary process capability $P_{pk} \geq 1{,}67$ (for product-specific characteristics)
- process capability (long-term) $C_{pk} \geq 1{,}67$(for product-specific characteristics)
- measurement system capability MSA, Gauge R&R/procedure 2, (for test- and measurement equipment)

MSA < 10% ➔ system OK;
10% <= MSA <= 30% ➔ calibrate, determine the cause, take actions;
MSA > 30% ➔ system isn't suitable;

A short-term process capability $C_{mk} \geq 1{,}67$ and a long-term process $C_{pk} \geq 1{,}33$ capability can be accepted in special cases.

Despite everything the supplier is obliged for the „zero-defect-quality".

If the capability requirements for agreed features are temporarily not reached, then the supplier has to perform 100%-inspections at least until the corrective actions reach the ability.

1.6 pre-series samplings (test reports other samples)

The supplier coordinates with Dr. Schneider the near series manufacturing and testing conditions near series for prototype and pre-series parts and records the testing conditions.

Prototype- and pre-series parts are delivered separately designated, with agreed quality verifications and as sample parts, also according to the specification of Dr. Schneider.

2 process and product approval

2.1 production process and product approval PPAP (initial sampling)

The supplier has to proceed the initial sampling by the following guidelines (in each case the latest edition) to make the results traceable:

- VDA Band 2, PPF – alternative process
- AIAG, PPAP (Production Part Approval Process)

Possible triggers for a renewed PPAP - procedure …

… correction of a defect
… technical modifications of the development department, the specification, the color or the materials
… production with new or modified tools or equipment
… transfer of the production or individual process steps
… change of supplier because of parts, materials or services
… change of test methods
… change of production processes
… retraining possibilities
… suspension of production for more than 12 months

The need should be coordinated with the quality planner of Dr. Schneider.

The applicable process for the initial sampling of the contractual products is predetermined with the frame agreement of the supplier.

If nothing else has been agreed upon, the supplier has to submit the following documents for each product-/part no. and color:

- Cover sheet of initial sample inspection report; (Incl. IMDS report no.)
- filled and released document FORM EK 100: „evaluation: reliable process“ (current version for download in FTAPI-portal)
  For products with risk classification A: self-assessment by the supplier incl. a written cross-check by Dr. Schneider (purchasing department, supplier management & supplier quality)
  For products with risk classification B: self-assessment by the supplier
  For products with risk classification C: self-assessment by the supplier, documentation not necessary
- Test results (target values, tolerances, actual values, valuation) according to the demand of the drawing and the specification regarding:
  - Dimensional inspection (for 5 parts per cavity);
  - Material testing;
  - Functional testing (for 5 parts per cavity);
- Material data sheet;
- Evidence of the documentation of the ingredients in the IMDS-database;
- Development release (development responsibility by the supplier);
- Drawing release of the index of the initial samples with assignment to the single measured points of the report
- process capability analysis for all marked CC, SC, SPC and functional dimensions in the drawings;
- the release of the color and the gloss level by Dr. Schneider (if necessary).

- Released packaging data sheet by Dr. Schneider
- Evidence of compliance with statutory requirements (VDA 2 subitem 6 or PPAP Chapter 17)
- deviation authorisation by Dr. Schneider Engineering, if the product deviates from the specification
- ten(10) marked initial samples, for multi-cavity molds not less than three (3) parts per cavity, which comply with the documented index of the initial samples;
  The initial sample amounts for raw materials, granules and coatings are separately agreed with the supplier.

Details can be arranged in the discussion about the initial sample planning ISP. The documentation of the ISP must be enclosed to the PPF report.

The presentation of the documents and samples must be made by the agreed deadline. If the deadline is missed, Dr. Schneider can charge all costs for the necessary measures and damages to the supplier.

The presentation of the documents and samples may only be made if the specifications are satisfied. In the case of significant deviations first of all the supplier has to gather a written deviation of the customer. The deviation including the action plan must be substained for the execution of the deficits in the PPF-documentation.

If a deviation permit will be released and accepted, the process is cost-neutral. If a deviation permit will be released by the supplier after the PPF deadline, Dr. Schneider reserves the right to debit the supplier with the arisen costs. If an intervention of the purchasing department is necessary, the costs are calculated in addition depending on effort.

The supplier allows inspection for Dr. Schneider into the documents of the initial sampling (FMEA, etc.) that haven't to be submitted.

Releases based on "suppliers data sheets" may be agreed on request and on demand of Dr. Schneider For norm- or standard-products.

In the event that the supplier hasn't documented the material data in the IMDS-database, the sampling will keep the status „dismissed" (grade 6).

If necessary, it is possible to contract reference samples (for decorative surfaces of attachment and functional parts for interior and exterior equipment of automobiles) for evaluating the color, gloss, structure, grain size, etc. The samples have to be introduced in the product development phase to the quality planner of Dr. Schneider. In the series phase the parts will be evaluated by the quality department of the plant.

According to certain characteristics and their expressions, which are not quantifiable or measurable, the supplier has to present boundary parts for release by Dr. Schneider. The boundary parts are used for definition of acceptance criteria, which are representative for the process capability of the supplier. The boundary samples have to remove from a manufacturing run during a series operation. For each affected product the supplier has to present not less than 3 boundary parts including a written statement

for the release. After release the supplier will receive a boundary sample and a written statement back. This valuations are attached to the initial sample inspection report. Boundary parts which are involved in the production control plan guided in the inspection equipment monitoring plan.

In the case of non-acceptance of the initial sample inspection report which is caused by the supplier (incorrect data, missing and incorrectly documents, etc.) Dr. Schneider reserved to debit the costs for the processing time to the supplier. This is determined and implemented by the purchasing department of Dr. Schneider.

The release of the initial sampling by Dr. Schneider does not dispense the supplier from the responsibility for the quality of the series products.

2.2 requalification test

Within the scope of an annual recurring test of all delivered and contracted parts to Dr. Schneider the supplier has to establish all characteristics, especially the function, material and geometrics.

All products have to be tested by a full dimensional and functional inspection according the production control plan in consideration of the applicable costumer specifications for material and function. The results have to be available for customer assessments and they shall be made available to Dr. Schneider on request for free.
Note 1: dimensional inspections include the full measurements of all mentioned specifications of the product regarding the development documents
Note 2: the frequency of requalification test is determined by the customer

3 series production

The supplier may only start with the series production after … :

- A successful initial sampling according to no. 2. and
- A written release by Dr. Schneider.

All deliveries of new contractual parts which are before that time need a time or quantity-depented waiver by Dr. Schneider according to no. 3.3.

It is not permitted to deliver products with the current index after the series application of a new (changed) product- and/or process index, including relocation of production.

3.1 series monitoring

The supplier is obliged to monitor scheduled and document the specified characteristics (CC, SC and SPC), which are given by Dr. Schneider within the statistical process regulation.
In order the deviations can be early recognized and the relevant corrective measurements will be taken.
The processes must be mastered and capable. The verification is done by e.g. control charts, error log sheet, capability tests or according procedures specified by the customer (e.g. VW Germany/ TLD) and this must be available for Dr. Schneider within 24 hours, especially for tests at Dr. Schneider on behalf of their customer.

The supplier has to name a 'Product safety officer'. This person must be put in the supplier data base and is continuously updated.

3.2 measuring and testing equipment

The supplier guarantees that all significant quality characteristics will checked and that the process for steering and monitoring is fixed for all relevant measuring and testing equipment.
This process implies:

- testing and release of measuring and testing equipment;
- marking;
- monitoring, calibration, mounting, timely elimination of errors and maintenance of the measuring and testing equipment;
- evidence of the test equipment capability.

3.3 incorrect products

The supplier has to guarantee, that the incorrect parts are identified safe and fast in all product phases and they are excluded from the further agreements, delivery and utilisation.
Reworks must be documented and the reworked products must be checked once more.

The supplier need the appropriated waiver by Dr. Schneider before the delivery of products which deviates from the specifications. A waiver caused on deviations can only concern to a certain production batch, a certain production quantity or a certain production period. The waiver only can be assigned if an impairment of function, durability or safety cannot be expected provably.

A sample named *„request waiver supplier products"* must be attached to the QAA as **attachment 1**.

The request for waiver must reach Dr. Schneider.

The waiver which is given must be attached to the delivery.

If defects are assumed by the already delivered products, so the supplier must inform Dr. Schneider immediately.

3.4 Controlled Shipping

Dr. Schneider has the right to impose the controlled shipping level 1 and 2 on supplier, if the supplier hasn't the necessary safety measures. With regard on this, Dr. Schneider tries to avoid that non-compliant products are delivered to their own plant or to the customer.

Dr. Schneider will initiate Controlled Shipping (CS) I and the measurements will be done by the employees of the supplier. The inspection procedure must be performed in a separated area at the plant.
Secundary inspection data must be entered. The inspected product must be indicated and the documents must be transmitted to the receiving plant of Dr. Schneider.

In addition to all requirements of CS I, CS II needs an additional inspection by an approved independent party by Dr. Schneider. This independent party is chosen and payed by the supplier and obliged by Dr. Schneider. In certain cases Dr. Schneider can long for that the inspection by the independent third party must be performed outside the company of the supplier.

Based on the degree of severity of the results Dr. Schneider can immediately upgrade to CS II. DR. SCHNEIDER SQE will check irreversibel corrective measurements and authorize the repeal or rather the renewal of the controlled transport.

information: A minimum period of 30 days of the verification is obligatory for the corrective measurements without repeated appearance of the mistake.

3.5 marking and traceability

The marking of the contractual parts is effected pursuant to the conditions of the technical documents.

If nothing else has been agreed between Dr. Schneider and the supplier, the contractual parts must be marked that the traceability is guaranteed regarding the following aspects:

- material batches;
- production date/ shift;
- manufacturing parameters;
- worker;
- test documents and test results;
- used documents, test instructions and provisions.

3.6 final inspection

The supplier is obliged according to his effectively introduced QM-system to make a goods leaving inspection to ensure the flawlessness of his or on his behalf delivered products. The supplier establish under their own responsibility an inspection concept (random sample- or 100%-testing) and communicate with Dr. Schneider.

It is possible to agree for the proof of the conformity regarding important characteristics the attachment of certificates in the form of inspection documents according DIN EN 10204. If necessary it is important to attach these documents to the delivery notes of every delivery according the belonging production batch.

It is hereby agreed that the above named certificates must be attached to every delivery of batch-related advance samples for coatings.

4. acceptance terms by Dr. Schneider

Acceptance terms for varnishes:

- the supplier is obliged to attached the batch-oriented permit of the advance samples by Dr Schneider to the delivery
- the first delivery of the lacquer batch must be done within three (3) months after the permit of the belonging advance samples

Acceptance terms for products with a limited storage suitability:

- information about the expiry date on the packages and the delivery note
- storage suitability $\geq$ three (3) months for water-based coatings;
- storage suitability $\geq$ six (6) months for other products with limited storage suitability.

Acceptance terms for foams:

- information about the production date on the packages and the delivery note;
- the time between the production date and the purchase may not exceed three (3) months