

# NSK EUROPE SUPPLIER REQUIREMENTS MANUAL

## MESSAGE TO SUPPLIERS

QUALITY can be simply defined as doing something right the first time. QUALITY is not a philosophy, statement, or program, QUALITY is a way of life. It is the driving force for achieving total customer satisfaction profitably. The NSK Group aims to be **“No. 1 in Total Quality”**. In other words the Group is aiming to achieve the industry’s best quality in everything it delivers – not only products and services, but also information. We call this **“NQ1”**.

NSK Europe Ltd cannot achieve “NQ1” without the full support, commitment and expertise of our entire supply base. NSK Europe Ltd is committed to internal excellence and expects the same from its supply base.

This manual is designed to outline and communicate the NSK Europe Ltd supplier quality requirements and to ensure a thorough understanding of what is required to become / remain an approved supplier.

We thank you for your continued support, as well as your commitment to meet our quality objectives.

Purchasing	Quality
Signed:	Signed:

Supplier Authorised Signatories: <Supplier Name: >		
Quality		
Signed:	Signed:	Signed:

## **INTRODUCTION**

NSK Europe Ltd (hereafter referred to as “NSK”) is the supplier’s first line of communication and permission-granting authority whenever components are ordered and provided to NSK. NSK Purchasing coordinates supplier information and provides the appropriate NSK support activity to the supplier, including contact details of the relevant NSK quality representative, while relying upon the supplier’s expertise with regard to manufacturing and quality of the product.

While various NSK activities may assist a supplier in achieving quality requirements and improving quality, the responsibility for supplier quality remains with the supplier.

### **0.1 PURPOSE**

This manual communicates uniform quality requirements which NSK expects all suppliers to comply with. It provides general instructions and outlines procedures which must be followed in order to become, and remain, an approved supplier.

### **0.2 SCOPE**

This SUPPLIER REQUIREMENTS MANUAL applies to all prototype and production intent product related materials (raw materials, processing, components, sub-assemblies, and assemblies) procured by NSK. This manual is a quality standard and requires the formation and maintenance of a documented, active, and effective quality system by all suppliers to NSK. This manual defines the requirements for suppliers of NSK Europe Ltd and respects the requirements of Q001 and Q002 quality manuals owned by NSK Ltd.

This manual establishes specific minimum requirements. It shall be the supplier’s responsibility to implement and maintain any additional controls deemed necessary to continually ensure reliability and product conformance.

This manual describes the process by which a supplier of components, products and systems can become qualified to supply NSK. It is designed to outline and communicate the NSK supplier quality requirements and to ensure a thorough understanding of what is required to become and remain an approved supplier.

The process includes the initial qualification of the supplier, which will permit NSK to determine if a new supplier meets the minimum requirements established by NSK and can be added to the NSK Europe Approved Supplier Lists. The next step covers the qualification of the Supplier’s process (manufacturing, designing, sub-contracting) which will be used to supply NSK with a specific component and /or system.

Suppliers are expected to meet the requirements stated herein. These requirements do not supersede any of the purchase order, engineering drawing, specification requirements, and additional plant specific requirements or relieve the supplier of exercising independent expertise and skill in providing products to NSK.

NSK adheres to the strictest policies of corporate responsibility, care for the environment, health, safety and customer quality requirements. NSK expects that suppliers shall observe the same ethos and ethical approaches.

### **0.3 REFERENCE DOCUMENTS**

Reference documents are as follows:

- › Quality Management System IATF16949 (latest edition)
- › Advanced Product Quality Planning & Control Plan (APQP), AIAG
- › Measurement Systems Analysis Manual (MSA), AIAG
- › Statistical Process Control Manual (SPC), AIAG
- › Potential Failure Mode and Effects Analysis (FMEA), AIAG
- › Production Part Approval Process (PPAP), AIAG
- › VDA - Volume 2 Quality Assurance for Supplies Production process and product approval (PPA)
- › VDA - Volume 6 Part 3: Process Audit
- › VDA - Maturity Level Assurance for New Parts (RGA)
- › VDA - Volume 4 Chapter: Product-and Process-FMEA
- › VDA - Volume 5: Capability of Measurement Processes
- › Other specific process related requirements will be advised as appropriate by NSK (e.g. CQI-9, CQI-11, etc.)

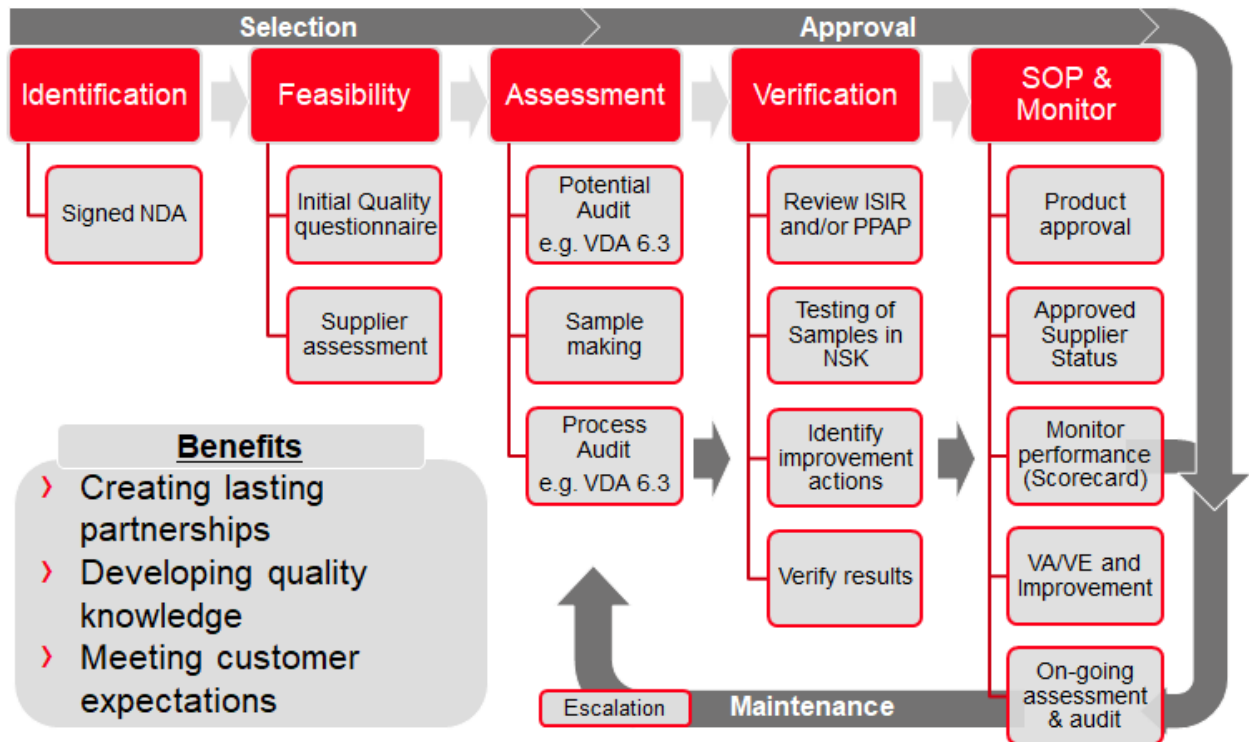
### **0.4 NSK PLANT SPECIFIC REQUIREMENTS**

As appropriate, NSK plants will have additional requirements specific to their quality management system e.g. Customer-specific requirements, special and safety critical characteristics, forms and templates, etc. These will be informed to the supplier by the NSK plant quality contact accordingly and adherence is mandatory.

**1.0 SUPPLIER SELECTION AND APPROVAL**

Suppliers are required to possess third party certified management systems based on ISO9001, IATF16949 and ISO14001 prior to being approved for business nominations.

Suppliers are selected and approved by NSK on a supplier manufacturing location by location basis (i.e. approval of one supplier manufacturing facility does not constitute approval of any other facility).



**1.1 SUPPLIER SELECTION**

**1.1.1 Identification and Feasibility**

The supplier selection process formally starts within NSK Purchasing. The Supplier may be visited by NSK to validate information provided in the questionnaire and further evaluate their capability and systems.

NSK will provide the supplier with:

- › NSK Supplier Requirements Manual and Green Procurement, etc.
- › Corporate Social Responsibility (CSR) self-assessment and guidelines, Conflict Minerals, 8D Guidelines and other key documents as appropriate
- › NSK Purchasing Terms and Conditions
- › Confidentiality agreement / Non-Disclosure Agreement (NDA)

Failure to acknowledge or complete the necessary requirements may result in stopping the supplier selection process and/or no new business being awarded.

Suppliers must conform to all applicable environmental, labour and compliance laws as defined in the NSK Supplier CSR Guidelines. Suppliers found to be in violation of this requirement will be immediately placed on disqualification status and potential new suppliers will automatically be disqualified from the supplier selection and approval process.

## 1.2 SUPPLIER APPROVAL

### 1.2.1 Assessment

Upon determination to move forward with qualification of the potential supplier, NSK Purchasing will involve the responsible NSK Quality Department which initiates the on-site portion of the approval process.

Generally, on-site supplier **Potential Analysis** shall be conducted as part of the initial introduction as a new supplier, or new supplier location, prior to sourcing. This supplier potential analysis is based on a structured process e.g. VDA 6.3. Notification of the supplier potential analysis will be given well in advance. NSK will contact the supplier to schedule the onsite potential analysis. At this time, the supplier will also be provided with the NSK Supplier Potential Analysis form and asked to perform a self-assessment in preparation. The self-assessment shall be provided to the NSK Quality Department prior to the on-site audit. This will allow the supplier to prepare evidence in advance of the visit, and serves to offer a comparison between the Supplier and NSK quality assessment.

Once the potential analysis is successfully completed, the supplier is considered to have the potential to supply NSK. Final approval will only be given once a full **Process Audit** has successfully taken place. NSK may perform a process audit at the supplier site utilizing such methods as VDA 6.3 Process Audit or equivalent.

In some circumstances and as defined by NSK, a “desk-top review” of the supplier may be conducted in place of an on-site assessment.

Process audits may be performed by NSK for critical components, products and/or systems, in the case of recurring non-conformances, or any other reason at NSK discretion.

Suppliers shall be required to provide corrective actions to any non-conformances identified during process audits and complete implementation in the agreed timeframe.

Suppliers failing to pass the potential analysis or the process audit may still be considered for development. Supplier will be on hold for business pending achievement of passing score.

### 1.2.2 Product and Process Verification

In order to verify the Supplier, NSK may request representative samples and an Initial Sample Inspection Report (ISIR) would be expected to accompany this. Details and requirements shall be informed in accordance with project milestones. These and other relevant items will form part of the verification phase.

Approval will only be given once all relevant pre-determined criteria have been met by the supplier as part of the verification phase.

### **1.2.3 Launch Readiness**

#### **1.2.3.1 Approved Supplier List**

NSK maintains controlled Approved Supplier Lists which consists of all suppliers approved to supply products or services to NSK. It is the vehicle to inform all employees of the status of the NSK supply base for direct and non-direct suppliers (as defined by NSK).

NSK Purchasing will select a supplier from the NSK Approved Supplier List, based on its technical ability to supply a specific component and/or system and to meet quality, costs and delivery criteria. NSK will determine the criticality of the component and/or system.

#### **1.2.3.2 SOP and Monitor**

Once successful Product Approval has been granted by the respective NSK plant, suppliers will be monitored and informed of their performance on a regular basis in the form of Q, C, and D metrics. This data will be used to help identify potential weakness and opportunities for improvement of the supplier. This data will also be used to identify failing suppliers who may then proceed to follow the escalation process (refer to 8.0 SUPPLIER ESCALATION). Throughout the SOP and Monitor phase, NSK expects the supplier to support any necessary quality improvement activities.

## **2.0 GENERAL SUPPLIER QUALITY SYSTEM REQUIREMENTS AND ASSESSMENT**

Suppliers are required to provide to NSK a copy of their quality system registration certificate at RFQ and provide updates if / when any changes are made to the certificate (scope, expiration dates, standards, etc.). If at any time a supplier's quality system registration is allowed to expire, or is rescinded by the certification body, NSK must be notified immediately.

The supplier shall establish and maintain a clearly documented quality system that provides a means of ensuring that products conform to specified requirements. This system shall control the issue of drawings, specifications, procedures etc. Provision shall be made for the control of obsolete copies and their subsequent archiving and disposition.

## **3.0 PRODUCT QUALITY PLANNING**

NSK requires the supplier to utilise a product quality planning process that supports development of a product or service. Reference can be made to AIAG APQP Manual and/or VDA-RGA or equivalent. Product Quality Planning is required in the following situations:

- › During the development and validation of new processes and products
- › Prior to significant changes in processes and products
- › Before tooling is transferred to new producers or new plants

### **3.1 PRODUCT QUALITY PLANNING MEETING**

As appropriate, NSK shall initiate such Product Quality Planning meetings. It is the Suppliers responsibility to develop the Product Quality Plan. The minimum requirements to be reviewed during these meetings:

- a) Drawing:
  - › Check if each element of the drawing is clear for supplier

- › Check if each note in the drawing is understandable
  - › Check if the specifications are available for supplier
  - › Check if released drawing or signed marked drawing is delivered to supplier
  - › Check if material is well described and available in the region
- b) Sample Requirements:
- › Quantities
  - › Cp, Cpk requirements
  - › Due Dates
- c) Special requirements e.g. CQI-9, MMOG/LE, etc. about control system (customer directed methodology or frequency of assessment)
- d) Logistic requirements like packaging, delivery frequency, delivery conditions plus all specific requirements of logistic team. If NSK will not define special packaging, supplier is obliged to present proposal for acceptance.
- e) Tooling concept for review. NSK will only verify if minimal technical requirements are met. Supplier maintains responsibility for proper tool function.
- f) Intended capacity, including all sources (tool, equipment, personnel)
- g) Feasibility agreement
- h) Product Quality Planning timing to meet program requirement
- i) Previous quality issues with those types of parts (lessons learnt)
- j) Raw material, production and delivery lead times
- k) Gauging requirements, as necessary

The supplier has to collect information before the meeting to be able to complete Product Quality Planning.

### **3.2 DRAWINGS AND SPECIFICATIONS**

The supplier must maintain the latest revisions of the NSK and/or OEM drawing and specifications as part of quality documents. All technical changes and/or reviews must be documented, stating clearly what changes, date of changes, revision of changes, etc.

### **3.3 PROCESS FLOW DIAGRAM**

Flow Diagrams of the process establish and document the relationships between operations and control points. Flow Diagrams provide essential information for other quality planning techniques such as the process FMEA and the Control Plan. NSK recommend the use of such diagrams. Flow diagrams may be required to be submitted by the supplier for Process Approval and shall be tied to Control Plan and PFMEA operation steps.

### **3.4 RISK ANALYSIS METHODOLOGY**

The supplier shall use and NSK shall utilize risk analysis methodology to assess risks within both product design and manufacturing processes. Methods such as FMEA assist in the prevention of nonconforming materials and components through a structured analysis of potential failure modes. Risk analysis methodology is required for all new or changed products and processes. These are “living documents” and must be updated for design and process changes, as well as lessons learnt throughout the product life. The type of Risk Analysis Methods used must be agreed with NSK prior to nomination.

Risk Analysis Methodology is required for product approval.

### **3.5 CONTROL PLAN**

A Control Plan is a document that summarizes the supplier’s methods to assure continual conformance to drawing and specification for a specific part or family of parts. It provides an effective way for suppliers to develop and document quality controls for products and to review changes made after production begins. Changes of significance (form, fit, function, durability, appearance or level of control) are to be approved by NSK via product approval submission (PPAP or ISIR as appropriate).

The starting point for a Control Plan is the list of control characteristics. Up to this stage of the quality planning process, the list will have been developed from the following sources:

- › Special characteristics known to be significant / critical by the supplier, based on product and process knowledge, as well as knowledge of customer and legal requirements.
- › Special characteristics identified by NSK and/or by our Customers on engineering drawings and specifications must be adhered to.

Special characteristics will be identified during Product Quality Planning and via FMEA (as appropriate).

Once the control characteristics are identified, control methods must be developed and documented in the Control Plan. Control Plans shall detail all controls from receipt of raw materials through finished product shipment and shall not focus exclusively on special characteristics.

NSK designated special characteristics must have SPC control referenced in the control plan and these must have process “mistake proofing” to further assure 100% quality is received at NSK at all times. Mistake proofing controls shall be referenced in the control plan, including the supplier’s method of minimum daily verification of the continued function of such controls.

Where products are safety related, this shall be informed to the supplier by NSK and necessary additional controls must be in place as part of the Product Quality Planning process.



Completed control plans must be submitted to NSK for product approval.

**IMPORTANT NOTE:**

Links between quality records e.g. PFMEA, Process Flow Chart and Control Plan MUST be established and easily recognizable on all these documents! All references indicated must be available and provided promptly on request.

**3.6 GAUGING REQUIREMENTS**

When specified, it is the responsibility of the supplier to supply gauges for components. Preliminary gauge discussion shall begin during the Product Quality Planning meetings.

**3.7 MEASUREMENT SYSTEM ANALYSIS (MSA)**

Product and process conformance must be determined by measurements made with appropriate test equipment and gauges. The supplier must establish the error of measurement to specification ratio since the test equipment or gauge is a significant part of the process. Any error in these measurements, whether known or unknown, has a direct bearing on the ability to judge process / product conformance and capability.

NSK requires that test equipment and gauges used to evaluate any control plan characteristic have Gauge R&R studies conducted. Gauge R&R studies shall be submitted to NSK for all special characteristics gauging for product approval. Reference should be made to the latest AIAG MSA Manual.

**3.8 PROCESS CAPABILITY / STATISTICAL PROCESS CONTROL (SPC)**

Statistical Process Control (SPC) must be used as an integral part of the supplier’s process to provide the information necessary for those process parameters and product characteristics, sometimes referred to as *Control, Significant, Critical, Key characteristics*. These are usual on those features that affect the form, fit, function and/or durability.

At a minimum, all NSK drawing and specification designated as special characteristics must have on-going statistical controls or mistake-proofing. These controls must be referenced in the supplier’s control plan with a minimum sample size of 125 or as otherwise stated by NSK.

Process Capability Study	Capability Indices
Machine capability index <ul style="list-style-type: none"> <li>&gt; Short term study</li> </ul>	Cm / Cmk > 1.67
Preliminary process performance index <ul style="list-style-type: none"> <li>&gt; Preliminary study, early process performance</li> <li>&gt; For special characteristics</li> </ul>	Pp / Ppk > 1.33 Pp / Ppk > 1.67
Process capability index <ul style="list-style-type: none"> <li>&gt; Long-term study, stable process</li> <li>&gt; For special characteristics</li> </ul>	Cp / Cpk > 1.33 Cp / Cpk > 1.67

For electronic components, Cp / Cpk greater/equal to 2.00 are required. When such indices are below these minimum requirements, supplier is required to develop improvement action plans to reduce process variation and meet required target or 100% mistake proofing.

### 3.9 PRODUCT HANDLING, STORAGE, DELIVERY AND TRACEABILITY

NSK specific requirements for the supplier to comply with follow:

**Handling:** The supplier shall utilize methods of handling that prevent damage or deterioration before, during, and after the manufacturing process.

**Storage:** The supplier shall utilize secure storage areas to prevent damage or deterioration of product pending use or delivery. Appropriate methods for authorizing receipt and dispatch to and from such areas shall be stipulated in order to maintain control and assure FIFO (First In – First Out). Shelf life shall be monitored in accordance with the relevant specifications (e.g. Purchase Specification, Material Datasheets, etc.). Special storage condition requirements (i.e., temperature / humidity levels) shall be determined, and implemented, to prevent deterioration during storage at supplier locations.

**Delivery:** The supplier is responsible to design and utilize packaging which is most cost effective and ensures that when the product reaches NSK it is conforming with agreed specifications and “fit for purpose”, regardless of Incoterms. Suppliers are responsible to supply finished product to NSK on a FIFO basis.

Suppliers are required to supply on time in accordance with NSK release schedules and quantities. NSK shall have the right to reject over-shipments and arrange returns at the supplier's expense. Short shipments may require expedited shipments at the supplier's expense. Such incidents may result in a supplier chargeback to recover any related costs to NSK.

**Traceability:** Components / product shall be traceable back to raw material (lot, cast / heat numbers). Relevant documentation and records shall be maintained as evidence. NSK reserves the right to request, review and audit these records at any time.

### 3.10 PROTOTYPE / PRE-PRODUCTION PRODUCT (INITIAL SUBMISSION REPORT)

All prototype or pre-production (Off-Tool/Off Process) product supplied to NSK shall conform to the applicable drawing, specification, and purchase order requirements in their entirety. Dimensional layout and Material Certification Reports are required to be provided with pre-production and prototype. If such requirements cannot be met for any reason, the supplier shall notify NSK at the time of order placement, or immediately following subsequent discovery of any discrepancy and request disposition. Nonconforming product shipped without NSK written authorization is subject to rejection / return and chargeback for any related costs incurred by NSK as a result of the non-conformance (product built, test failure, customer impact / costs, etc.).

Initial samples, if required, must be manufactured with the final means and representative of series production component or systems. The relevant NSK plant shall inform the supplier of the required annotation and labelling.

### 3.11 RUN AT RATE

To ensure that new components meet yield, rate and quality requirements, Run at Rates are required unless otherwise advised by NSK. Run at Rates are mandatory on newly tooled

components, components with significant volume increases or components with changes that require significant process or assembly changes. Run at Rates may be customer monitored (witnessed by NSK personnel), or supplier monitored (performed by the supplier with results submitted to NSK). Run at Rates shall be successfully completed prior to product approval. If this is not accomplished, a provisional product approval may be issued at the discretion of NSK.

### **3.12 TOOLING**

#### **TOOLING PROGRESS REPORT (TPR)**

Where appropriate, the supplier shall ensure that the TPR lists all major steps through the design, construction and qualification process, up to the Product Approval Process stage.

Note: The dates should coincide with those defined in the Product Quality Planning phase.

#### **TOOLING DOCUMENTATION / TOOL IDENTIFICATION**

The supplier shall ensure that each individual die, mould, fixture, equipment, etc. purchased by NSK must be labelled to permanently identify it as property of NSK and must provide corresponding photographic evidence to NSK. The label must include tool and part number. The supplier shall further ensure that tooling paid for by NSK's customer will be identified with the customer's supplied information to their specifications.

#### **TOOLING STORAGE**

The supplier is required to provide an accessible storage area where all labelled NSK / Customer tools are located. If any tooling is stored off-site, approval must be provided by NSK Purchasing Department prior to any tool movement. The supplier will be responsible for proper storage and apply proper protective methods and provide a list of tooling inventory.

#### **TOOL INVENTORY**

Every supplier shall provide NSK tooling inventory information every second year or on request.

#### **TOOL MAINTENANCE**

Each individual die, mould, fixture, equipment, etc. purchased by NSK must be maintained according to the supplier tool maintenance plan. Supplier shall absorb full costs of defected die, mould, fixture, equipment, etc. associated with non-maintaining.

### **3.13 PRODUCTION APPROVAL PROCESS**

This section sets out the requirements that the supplier must follow when preparing samples and documentation for production approval. Levels of submission will be allocated to the supplier based on the product supplied. NSK recognizes the AIAG Production Part Approval Process (PPAP) manual and the VDA Volume 2 Quality Assurance for Supplies Production process and product approval (PPA) as the requirements for production part approval.

PPAP submission date commitments are to be provided by suppliers for all new and changed parts and commitment dates are to be met at all times. If any issue causes a deadline to be jeopardized, the supplier must immediately communicate this to NSK and agree upon a revised submission date that will support program timing. PPAP submissions are expected to

be 100% complete and conforming to all applicable requirements upon initial submission. It is the supplier's responsibility to resolve any issues preventing complete and conforming submission in advance of the submission date. Incomplete and non-conforming PPAP's will be rejected.

PPAP submission dates that are not met, or PPAP's that are rejected may impact on the Supplier performance evaluation.

PPAP approval must be granted by the applicable NSK quality function.

Unless otherwise specified by NSK, the required PPAP submission level is 3. For source controlled products with third party owned tooling / customer directed suppliers, PPAP submission to NSK might be a copy of the approval document from the governing customer and a Level 1 Part Submission Warrant from the supplier.

Each supplier PPAP submission must include actual dimensional, material and test data (as applicable) documenting conformance to all print characteristics, notes and referenced specifications. Blanket statements of conformance are not acceptable.

**Proprietary Documents:** Proprietary documents may be excluded from PPAP submission upon approval of NSK (i.e. FMEA). When such conditions exist, the supplier shall include a letter in the PPAP submission adequately justifying the reason the document is proprietary and stating that the document is available for review by NSK at the supplier location.

**Dimensional Layout Requirement:** NSK requires that a minimum number of pieces be measured as defined in the agreed control plan.

**Sub-Assembly PPAP Submissions:** Where NSK maintains design control of components purchased in assembly, NSK requires that sub-supplier PPAP submissions be submitted along with the supplier's PPAP submission to NSK. Example: NSK purchases an assembly from a supplier, the supplier submits assembly PPAP package and approved sub-component PPAP packages (copies). The NSK supplier is responsible to manage the quality and PPAP approval of all sub-supplied components and materials.

**Sub-Supplier Initial Sample Approval:** Suppliers will maintain approved samples of key components, products, or systems manufactured by their sub-suppliers, which will be used in the supply of the NSK component or system. Initial Sample Reports shall be kept by the supplier at NSK's disposal.

**Master Samples:** The supplier is to submit a number of PPAP master samples (minimum one part per cavity per die) with the PPAP submission as defined by NSK / the customer. Master samples are to be identified and numbered to ensure traceability of the sample to the corresponding layout data. If submission of master samples is not practical (i.e. raw materials), contact NSK for direction.

**Bulk Material:** Bulk material is defined as standard, commercially available material. At a minimum, a Level 1 Warrant with applicable conformance testing / analysis data is required for bulk material PPAP. Welded or rolled tubing and customized special material requires full PPAP submission when changing sub-suppliers.

**Packaging:** PPAP submission is not required for packaging and packaging materials supplied to NSK (i.e. boxes, dividers, plastic wrap, box labels, etc.). Evidence of industry standard testing may be requested by NSK.

**International Material Data System (IMDS) requirements:** Where product is supplied in to the automotive industry, it is the supplier's responsibility to enter all material information into the IMDS ([www.mdsystem.com](http://www.mdsystem.com)) prior to PPAP approval.

**Annual Validation / PPAP Requirements:** Where required, annual validation to be performed by the supplier shall be documented in the control plan. Results shall be maintained by the supplier and be made available to NSK upon request. Annual PPAP submissions are not required to be submitted to NSK unless specifically requested by NSK Quality Department. It is the supplier's responsibility to submit a complete, conforming PPAP package on time to NSK. First Time Submission Approval is expected of all suppliers. If lack of PPAP approval may affect the supplier's ability to supply product on time in accordance with NSK orders, the issue must immediately be brought to the attention of NSK.

### **3.14 SHIPMENT REQUIREMENTS – Where applicable**

NSK will reject shipments received without all required quality data and certifications.

### **3.15 ON-GOING SHIPMENT**

At the request of NSK, each shipment must include data demonstrating conformance of raw materials data (i.e. steel, plastic, and chemicals), dimensional inspection, test, and / or SPC data to NSK requirements.

The supplier must provide data at the request of NSK within 24 hours for any characteristic in the approved control plan, even if the data is not required to be submitted with each shipment.

## **4.0 NOTIFICATION OF QUALITY CONCERNS**

NSK requires that suppliers formally notify the affected NSK manufacturing plant(s) of any quality concerns within 24 hours of discovery without exception. This applies to all quality concerns identified by suppliers for which product shipped is suspect. If exposure has not been determined within 24 hours of discovery and product shipped to NSK has not been proven to be void of the concern, notification is required. Suppliers shall present the concern in detail, the exposure of the concern (i.e. what lot number(s) is / are affected), the containment and corrective action plan.

### **4.1 REWORK / REPAIR**

Rework consists of any actions to the product that are not part of the documented and PPAP approved production process.

No rework is allowed on safety critical components. When rework is necessary, the supplier must develop written procedures. These procedures must provide for additional inspection and testing after rework to ensure conformance to NSK specifications prior to shipment or further processing.

#### **4.2 QUALITY CONCERN MANAGEMENT**

Any supplier quality concerns detected at NSK or NSK customer locations will be formally directed to the appropriate supplier contact.

Suppliers shall submit corrective actions for any defects discovered during analysis by NSK. It is required that suppliers maintain a system for corrective action of quality concerns. This system must include a multi-disciplined problem solving methodology and follow-up of corrective action implementation and effectiveness.

The supplier is required to analyse nonconforming/suspect product returned from NSK manufacturing plants, engineering tests and vehicles in the field. Records of the results of these analyses must be submitted to NSK upon completion.

Unless advised otherwise by the respective NSK quality department, all supplier corrective action responses are required to be submitted utilizing the 8D Problem Solving Report format with addition of cause and affect analysis as requested.

Unless the supplier is notified otherwise, NSK expectations in relation to timeliness of 8D response are:

- › 3D: Within 24hrs
- › 8D: Within 20 Days\*

*\*Note: The timeliness expectations of NSK customers could well influence the 8D targets given to suppliers. These will be informed by NSK accordingly to ensure timely resolution of claims to meet our customer expectations.*

#### **4.3 COST RECOVERY FOR NONCONFORMING PRODUCT**

The supplier shall absorb any costs associated with nonconforming product as received or processed through a NSK manufacturing plant. These costs shall include, but not be limited to: premium freight (inbound and outbound), scrap, returned material, labour (sorting, rework, repair, teardown, overtime, downtime, etc.), testing beyond normal requirements, customer communications, liaison visits, customs fees and related customer charge-backs.

## **5.0 PROCESS CHANGE REQUEST AND DESIGN CHANGE**

A Process Change Request (PCR) using the “*NSK Change Request Application Form*” shall be submitted by the supplier to NSK Purchasing (or NSK Manufacturing Plant as agreed) for any proposed changes to the agreed process flow, control plans, material source changes and manufacturing location changes. No changes shall be made without the prior written agreement of NSK. Design changes shall be treated in the same way.

## **6.0 CONCESSIONS / AGREEMENT FOR DEVIATION (AFD)**

In principle, NSK does not accept products that do not meet the specified quality levels. Where there is a possibility that the non-conformance does not preclude its use in production and the feature does not affect our customer expectations of quality, the supplier shall contact NSK Purchasing (or NSK Manufacturing Plant as agreed) and declare the deviation prior to shipment.

The non-conformance shall be evaluated and where suitable, a numbered concession permit shall be raised. If sanctioned, the concession reference number must be cited on all documentation and packaging used in the shipment to the NSK receiving location.

A corrective action report (CAR), describing cause and countermeasure for the circumstance is required with all requests for concession.

The Supplier shall also be responsible for informing the relevant NSK Quality Representative whenever there is reason to suspect that parts previously supplied, may not be in accordance with the order / contract.

NSK concession cards are available on request from NSK Quality Representative. NSK will not provide a concession for SC or CC features.

## **7.0 SUPPLIER CONTROL OF SUB-SUPPLIERS**

Suppliers to NSK shall select sub-suppliers on the basis of their ability to meet subcontract requirements, including NSK quality requirements defined herein.

The NSK supplier shall ensure that sub-suppliers quality and system controls are effective and meet the NSK Supplier Requirements Manual. The supplier shall be prepared to show documented evidence of sub-supplier quality levels at the request of NSK and also provide NSK, and NSK customers, access to sub-suppliers facilities and records if requested at any time.

Suppliers shall target business with IATF16949 or ISO9001 (latest edition) compliant sub-suppliers.

Suppliers are responsible for ensuring only approved and quality capable sub-tier suppliers are used and are responsible for the quality assurance and corrective action of products supplied from sub-tier suppliers for use within NSK products.



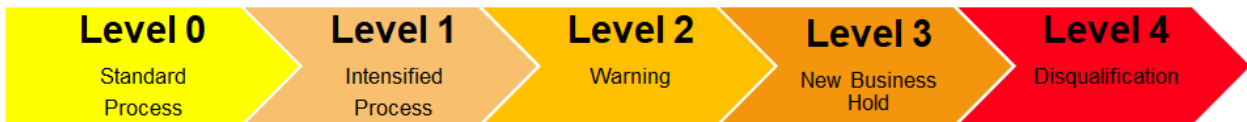
## 8.0 SUPPLIER ESCALATION

The Supplier Escalation process is intended to heighten the awareness of NSK's supply base to quality and/or delivery performance and to focus the improvement efforts of the supplier in these areas.

NSK will initiate Supplier Escalation meetings at a specified location for suppliers with significant quality and/or delivery issues, repeat issues or negatively trending quality and/or delivery performance. Suppliers may also be escalated depending on the nature of the application e.g. Safety Critical or likely impact on NSK Customers. Escalation could also occur as a result of end-user escalation e.g. Customer CSL1, CSL2, etc.

At Escalation meetings, suppliers will be required to present corrective action plans to NSK.

The program consists of 4 levels, as detailed below:



The following steps are available to NSK regarding escalation of Suppliers:

**Level 0 - Standard Process:** Standard Process Control. 8D Report expected.

**Level 1 - Intensive Process:** Improvement plan required and/or 100% final control until concern is eliminated.

**Level 2 - Warning:** Supplier interview. Supplier presents corrective actions. Status is reported to NSK Senior Management.

**Level 3 - New Business Hold:** Supplier CEO/Plant Manager to present to NSK in person. Supplier will arrange 3rd Party despatch control (Firewall). NSK Purchasing informs Supplier of New Business Hold status.

**Level 4 - Disqualification:** Supplier will be permanently excluded from new business and a change of supplier will be made as soon as possible.

Escalation is generally led by NSK European Quality Assurance (EQA).

Note: NSK Quality Department will review and approve closure of all Corrective Actions.



**9.0 SUB-CONTRACTING**

Supplier shall not sub-contract any work awarded by NSK without the prior written approval from NSK Purchasing. The supplier should ensure that subcontractors are evaluated and selected on their ability to meet specified requirements. A list of approved subcontractors shall be maintained.

**10.0 GREEN PROCUREMENT STANDARD (GPS)**

NSK adheres to the highest standards of corporate responsibility and environmental care. NSK expects that their suppliers make every effort to manage business in line with all legal and regulatory requirements and adopt the ethos of NSK.

NSK Globally publishes and maintains a Green Procurement Standard; this is normally highlighted in purchase specifications and will be made available to suppliers and 2nd tier suppliers as necessary. The NSK Green Procurement Standard shall be recognised by Suppliers and any responses and declarations requested from the supplier as defined in purchase specifications and on drawings shall be provided to NSK in timely fashion.

NSK Europe adheres to legal and regulatory compliance inclusive of REACH, ROHS and environmental legislation and supports the IMDS data base.

The automotive supply chain around the world has developed an “Automotive Industry Guideline on REACH” which can be used as a quick overview on REACH, its requirements and the recommended actions. This guideline is found at [www.acea.be/reach](http://www.acea.be/reach).

The European Chemicals Agency (ECHA) website is <http://echa.europa.eu/>.

Guidance Documents on the ECHA site is found at [http://reach.jrc.it/guidance\\_en.htm](http://reach.jrc.it/guidance_en.htm).

Abbreviation	Explanation
NQ1	NSK Quality No.1
Q001	NSK Ltd Supplier Quality Manual
Q002	NSK Ltd Material Supplier Quality Manual
IATF16949	Automotive Quality Management Standard (International Automotive Task Force)
APQP	Advanced Product Quality Planning
AIAG	Automotive Industry Action Group
MSA	Measurement Systems Analysis
SPC	Statistical Process Control
FMEA	Failure Mode Effects Analysis
PPAP	Product Part Approval Process
PPA	Process and Product Approval
VDA	Verband der Automobilindustrie (German Association of Automotive Industry)
CQI-9	Continuous Quality Improvement for Heat Treatment Assessment
CQI-11	Continuous Quality Improvement for Plating System Assessment
MMOG/LE	Materials Management Operations Guidelines/Logistics Evaluation tool
Cp/Cpk	Process Capability Index – Long-term measure of process performance with a stable process
Pp/Ppk	Preliminary Process Performance Index – used to obtain early information on process performance
OEM	Original Equipment Manufacturer
ISIR	Initial Sample Inspection Report
Gauge R&R	Gauge Repeatability and Reproducibility
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RoHS	Restriction of Hazardous Substances (AKA Directive 2002/95/EC)
ECHA	European Chemicals Agency
ISO9001	International Quality Management System
ISO14001	International Environmental Management System
8D	Eight Disciplines of Problem Solving

## HISTORY

Revision	Date	Details of change
1	28 <sup>th</sup> June 2019	Major re-write and released to replace existing SQAM.