



# Growth through Partnership





# **National Engineering Industries Limited**

## **Supplier Quality Manual**

**4<sup>th</sup> Edition – May 2019**

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## Supplier Quality Manual

### CEO Message:

Dear NEIL Partner,

Amidst changes in global economies, technologies, government regulations, relative prices and market dynamics, the task of strategic analysis and planning in Automotive Supply Chain has become increasingly tense with uncertainty. As a result of this, planners now must prepare for the most fundamental transformation that their industry has ever seen.

The uncertainties have surpassed the conventional issues that automakers faced in past, such as identifying the products that will be popular in years to come, focusing on regions that will generate the strongest growth and investing in technologies that will appeal to customers. Today we are faced with much bigger challenges in terms of future of Industry and its convergence. These challenges include risks due to increasing level of national and international competition, industry transformation, new regulations and consolidation of automotive platforms.

At NEIL our mission is to provide competitive advantages and address above challenges faced from customers by selecting, developing and managing suppliers who are capable of delivering best products in terms of Quality, Delivery, Cost and Features & are willing to support NEIL in its endeavor of business excellence.

In support of the strategy “**ROBUST SUPPLIERS FOR FLEXIBLE SOLUTIONS**”, our effort is directed towards selecting the best suppliers based on capability and performance. Once selected, our goal is to work with these suppliers to develop a strong, long-term, structured relationship with them.

We expect our suppliers to be committed to a **ZERO DEFECT APPROACH** and be specially focused on (i) Controls of processes (ii) Adhere statutory and legal requirements and (iii) have a risk contingency plan to demonstrate this commitment through:

- Delivering fully conforming parts or products
- On time delivery
- Adherence to approved processes and requirements
- Pro-active risk management.

This document cascaded to you us intended to serve as a reference to better understand our requirements and your role in the shared responsibility to deliver the best quality with least risk.

We encourage our suppliers to certify their parts for Direct On Line (DOL). This translates into zero line rejections and warranty rejections. Needless to say this should be achieved at competitive cost.

With your commitment to participate as a Robust & Flexible Supplier, we will succeed in our mission to meet the challenges enveloping our industry through '**Growth through Partnership**'.

With Best Regards,

**Rohit Saboo**

President & CEO

NEIL, Jaipur



## NEIL Supplier Quality Manual Revision History

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02	Second Edition	2012
03	Third Edition	2016
04	Fourth Edition	2019



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## 1. (a) Abbreviations

NEIL	National Engineering Industries Ltd.
AAR	Appearance Approval Report
APQP	Advanced Product Quality Planning (AIAG Reference Manual)
BOM	Bill of Materials
Cp/Cpk	Capability Index
DFMEA	Design Failure Mode Effects Analysis
NC	Non-Conformity
NPD	New Product Development
PFMEA	Process Failure Mode Effects Analysis
PPAP	Production Part Approval Process
PPM	Parts Per Million
PSW	Part Submission Warrant
RFQ	Request for Quotation
SPC	Statistical Process Control
SDD	Supplier Development Department
SQA	Supplier Quality Assurance
SQM	Supplier Quality Manual

## (b) Definition

**Supplier:** The companies which either directly supply their own material or processes NEIL supplied material.

### **New Product (In view of the supplier development perspective) :**

- (i) A Product is considered a New Product, if the bearing being manufactured is a new model for NEIL.
- (ii) If supplier has to supply a product of different shape from his regular supply to NEIL, then it is considered a New Product.
- (iii) If a Supplier does a particular operation for the first time, then also the product supplied by him is considered a New Product.

## 2. NEIL Policies

### a. Quality Policy

NEIL is committed to design, develop, manufacture and supply products to customers as per their requirements and strive to provide customer delight through value added products, continual improvement and employee involvement.



**b. Environmental Policy**

NEIL, manufacturer of bearings, is committed to demonstrate environmental friendly product by complying applicable EHS legal & other requirements, prevention of pollution, injury & ill health of our employees in entire value chain with proactive environment, health and safety strategies through continual improvement & optimizing resource consumption.

**3. Introduction of Supplier Quality Manual**

**a. Purpose**

- To provide an overview of this manual
- To define the document control methods being followed
- To make Interaction structure of NEIL with the Supplier clear.

**b. Objectives**

- The objective of NEIL SQM is to work with suppliers to achieve and maintain compliance to all requirements and promote the continuous improvement of suppliers.
- With the acceptance of a NEIL purchase order, the supplier agrees to all specifications and requirements within the NEIL SQM.
- This document is a supplement to and doesn't replace or alter conditions covered by purchase agreement.

**c. Scope**

This Manual is applicable to all suppliers providing Direct Material to NEIL and its subsidiaries.

**4. How to use this document**

The target of this document is to synthesize and communicate our suppliers towards the **NEIL** quality and safety requirements to ensure the quality of supplied parts.

The latest valid version of this Supplier Quality Manual is available on **NEIL** website [www.nbcbearings.com](http://www.nbcbearings.com)

Important: -Suppliers shall retain this SQM readily available at their manufacturing locations all the time. It shall be provided to NEIL representative as and when required. Supplier is solely responsible for retaining latest revision of this manual.

To confirm latest revision of this manual, visit NEIL website time to time.

**5. Supplier Code of Conduct**

NEIL expects the highest standards of ethical conduct in all of our endeavors. Supplier shall always be ethical in every aspect of its business, including relationships, practices, sourcing, and operations:-

**a. Business Integrity**

Supplier shall not engage in corruption, extortion, embezzlement, or bribery to obtain an unfair or improper advantage. A supplier must promptly report to NEIL SD Deptt if it believes that someone working at or for NEIL (whether or not a NEIL employee) has committed an illegal or dishonest act, or an act that causes, or is substantially likely to cause, harm to people or property or company



reputation or suspected violations of this code.

**b. Human Rights**

Supplier shall ensure Freedom of Association and Anti-Discrimination and Fair Treatment to all its employees. Working Hours, Rest Days, Wages and Benefits shall be as per Govt. rules and regulations. Suppliers shall ensure that no underage labor (less than 18 years) has been employed in the production or distribution of their goods or Services.

**c. Working Environment**

Suppliers shall ensure that all workers receive communication and training on emergency planning and safe work practices. In addition, suppliers shall have systems to prevent, detect and respond to potential risks to the safety, health and security of all employees.

**d. Environment Protection**

Supplier shall implement a systematic approach to identify, manage, reduce, and responsibly dispose of or recycle hazardous substance. Supplier shall implement a systematic approach to identify, control, and reduce water, noise and other kind of pollutions produced by its operations.

Note: - NEIL will assess its suppliers' compliance with this Code, and any violations of this Code may jeopardize the supplier's business relationship with NEIL, up to and including termination.

**6. NEIL General Requirements**

**6.1 Quality Management System**

Supplier shall have a documented quality system and agree to onsite assessments.

ISO 9001:2015 certification is minimum requirement for all NEIL suppliers. However, NEIL may demand IATF 16949:2016 certification from its suppliers if any customer demands for the same.

In addition, NEIL expects suppliers to work towards the goal of achieving compliance to the latest IATF 16949:2016 standard and RDSO / AAR approval in case of Railway Bearing Components.

**6.1.1 IATF Requirement**

Supplier shall have documented quality systems as per IATF requirements. As NEIL initiative, NEIL may demand its supplier quality management system up-gradation from ISO: 9001 to IATF 16949:2016.

- All 10 clauses are to be implemented.
- Automotive approach
- Product safety
- Risk Management
- Continual improvements
- Competency

etc. are few major points to be focused during transition phase.



## 6.2 Resource Management

Supplier is expected to optimal utilization of resources in effective and efficient way like manpower, financial, goods, equipments. Supplier shall establish well defined procedure for resource management. It shall include -

1. Preservation and conservation of natural resources like water, electricity etc.
2. Well trained and qualified personnel.
3. Well defined training procedure including On Job Training.

## 6.3 Material and Process Specifications

Supplier must produce NEIL products of the specified material and to the process specifications. The understanding shall be based on NEIL approved drawings or standards.

Any deviation from the required specifications is not acceptable otherwise/unless there is no written approval from NEIL.

## 6.4 Commercial Requirements

At the end of every month, suppliers have to furnish the loan amount statement giving details of balance material in hand. In case of any shortfall in the loan A/C, the material cost and processing cost incurred by NEIL thereon, shall be debited to suppliers and will be recovered from the supplier's account. Further, NEILS Audit team will conduct periodic physical verification of stock sent on loan at supplier premises.

## 6.5 Laboratory Requirements

### Internal Laboratory: -

There shall be a defined and systematic Laboratory Scope for the laboratory that includes its capability to perform the required inspection, test or calibration services and they must be traceable up to NABL (National Accreditation Board for Laboratories).

This laboratory scope shall be included in the quality system documentation. Accreditation to ISO/IEC 17025 is recommended for internal laboratories but not mandatory. The laboratory shall specify and implement, as a minimum, technical requirements for -

- Adequacy of the laboratory procedures
- Competency of laboratory personnel
- Testing procedures of products

### External Laboratory: -

- There shall be a defined and systematic Laboratory Scope for the laboratory that includes its capability to perform the required inspection, test or calibration services.
- The laboratory shall be accredited to ISO/IEC 17025 or NABL (National Accreditation Board for Laboratories).



## 6.6 Statutory and Legal Requirements

Suppliers must ensure that following requirements, whichever applicable, are being fulfilled at their end -

- Valid consent to operate (CTO) from State Pollution Control Board.
- Meet all requirements of 'The Factory act – 1948'.
- System for receipt, storage, handling and disposal of hazardous materials.
- Display of 6'X4' board containing information for hazardous materials at main gate.
- Complying with the requirements of 'Central Motor Vehicle Rules – 1989', pertaining to the transportation of hazardous materials.
- Supplier must abide by the GST rules and regulations, and maintain the necessary records as per GST rules. Supplier shall comply the documentation requirement for issue and supply of materials as per GST rule “Job Work Under GST”.
- Job workers are required to return “Goods” within 1 Year from date of challan and comply with provision of E-way Bill.
- Violation and non compliance shall be supplier's responsibility and any liability arising thereof shall be to supplier's account.
- Supplier must cover all ESI, EPF etc. as required under law and applicable under statutory conditions of supplies and government law, as may be in force from time to time.
- Procure Mineral from Conflict free sources: Suppliers shall not procure material from any sources which are prohibited as per law of land.
- Fair Competition: supplier shall desist from any unfair or anti – competitive trade practices like Cartel etc and report the same to NEIL in event of any such situation.
- Conflict of interest: Suppliers must avoid any conflict of interest between them and the company or its officials dealing with the suppliers.
- Human Rights: NEIL is committed to respecting Human Rights of all its stake holders and further expects the same from all of its suppliers in true letter and spirit. Suppliers shall not employ Child labour, forced labour or indulge in any form of human trafficking.
- Diversity and inclusion: NEIL encourages diversity and inclusion and also wishes to be associated with the suppliers who adhered to the same and do not discriminate basis race, colour, religion, caste, or any other classification prohibited by law.



- Confidential information : Supplier including its representative if any while working with or dealing with NEIL may have access to confidential know how of NEIL, would not share the same or be known to competitors of NEIL or any other person or Corporate. NEIL shall be at liberty to take action against supplier as a result of any such breach.
- Third party representation : the supplier shall not be authorised to use NEIL brand or represent as NEIL associate without prior written permission from NEIL
- INTELLECTUAL PROPERTY (The supplier shall not infringe NEIL confidential and proprietary information / technology which comes to its knowledge during course of business), Supplier shall also not supply any material to NEIL which violates any other entity Trade Mark or licences.
- Ensure adherence to compliance as specified under plastic waste (Management & Handling) rules.
- Supplier will ensure compliance to all other applicable acts, laws & by Laws not Listed above.

#### **6.6.1 CTO/ CTE requirements**

Supplier shall ensure the Consent to Established (CTE) & Consent to Operate (CTO) certification from Local Government Authority. NEIL may demand this certificate if its customer demands.

#### **6.7 Health and Safety Requirements**

Supplier shall adhere to following health and safety requirements:

- Design of manufacturing process shall be such that it has minimum potential risks to employees.
- Use of PPE (Personal Protective Equipments) like helmets, goggles, safety shoes.
- Ensure availability of Emergency exits, Emergency hooters and Fire extinguishers etc.
- Ensure safe and sound working environment in factory premises.

##### **6.7.1 Safety Preparedness (Fire Risk Assessment)**

Suppliers shall ensure his plant self Assessment on Fire Risk by his own to have prevented, detect of potential risks to the safety of all employees & assets. NEIL has the authority to audit suppliers on Fire Risk Safety Preparedness at any time.

#### **6.8 Control of Sub-suppliers**

Suppliers shall have effective controls and monitoring over their sub-suppliers. Suppliers have the responsibility for managing all Process and Process Approval for their Sub -suppliers.

Also Supplier has to conduct regular Audits at certain frequency in order to improve & develop their Sub-supplier & to meet the Quality objectives of complete Supply Chain.



**In any case, Supplier have the full responsibility for Quality Assurance for their Sub-suppliers.**

NEIL and its customers reserve the right to directly onsite assess sub-supplier's processes.

### **6.9 Control of Special Characteristics**

Suppliers shall identify special characteristics specified in NEIL drawing. If not provided in drawing, it is the sole responsibility of supplier to identify these characteristics as per **Annexure-1**.

These characteristics have to be incorporated in PFD, Control Plan and PFMEA and action plans to be decided for the same.

**Suppliers must have to achieve more than 1.33Cpk, in case of not achieved put Poka-Yoke or 100% Inspection for Special Characteristic.**

### **6.10 Control of Special Processes**

Supplier shall establish a documented system to control 'Special Processes' like heat treatment, casting, forging, bonding, phosphating, protective coatings and welding etc.

Where outsourced processes are used, the supplier must retain full responsibility for ensuring that the work performed meets all specified quality requirements.

### **6.11 Internal Auditing**

Supplier shall conduct internal audits at planned intervals to determine effectiveness of Quality Management System. Records of the audits and their observations with actions shall be maintained. Internal audits shall cover Quality Management System Audit, Process Audit and Product Audits. Internal audits shall cover all processes, activities and shifts, Products and shall be scheduled according to an Annual Plan.

### **6.12 Record Retention**

Suppliers shall maintain all quality records for minimum of Three years unless otherwise specified in NEIL SQM and agreed to NEIL. These records shall be stored in an environment that doesn't allow document deterioration and are readily accessible upon request by NEIL representative.

It is also expected that the supply chain records pertaining to NEIL products shall be retained in the same manner.

### **6.13 Change Management**

Supplier shall ensure effective system for change management. Once a part is approved, request for changes in sub supplier, location, method, process, 4M (**Annexure-13**), delivery method & packaging etc. that may affect fit, form or function of parts shall be recorded and informed to NEIL SID or Logistics or both according to the 4-M Change Notification. NEIL holds the right to hold or reject the material if this process found to be skipped.

Suppliers must also make sure for their own entire supply chain. The supplier will need to notify the change and ultimately NEIL SDD will determine if a PPAP (as per **Annexure-2**) is required.

Changes shall not be implemented prior to the receipt of written approval from NEIL.

**VERBAL REQUESTS WILL NOT BE ACCEPTED.**



#### **6.14 Material and Process/ Product Deviation**

A Supplier shall not knowingly ship products that deviate from the drawing, specification limits or Design intent without prior written authorization from the NEIL SID. If such a condition exists, the Supplier may petition the NEIL SID, in writing, to allow shipment of the product under a written nonconformance deviation.

The written request shall be submitted through NEIL SID along with following information –

- Part Number and latest engineering change Note
- Quantity of parts affected
- Specifications involved
- Statistical analysis of the non-confirming characteristic(s), as applicable
- A statement of the requested deviation
- The containment plan to be implemented
- Corrective / Preventive action (as per **Annexure-3**) to be taken along with the timeline for implementation.

If requested by the NEIL SID, the Supplier must send samples of such nonconforming items to NEIL for evaluation. The cost of shipping, inspection, and testing to determine the potential acceptability of such product will be charged to the Supplier.

#### **6.15 Layout Inspection**

Supplier shall submit layout inspection report (as per **Annexure-4**) covering all the dimensions and specifications declared in NEIL drawing -

- While submitting samples (for Measurement Alignment)
- While submitting PPAP lot
- When there is any change in material, machine, method or location (as per NEIL demand)
- As and when required by NEIL or its customers

#### **6.16 Handling, Preservation, Storage and Inventory**

NEIL requires that all material shall be clean and free from any kind of contamination including chips / debris etc. Supplier shall arrange such kind of arrangement that no material is placed on shop floor directly. Supplier shall ensure rust, dust, dirt and damage free preservation and storage of parts.

Supplier shall preserve the material at all stages of process in such a way that material does not get affected by atmospheric conditions or any other reasons for deteriorating the quality of the material or product.

Supplier shall ensure the Inventory level as per the guidance of NEIL Purchase Department and also First In First Out (FIFO) throughout the whole process.

#### **6.17 Identification and Traceability**

Product traceability is NEIL and its customer's requirement. Suppliers shall have to introduce an effective system to incorporate identification and traceability in their system along with a documented procedure. Suppliers must provide unique identification of product batches / lots or individual component / parts as required. The components should be traceable up to the raw material.



## 7. NEIL Specific Requirements for Supplier Selection, Approval and Monitoring Process

### 7.1 New Supplier Selection Criteria

A new supplier interested in NEIL business must pass through following criteria: -

1. ISO 9001:2015 registration
2. Spare capacity or plan to enhance the same
3. Fulfillment of govt. regulation
4. Production & Inspection Facilities

### 7.2 Supplier Self Evaluation

Once a supplier passes above mentioned criteria, it will be provided a 'Self Evaluation Form' (as per **Annexure-5**) to submit it to NEIL SDD after completely **filling** it with essential supportive documents. Supplier has to fill all the details and sign the document.

Existing suppliers will be provided the Self Evaluation Form at the time of re-approval audit.

### 7.3 Onsite Supplier Assessment Audit

When a supplier submits SEF along with supportive documents, NEIL SDD, Logistics & Finance department will study the same and decides for Onsite Assessment Audit, if found suitable.

This Audit will be conducted by NEIL SDD, Logistics and other deptt. (if required).

The major focus areas are:

- **Quality**
- **Capacity**
- **Delivery**
- **Compliance (Legal , Finance , Environment & Safety etc.)**

The assessment will be conducted by NEIL representative(s) and will verify the existence of a Quality Management System and the disciplines necessary to meet standard and NEIL requirements (as per **Annexure-6**).

At the same time specific Process Audit and Supplier Risk Assessment (as per **Annexure-7**) will also be done by NEIL audit team. Supplier has to submit the action plan for each No-conformity raised during Audits and close the same within the agreed (between NEIL & Supplier) specified time with appropriate evidences.

If the Supplier falls in "A" or "B" Category in Supplier Assessment, Process Audit and also working at "Low Risk" level , the Supplier will be considered as "Accepted" Supplier.

Once the Supplier is "Accepted", Supplier has to take PPAP (as per **Annexure-2**) approval as per the guidance of NEIL SDD & Logistics. If the PPAP approval done by NEIL, then only the Supplier will be declared as "Approved Supplier" for next 3 years.

"C" Category Supplier will be Re-audited after 6 months (after improvements done by Supplier).

"D" Category Supplier will not be entertained again within next 2 years.



NEIL reserves the right to re-assess current suppliers prior to placement of new business, as a result of a supplier's quality performance, when there is a change in the supplier's facility, a change in ownership, a significant change in the nature of the product previously supplied.

In case of customer approved or recommended suppliers, initial Supplier Approval Process will not be followed, but other Supplier related activities will be done same as per NEIL Supplier Development & Appraisal procedure. In this case information related to Supplier performance will be shared with Customer (as per demand) and final decision will be taken by Customer.

#### 7.4 Contingency Plan & Risk Assessment

Supplier shall develop a contingency plan for potential catastrophes disrupting deliveries to NEIL, and inform NEIL immediately (on the same day) in the event of an actual disaster.

Contingency plan shall be made available to NEIL (as per **Annexure-7**).

Supplier has to assess & make contingency plan on the following Risk –

- Capacity (Spare Capacity, Key Machine & Equipment Failure, Labor Shortage & Labor strike, Utility Interruptions etc.)
- Capability
- Legal , Financial & Costing
- Logistics
- Natural Disaster etc.

#### 7.5 Initial Product Control (IPC)

Supplier shall have an effective system to ensure control over initial supplies of a new development. Supplier shall identify first three lots of supplies with a tag or marking highlighting the parts under IPC.

Lots under IPC shall be submitted with layout inspection report or Process Capability report suggested by NEIL SDD.

If the NEIL product Quality requirement (refer layout inspection report or Process Capability report) does not meet then number of lots for IPC can be increased.

#### 7.6 Annual Surveillance Process Audit

Once a supplier qualifies NEIL assessment process and listed in Approved Supplier List, Supplier is liable to annual surveillance audits conducted as per below mentioned categories based on previous Financial year Supplier Quality Rating by NEIL SQA team:-

'A' Category Suppliers	Once in a year
'B' Category Suppliers	Twice in a year
'C' Category Suppliers	Thrice in a year

Supplier has to submit the action plan for each Non-conformity raised during Audit and close the same within the agreed (between NEIL & Supplier) specified time with appropriate evidences.

**NEIL & its Customer reserves the Right to conduct the Audit with or without prior information to the Supplier at any point of time and it is Supplier's responsibility to co-operate in whole audit with positive manner.**



## 7.7 Anti Rust Application

NEIL requires that finish turned, stamped and ground parts shall be 100% oiled in all seasons. HP Rustop-173 shall be applied on finish turned parts, HP Rustop-275 shall be applied on finish ground & stamped parts and use of greasing on axle box family shall be as per NEIL recommendations. Supplier has to take written approval from NEIL for any change in oil used. Dip oiling methodology to be followed for all kind of oiling processes. Drawing and / or Purchase Order requirements may apply as and when required.

## 7.8 Verification of Purchased Parts

NEIL or its customers reserve the Right to verify the process and product at Supplier's and Sub-supplier's manufacturing facilities directly with or without prior information. Suppliers must allow on-site product or process verification by NEIL or its customers.

## 7.9 Control of NC Parts and Supplier Corrective Action Report

The organization shall have processes and systems in place to prevent shipment of non-conforming products to NEIL facilities. For non-conforming products supplied to NEIL, including those that reached at NEIL's customer, the Supplier must cover all costs to correct the non-conformance.

If product is found to be non-conforming at NEIL as Lot or Line Rejection / Customer / Warranty complaints, the supplier is expected to provide the resources necessary to contain, evaluate, sort and / or scrap the non-conforming product.

In the event of a quality issue related to a supplier's products, the supplier will be required to provide a written corrective action report in the SCAR (**Annexure-3**) format within 7 (seven) days.

A Non-Conformance Report in Supplier Corrective Action Report (SCAR) format shall be issued to the supplier when NEIL detects non-conforming product. The supplier's initial response including containment plan, shall be provided to NEIL SQA team within 24 hours (one working day) from the date, the supplier receives notification of the non-conformance.

The SCAR will be sent to supplier through e-mail.

NEIL and the supplier shall determine if the product can be inspected to remove defects from the "lot" that has been contained. It will be determined whether product is sorted on site or returned to the supplier. If it is determined that inspection alone cannot detect the defect, the product will be returned to the supplier or scrapped as agreed.

If the product is needed for urgent production at NEIL, the supplier shall send his Inspection Team to NEIL for inspection, or agree to the use of a third party inspection with the cost of inspection borne by the supplier.

A written corrective and preventive action in SCAR must be sent to the NEIL SQA team within 7(seven) days.

Supplier shall implement all the action written in SCAR within the specified time at their end and regularly monitor the effectiveness for the same.

**NEIL or its customers reserve the Right to check and verify at Supplier end the implementation and effectiveness of the action taken against any Quality issue raised in past at any point of time with or without prior information.**



## 7.10 Controlled Shipping

Controlled shipping is a demand of NEIL SQA team, that a supplier put in place a redundant inspection process at the supplying location to 100% sort for a specific and specified non-conformance to isolate NEIL from receipt of non-conforming parts / materials. The redundant inspection must be in addition to the normal process controls. Implementation criteria for controlled shipping -

- Repetitive Issue
- Supplier's current controls are not sufficient to ensure conformance to requirements
- Major disruptions
- Quality concern at OEM and / or in the field

Exit criteria for controlled shipping:

- Three batches or Thirty consecutive days (Whichever is longer) of data (from implementation of corrective action) which verifies that the normal production controls are effective for controlling the discrepancy identified in the controlled shipping activity.

Volume to be determined by NEIL SQA team where suppliers use batch processes.

Supplier to submit the following documents to NEIL SQA team –

- Documentation showing root cause was identified and validated.
- Documentation indicating that corrective action was implemented and validated.
- Copies of all documentation revised as required (Control Plan, PFMEA, operator instructions etc.).
- Documentation indicating that production is as per specification for three batches or thirty consecutive days.

NEIL SQA team approval must be given prior to supplier stopping controlled shipping. An audit by NEIL SQA team may be required prior to approval.

## 7.11 Supplier Evaluation and Supplier Performance Rating (SPR)

Suppliers will be monitored on monthly basis to assess their performance by evaluating SPR (Supplier Performance Rating) taking Quality and Delivery aspects in to consideration as per below formula -

$$SPR = (0.75 \times QR) + (0.20 \times DR) + (0.05 \times CR)$$

QR (Quality Rating) Weightage - 75%

DR (Delivery Rating) Weightage - 20%

CR (Cost Rating) Weightage - 05%

On the basis of above Rating (Detailed criteria is explained in **Annexure-1**) Suppliers are Categorized in "A", "B" & "C" categories. Supplier will get the feedback from NEIL SQA team on time to time for their further improvements in the form of Supplier Rating Score Card (as per **Annexure-8**).

- Supplier has to sign off quality agreement (**Annexure-14**) on yearly basis, based on previous year's rejection PPM as part of Continuous improvement.

## 7.12 Direct on Line (DOL) Implementation

NEIL always encourages their Suppliers to get DOL (Direct On Line) Certificate from NEIL. DOL parts will be validated as per NEIL DOL procedure. Once a supplier is chosen by NEIL for DOL program, supplier shall actively participate in program to achieve decided goals and targets (explained to the Supplier in program as per NEI DOL requirements) for proper understanding.



### **7.13 Low Performing Suppliers**

NEIL regularly monitors the performance of its suppliers with the methodology of Supplier Performance Rating formulation. Suppliers continuously poor performing will be considered as Low Performing Suppliers.

Low Performing Suppliers shall have to submit a detailed action plan to improve their performance to NEIL SQA team. Failure to meet or act upon NEIL requirements may result in the loss of existing and/or future NEIL business.

### **7.14 Prevention of Restricted Substances and Materials**

Prohibited and restricted materials according to IMDS (International Material Data Sheet) must not be used by the Suppliers. All components and contained substances must be declared in the IMDS system, if required by NEIL or its customers.

Suppliers shall comply with List of Prohibited and Declarable Substances as per Std. No. RMSD00169549 (**Annexure-9**) for hazardous material usage and disposition.

#### **7.14.1 List of additional Hazardous material (Prohibited Substance) other than mentioned in NEIL Supplier Quality Manual edition-4 (Annexure - 9)**

Suppliers shall ensure to take care of listed Hazardous material (Prohibited Substance) not to be used in entire Supply Chain mentioned in NEIL Supplier Quality Manual **edition-4 (Annexure - 9)**

Whenever any revision or amendment will be done in supplier quality manual, e-mail will be sent to all suppliers to check the amendment on NEIL's website i.e. [www.nbcbearings.com](http://www.nbcbearings.com)

### **7.15 NEIL Supplied Property**

All tools, gauges, patterns, fixtures, machines, test or inspection equipment belonging to NEIL, or their customers, will be permanently marked to clearly show that they are Property of NEIL (ISO:9001 Clause 8.2.1/IATF 16949 Clause 8.5.4.1), or the customer. Supplier is responsible for maintenance of all equipments paid for or supplied by NEIL.

When equipment not used in production must be kept in a fireproof location and stored separately from production.

Measuring equipment supplied by NEIL must be included in the suppliers own calibration system.

When the agreement and the manufacturing expire, if nothing else agreed, the equipment must be returned to NEIL. The supplier doesn't have the right to scrap equipment without NEIL's permission. If required by NEIL, the equipment shall be made available for inspection.

### **7.16 NEIL'S Customer Specific requirement**

Any specific requirement of NEIL's customer given for Tier-2 suppliers shall be implemented by suppliers.



## 8. Advanced Product Quality Planning (APQP)

The goal of APQP is to explain and monitor the development process of any product with NEIL & suppliers.

This applies to all suppliers manufacturing NEIL parts/products and has to be submitted to NEIL on demand.

The purpose of APQP timing plan or Product Development Plan (as per **Annexure-10**) is to provide a schedule of the manufacturing and control activities necessary to assure the quality of parts during PPAP lot production.

Suppliers are required to prepare the timing plan at the time of New Product Development. The schedule should span the time between the issuance of the production drawing and PPAP approval.

### Supplier Responsibility

- The supplier should create, maintain and submit an APQP timing plan (as per **Annexure-10**) and Part Feasibility Report (as per **Annexure-11**) before start of the part development.
- The timing of the various activities of the timing chart at supplier end must meet NEIL's requirements.
- All the related departments within the supplier must have consensus on the timing plan before submission to NEIL SDD team. In addition, the supplier's top management is responsible for monitoring this plan to achieve milestones as scheduled.
- NEIL SDD team will review and confirm the supplier's activities.  
Request for any adjustments will be negotiated between the supplier and NEIL SDD team.
- The supplier must review the timing plan status periodically and any revision must be intimated to NEIL SDD team. The supplier must re-submit the updated timing plan in consultation with NEIL SDD team.

## 9. Failure Mode Effect Analysis (FMEA) and Control Plan (CP)

### FMEA -

Suppliers with product design responsibility shall develop a Design FMEA in accordance with, NEIL-specified requirements. A single Design FMEA may be applied to a family of similar parts or materials.

Suppliers shall develop a Process FMEA in accordance with, NEIL-specified requirements. A single Process FMEA may be applied to a process manufacturing a family of similar parts or materials.

**Supplier shall follow the latest edition of FMEA (DFMEA & PFMEA) of "AIAG Reference Manual" and PFMEA ranking table as per (Annexure-15)**

### Control Plan -

The Supplier shall have a Control Plan that takes into account the output from the FMEA and defines all methods used for process monitoring and control of special product/process characteristics. A single control plan may apply to a group or family of products that are produced by the same process.

**Note :** NEIL may demand part specific FMEA and Control Plan as and when required.

**Supplier shall follow the latest edition of Control Plan of "AIAG Reference Manual".**



## 10. Statistical Process Control and Measurement System Analysis

Supplier shall identify special characteristics (critical and safety) from NEIL drawing or (as per **Annexure1**) and include these characteristics in FMEA and Control Plan by marking in relevant column.

Supplier shall Perform Process Capability studies for all special characteristics and measurement system analysis for all instruments and gauges used in inspection. Suppliers will submit these studies to NEIL on regular basis.

**NEIL expects its suppliers to work with more than 1.33Cpk and less than 10% GRR for special characteristics.**

## 11. Production Part Approval Process (PPAP)

A PPAP (as per **Annexure-2**) is required for each product or product family intended to be supplied first time to NEIL. PPAPs may also be necessary if there are any changes that affect the product. The supplier will need to notify the change and ultimately NEIL SDD will determine if a PPAP is required. Typical changes include material, product & equipment (eg. SPM to CNC or manual to transfer line), facility, supplier or location changes just to name a few.

### Production Test Run (Run at Rate)

NEIL and its Customers reserve the right to witness or attend a full production test run (PPAP batch run). The Production Test Run is conducted to assure the capability and capacity of the specific production line. The scope and extent of the Production Test Run is decided for each specific case.

Level 3 PPAP (as per latest edition of AIAG reference manual) is required for all submissions. PPAPs are to be submitted directly to the NEIL SDD (as per **Annexure-2**).

## 12. Continuous Improvement

The supplier shall promote and implement a continuous improvement philosophy applying proven methodologies and processes. These methods and processes shall be used throughout the supplier organization to continually improve the quality, delivery & cost of products and service of supplier.

Continuous improvements are viewed as an essential aspect of maintaining a competitive position for both the supplier and NEIL. The supplier shall endeavor to provide continuous improvement suggestions to NEIL.

## 13. Packaging Requirements

### a. Purpose

The Packaging is an important aspect of overall quality of the Product. To achieve this, NEIL has drafted all packaging requirements in this manual.

### b. Scope

This packaging guideline is the contractual basis for delivery of parts to NEIL. It constitutes a supplement to the general conditions of "Purchase Order". This guideline applies to all "Direct Materials" shipped to NEIL including mass production parts.

Note: - For parts with large dimensions or unusual geometries, special packaging must be used (especially for Railway and Large Diameter Bearing components).



**c. Objective**

Its aim at developing a rationalized packaging system based on the safe and continuous flow of material from the supplier to the work place, taking all qualitative, environmental and economic aspects into consideration.

The goal of the packaging system is based on the criteria of Flexibility, Lowest Cost, Protection of Goods and Safe Delivery.

**d. Supplier's Responsibilities**

The supplier is responsible for the development of a “fit-for-purpose” packaging systems which are in accordance with the requirements of product.

It is the responsibility of suppliers to design and develop packaging to withstand the given transportation mode. NEIL may assist with the design, however, accepts no responsibility for non-performance. Once the packaging method has been approved, the supplier can not change it without prior written approval from NEIL.

The supplier is expected to identify and eliminate wasteful packaging practices on an ongoing basis. With reduction or elimination as the first priority, the hierarchy of waste elimination is -

**REDUCE**

**REUSE**

**RECYCLE**

Parts must arrive at NEIL without Damage, Rust / Corrosion, or Contamination.

**e. Packaging Agreement**

Packaging related requirements and discussions shall begin during APQP activities. All requirements shall be finalized prior to PPAP submission.

On the basis of the packaging guideline, the supplier draws up a packaging proposal and forwards it to NEIL. If the supplier already has an existing packaging procedure document, the same can be forwarded.

Current suppliers of current material should continue to supply the material as long as they minimally meet the intent of this document.

**f. Packed Quantity**

Standard packaging quantities shall be based on ergonomic standards. It is the supplier's responsibility to determine the packaged quantities.

Packed Weight: - Weight limit per carton (including contents) for incoming materials to be handled manually must not exceed 20 Kg. Exceptions must be approved by NEIL.

**g. Anti-Corrosive Packaging**

All machined, bright finished or other critical surfaces that are sensitive to corrosion require sufficient corrosion protection. In particular, casting, forging, semi finished parts such as races & rollers, complete finish parts such as cages / retainers, rollers etc. are highly sensitive to corrosion and require special protection.

Use anti-corrosive packaging to protect parts from corrosion, dust, moisture, abrasion or any other damage that is detrimental to the appearance or function of the part.



Wherever applicable, suppliers are recommended to use VCI materials, such as VCI film or VCI paper. Oil or waxed paper may be used whenever the use of VCI materials is not appropriate.

Before delivery, consignment should be examined to ensure that all parts are properly preserved, wrapped, covered or sealed and packed. Any damaged consignment must be replaced.

Parts that are susceptible to corrosion must be packed in a dry noncorrosive environment for the duration of shipment and storage, for a minimum of 6 months.

#### **h. Labeling and Identification**

Documentation for each shipment is the responsibility of the supplier and shall be complete and legible. The supplier is to provide all necessary customs and other documents such as **Bill, Dimensional & Metallurgical Inspection report etc.**

Incoming material shall be identified by the supplier with a non-handwritten, identification label. Provision shall be made on the package system for the material identification and its contents.

### **14. NEIL's Supplier Termination Policy**

In case supplier underperforms stated guidelines to be followed.

Supplier supplies will be stopped to NEIL, when it is evident that any of the below stated conditions holds true after allowing reasonable time for improvement.

1. Supplier falls in "C" Category for continuous 6 months.
2. Supplier does not take measures in subsequent batches of parts to reduce the non conformity at Receiving / Shop / Customer end as per agreed specific action plan between SID & Supplier.
3. Supplier does not respond timely for segregating the NG parts at NEIL / Transit / Supplier end.
4. Supplier has sublet the Critical & Final operation to other supplier without written consent of NEIL.
  - In case alternate supplier with spare capacity is available,
  - Reduce SOB with existing supplier and give 25% SOB to new supplier in 2nd month if no improvement seen in 1<sup>st</sup> month from existing supplier.
  - Monitor performance of both the suppliers.
  - If existing supplier is improving retain SOB, after monitoring 2<sup>nd</sup> & 3<sup>rd</sup> month's performance.
  - If existing supplier is deteriorating consecutively in 2<sup>nd</sup> & 3<sup>rd</sup> month SOB should be tapered down to Zero in 4 months.
  - For single source poor performing supplier, alternate capable supplier to be developed by SDD & Logistics on fast track before stopping the supplies.

(Time period will depend on criticality of items)

In order to improve the performance, specific training to be provided to the supplier through SDD, action plan to be taken from the supplier.



## Annexure – 1

### 1. CALCULATION OF SUPPLIER PERFORMANCE RATING

1.1 Two factors - Delivery & Quality , are to be taken into account for Supplier performance rating. Respective weightages are as follows :-

Weightage for Delivery (Wd)	20%
Weightage for Cost(Wc)	5%
Weightage for Quality (Wq)	75%

#### 1.2 Evaluation

Each supplier is evaluated in terms of above factors in the following manner :

##### 1.2.1 Delivery Rating (DR) is calculated as:

$$\text{Delivery Performance Rating (DPR)} = \frac{\text{Total quantity received}}{\text{Total quantity scheduled}} \times 100$$

$$\text{Premium Freight Rating (PFR)} = 2\% \text{ per incident}$$

$$\text{DELIVERY RATING (DR)} = \text{DPR} - \text{PFR}$$

- \* Delivery rating is calculated based on mutually agreed lead time with supplier.
- \* Improvement plan with respect to Delivery Rating (DR) is made & monitored by Respective Logistics.

##### 1.2.2 Cost Rating (CR) is calculated as:

<b>Cost</b>	3% or greater cost reduction	5
	2% - 2.9% cost reduction	4
	1% - 1.9% cost reduction	3
	No cost reduction	2
	Force Price increase	-2

\*Improvement plan with respect to Cost Rating (CR) is made & monitored by Respective Logistics.

##### 1.2.3 Quality Rating (QR) is calculated as:

- 1) Input Material Quality (QA) Weightage 55% of QR
- No. of Lot Accepted
- a) Inspection Rating (QA1) =  $\frac{\text{-----}}{\text{Total No. of Lot Inspected}} \times 100$  ( weightage 25% of QR)
- b) NEIL Shop Complaint Rating (QA2) = 10, if shop complaint = 0 ( weightage 10% of QR)  
5, if shop complaint = 1  
3, if shop complaint = 2  
0, if shop complaint > 2
- c) NEIL Line Rejection Rating ( QA3) = 10 if Line Rejection PPM < 51 PPM ( weightage 10% of QR)  
8 if 50 PPM < Line Rejection PPM < 101 PPM  
6 if 100 PPM < Line Rejection PPM < 201 PPM  
4 if 200 PPM < Line Rejection PPM < 301 PPM  
0 if 300 PPM < Line Rejection PPM
- d) Customer Line Rejection Rating ( QA4 ) = 0 , if any issue reported from Customer ( weightage 10% of QR)  
10 , if no issue reported from Customer



$$\text{Input Material Quality ( QA )} = \text{QA1} + \text{QA2} + \text{QA3} + \text{QA4}$$

## 2) Resolution Response (QB)

Weightage 15% of QR

a) Timely Response Rating (QB1) = 5, if No Line stoppage because of quality issue (weightage 5% of QR)

– Interim action within 24 hrs.

0, if Line stoppage because of quality issue

b) Timely SCAR Submission Rating (QB2) = 5, if SCAR(8D) response within 7 days (weightage 5% of QR)

3, if SCAR(8D) response within 14 days

0, if SCAR(8D) response after 14 days

c) Reoccurrence of issue Rating (QB3) = 0, if issue reoccurred within 3 months (weightage 5% of QR)

5, if issue does not re occurred in 3 months

$$\text{Resolution Response (QB)} = \text{QB1} + \text{QB2} + \text{QB3}$$

## 3) Process Capability (QC)

(Weightage 5% of QR)

Process capability Rating (QC) = 0, if Cpk < 1.33

2, if 1.33 ≤ Cpk < 1.67

5, if Cpk ≥ 1.67

## 4) Internal Rejection (QD)

(Weightage 5% of QR)

Internal Rejection Rating = 5, if current month Internal rejection PPM < Last 3 month Average Internal Rejection PPM  
OR Internal rejection < 1000 PPM

3, if current month internal rejection < Last month Internal Rejection

0, if current month rejection > Last 3 month average rejection PPM

## 5) 4M Change notification (QE)

(Weightage 5% of QR)

4M Change notification Rating = 0, if 4M change monthly notification is not submitted.

5, if 4M change monthly notification is submitted with evidence

## 6) Measurement Capability (QF)

(Weightage 5% of QR)

Measurement Capability Rating = 0, if defined machine as per supplier product category is not available with supplier

5, if defined machine as per supplier product category is available with supplier

## 7) Supplier Audit Score (QG)

(Weightage 8% of QR)

Supplier audit score rating = Supplier audit score in last year/100\*8

## 8) Supplier Involvement through Kaizen (QH)

(Weightage 2% of QR)

Supplier involvement through Kaizen rating = 2, if 2 kaizen are submitted

1, if 1 kaizen is submitted

0, if no kaizen is submitted.

$$\text{QUALITY RATING (QR)} = \text{QA} + \text{QB} + \text{QC} + \text{QD} + \text{QE} + \text{QF} + \text{QG} + \text{QH}$$

### 1.2.4 Metallurgical Quality Rating (MQR) is calculated as below for the supplier defined in clause 3.5

a) For the supplier related to forging, casting, turning, roller and ball defined in clause 3.5



MQR (Quality Rating) = MQA + MQB +MQC + MQD + MQE + MQF + MQG + MQH				Rating	Weightage
MQA (Input Material Quality)	NQA1	Inspection Rating	= No. of lots accepted / Total no. of lots received *100	25	25
	NQA2	NEIL shop complaint rating	"0" Complaint	15	15
			"1" Complaint	12	
			"2" Complaint	10	
			"3" Complaint	5	
			more than 3 Complaint	0	
	NQA3	Line rejection PPM rating	"0~10" PPM of total Qty	10	10
			"11~50" PPM of total Qty	8	
			"51~100" PPM of total Qty	6	
			"101~200" PPM of total Qty	4	
more than 200 PPM of total Qty			0		
MQB (NEIL line stopage )	NEIL line stopage rating (as per annexure 2.B)		No NEIL line stopage because of Quality issue	10	10
			NEIL Line stopage because of Quality issue	0	
MQC (Customer Complaint)	Customer complaint Rating		No customer complaint	10	10
			Customer complaint	0	
MQD (Issue resolution response)	NQD1	SCAR quality and timely submission rating	SCAR (8D) Response within 7 days	5	5
			SCAR (8D) Response within 14 days	3	
			SCAR (8D) Response after 14 days	0	
	NQD2	Reoccurrence of issues	If issue not reoccurred within 3 months	5	5
If issue reoccurred within 3 months			0		
MQE (Change Management)	Change management rating (As per annexure 2.D)		4M Change monthly notification submitted with evidence	5	5
			4M Change monthly notification not submitted	0	
MQF (Measurment Capability)	Measurment capability rating (As per annexure 2.F)		Advanced measurment capability	5	5
			Measurment capability minimum bare requirement is there	3	
			Measurment capability minimum bare requirement is not there	0	
MQG (Supplier Audit Score )	Ref previous audit score		= Supplier Audit Score /20	5	5
MQH (Quality issue at supplier end)	Quality issue at supplier end - Rating		if no issue at supplier end	5	5
			if any issue reported at supplier end	0	

b) For the supplier related to raw material (e.g. Bar, tube, wire rod, etc) defined in clause 3.5

MQR (Quality Rating) = MQA + MQB +MQC + MQD + MQE + MQF + MQG				Rating	Weightage
MQA (Input Material Quality)	NQA1	Inspection Rating	= No. of lots accepted / Total no. of lots received *100	25	25
	NQA2	NEIL shop complaint rating	"0" Complaint	25	25
			"1" Complaint	15	
			"2" Complaint	5	
			more than 2 Complaint	0	
MQB (NEIL line stopage )	NEIL line stopage rating (as per annexure 2.B)		No NEIL line stopage because of Quality issue	10	10
			NEIL Line stopage because of Quality issue	0	
MQC (Customer Complaint)	Customer complaint Rating		No customer complaint	15	15
			Customer complaint	0	
MQD (Issue resolution response)	NQD1	SCAR quality and timely submission rating	SCAR (8D) Response within 7 days	5	5
			SCAR (8D) Response within 14 days	3	
			SCAR (8D) Response after 14 days	0	
	NQD2	Reoccurrence of issues	If issue not reoccurred within 3 months	5	5
If issue reoccurred within 3 months			0		
MQE (Change Management)	Change management rating (As per annexure 2.D)		4M Change monthly notification submitted with evidence	5	5
			4M Change monthly notification not submitted	0	
MQF (Measurment Capability)	Measurment capability rating (As per annexure 2.F)		Advanced measurment capability	5	5
			Measurment capability minimum bare requirement is there	3	
			Measurment capability minimum bare requirement is not there	0	
MQG (Supplier Audit Score )	Ref previous audit score		= Supplier Audit Score /20	5	5

Note : Quality rating will be maintained in separate spread sheet at Met. Lab.



## 2. SUPPLIER RATING :-

Supplier Rating is calculated as follows :

$$\text{SUPPLIER RATING (SR)} = (\text{Delivery Rating(DR)} \times \text{Wd}) + (\text{Cost Rating(CR)}) + (\text{Quality Rating(QR)} \times \text{Wq})$$

## 3. CLASSIFICATION OF SUPPLIERS :-

a) On the basis of QR the suppliers are classified as below :

Rating Obtained	Rating
Above 80%	A
61% ~ 80%	B
<61%	C

b) On the basis of above Supplier Rating (SR), the suppliers are classified as below :

Rating Obtained	Rating
Above 80%	A
61% ~ 80%	B
<61%	C

c) On the basis of above Delivery rating (DR), the suppliers are classified as below :

Rating Obtained	Rating
Above 94%	A
85% ~ 94%	B
<85%	C



### Annexure – 1.A

- (1) If process capability value submitted for more than one parameter the least of all will be considered.
- (2) Process Capability of Significant (For NEIL) and/or Major (For Customer) characteristics defined to be submitted with every Lot.
- (3) If process capability of any particular parameter is demanded by NEIL, the process capability value of the same will be considered.
- (4) If process capability of any particular parameter is not demanded by NEIL, the process capability will be considered as per below table.
- (5) Process capability report to be submitted through mail before 2nd of next month.

<b>Category</b>	<b>Process Capability Parameter</b>
Inner	Bore Size
Outer	OD Size
Cage(Steel , Nylon and Claw type)	Inner diameter
Ball	Ball diameter
Wear Ring	Bore Size
Clamping Plate	OD Size
Inner Thrust Collar	Bore Size
Inner Thrust Collar Distance Piece	Width Size / OD Size
Outer Thrust Collar	OD Size / Bore Size
Thrower Cover	OD Size
Axle Box Housing	Bore Size
Adapter	Bore Size
Bush Nylatron	OD Size
End Cover	OD Size
Cap Screws	Length / Major Dia
Rollers	Length
Hex Head Nut	Width Size / Minor Dia
Side Frame Key Bolt	Length
Inner Distance Piece	Width Size
Outer distance piece	Width Size
Outer Spacing piece	Width Size
Plain Cover	OD Size
Backing Ring	Bore Size
End Cap	Bore Size
Narrow Jaw Adapter	Bore Size
Labyrinth Ring X-134-3	OD Size
Thrower	OD Size
Brass Cage	PCD
Steel Cage	Bore Dia



Seal	OD
Loose Lip	Bore Size
Angle Ring	OD Size
Cone	Bore Size
P Inner	Bore Size
Spacer	Width Size
Side Frame Key (RDSO)	Hole distance from Lug
Cup	OD Size
Locking Plate	Hole Dia
Lip Inner	Bore Size
Roller	OD Size

**Annexure – 1.B**

- (1) 4M change monthly report (QAF/P/QA/011/1041/Rev. 0) will be submitted to NEIL in defined format.
- (2) 4M change monthly report to be submitted through mail before 2nd of next month in duly signed scanned copy.

**Annexure – 1.C**

<b>Measurement Capability</b>	
<b>Category</b>	<b>Critical measurement Equipment</b>
Turned Race(For BB, TRB and RB)	Contracer
Cage(Steel , Nylon and claw type)	Video measuring machine
Ball	Roundness & Roughness measurement equipment , Noise testing , Electronic comparator
Roller(For TRB & RB)	Contracer
Retainer(Brass & Steel)(For TRB & RB)	Contracer
Axle Box	CMM
Wear ring	Roundness & Roughness measurement equipment
Backing Ring , thrower (For RB)	Contracer
Cap Screw , Thrust collar , distance piece (For RB)	Profile projector

**Annexure – 1.D**

**Measurement capability rating criteria for the supplier defined in clause 3.5**

<b>Category</b>	<b>Minimum required measurement capabilities</b>	<b>Advanced Measurement Capabilities</b>
Forging (BB, TRB & RB)	Microscope, Hardness Testing Machine, Grain Flow Measurement Capability	Spectrometer
Turning (BB, TRB & RB)	Microscope, Hardness Testing Machine, Grain Flow Measurement Capability	Spectrometer
Casting	Spectrometer, Microscope, Hardness Testing Machine, Sand Testing Facility	NDT Testing
Raw Material (Bar, Tube & Wire Rod)	Spectroscope, Microscope, Hardness Testing Machine, Jominy Equipment, C, S, O, H2 Analyzer, Macro Etching, Tensile Testing	SEM, XRD, Auto UT, Immersion Ultrasonic



## Annexure – 2

### List of PPAP Documents

The requirement associated with the relevant submission level can be found in the following table.

Unless defined otherwise by the customer in the order, the supplier should generally follow Submission Level 3.

Requirement	Submission Level				
	Level 1	Level 2	Level 3	Level 4	Level 5
<b>1</b> Design Record For Proprietary Components/Details For all Component Details	R	S	S	*	R
	R	R	R	*	R
	R	S	S	*	R
<b>2</b> Engineering Change Documents (if any)	R	S	S	*	R
<b>3</b> Customer Engineering Approval (if required)	R	R	S	*	R
<b>4</b> Design FMEA	R	R	S	*	R
<b>5</b> Process Flow Diagrams	R	R	S	*	R
<b>6</b> Process FMEA	R	R	S	*	R
<b>7</b> Control Plan	R	R	S	*	R
<b>8</b> Measurement System Analysis Studies	R	R	S	*	R
<b>9</b> Dimensional Results	R	S	S	*	R
<b>10</b> Material, Performance Tests Results	R	S	S	*	R
<b>11</b> Initial Process Studies	R	R	S	*	R
<b>12</b> Qualified Laboratory Documentation	R	S	S	*	R
<b>13</b> Appearance Approval Report (AAR) (if Applicable)	S	S	S	*	R
<b>14</b> Sample Product	R	S	S	*	R
<b>15</b> Master Sample	R	R	R	*	R
<b>16</b> Checking Aids	R	R	R	*	R
<b>17</b> Records of Compliance With Customer Specific Requirements	R	R	S	*	R
<b>18</b> Part Submission Warrant (PSW) Bulk Material Checklist	S	S	S	S	R
	S	S	S	S	R

**S** = The organization shall submit to the customer and retain a copy of records or documentation items at appropriate locations.

**R** = The organization shall retain at appropriate locations make available to the customer upon request.

**\*** = The organization shall retain at appropriate locations and submit to the customer upon request.



## Annexure – 3

Form no. QAF/M/014/032226/Rev.6



### Supplier Corrective Action Report (8D)

Basic Information :					
Part No.		Report No.			
Supplier		Dr. No./Rev.			
Batch No./Ch. No.		Date of Rejection			
Step 1: Team Members					
Name	Title	Mobile No.			
Step 2 : Description of Non Conformity					
Specification	Observation	Remarks			
Step 3: Short Term Corrective Action (Interim Action)					
Action	Resp.	Date	Remarks		
Disposition of Available Material					
Location	Total Qty	Rejected Qty	Finish Date	Resp.	Remarks
NEIL's Customer End					
NEIL Shop					
NEIL Store					
NEIL's Supplier End					
Step 4 : Root Cause(s) Analysis :					
Process Sequence :					
	→	→	→	→	→
					↓
Why Why Analysis :					
Stage	Why	Why	Why	Why	Why
Generation					
Detection					
Step 5 : Corrective Action & Standardisation					
Stage	Root Cause	Action	Resp.	Target Date	
Generation					
Detection					
Specific Document Updated :					
Document	Tick mark	Revision date	Remarks (specify document if tick mark on others)		
PFMEA	<input type="checkbox"/>				
Control plan	<input type="checkbox"/>				
PFD	<input type="checkbox"/>				
Work Instruction	<input type="checkbox"/>				
Others(Maintenance check sheet,Setting approval etc.)	<input type="checkbox"/>				
Step 6 : Corrective Actions Implementation and Effects Confirmation					
Monitoring for 3 lots					
Lot	Batch/Ch. No.	Qty.	Date	Remarks	
1					
2					
3					
Step 7 : Horizontal Deployment					
Description	Resp.	Target Date	Remarks		
Step 8: Closing Remarks and Lessons					
Submitted by :		Submission Date :			



### Annexure – 4

Formno. QAF/I/QA/104/933/rev.0

Supplier Name & Logo		Layout Inspection Report - Supplier																	
Part No.	Part Name	Drg. No / Rev. No.				Date of Inspection		Tick one of the three-->			Sample	PPAP lot	Regular lot						
S.No.	Characteristics	Measuring Method / Equipment	Drg. Dimension	Min	Max	Observation										Disposition Status			
						1		2		3		4		5		Supplier	NEIL		
						Supplier	NEIL	Supplier	NEIL	Supplier	NEIL	Supplier	NEIL	Supplier	NEIL				
1																			
2																			
3																			
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22																			
23																			
24																			
25																			

Supplier  
Prepared By

Supplier  
Verified By

NEIL  
Approved By

Note : 1. Submit Layout Inspection report along with Drawing. Having balloning for all characteristics coming in S.No.  
 2. Please submit these samples with report duly No. aligned on component to NEIL.





**Annexure – 5**

Form no. QAF/Q/000/041602/REV. 1

**NATIONAL ENGINEERING INDUSTRIES LIMITED**

Khatipura Road, JAIPUR-302 006 (Rajasthan)  
Phones: (0141) 2223221, FAX: (0141) 2222259 / 2221926

**SELF EVALUATION FORM FOR SUPPLIERS**  
**"Confidential"**

o Self Evaluation Form for Suppliers for the approval of \_\_\_\_\_

1. NAME OF THE SUPPLIER :

2. ADDRESS :  
WORKS :

OFFICE :

FAX:	FAX:
EMAIL:	EMAIL:
MOBILE :	MOBILE:

3. SSI-UNIT (Yes/No) : \_\_\_\_\_ REG. NO. \_\_\_\_\_ DT. \_\_\_\_\_  
(If Yes, give Reg. No. & Date)

4. MEMBERSHIP :-

a) GST No. & Dt .: \_\_\_\_\_

b) Directorate of Ind.:

Reg. No. & Date : \_\_\_\_\_

5. NATIONAL/INTERNATIONAL

CERTIFICATION : \_\_\_\_\_

(Give details with validation period)

6. NAME(S) OF PROPRIETOR/

PARTNERS/DIRECTORS: \_\_\_\_\_

7. ANY ONE OF ABOVE IS :

RELATED TO OUR EMPLO- : \_\_\_\_\_

YES. (If Yes, please give details)

8. CONTACT PERSON(S) :

WORKS

OFFICE

(Name) : \_\_\_\_\_

(Designation) : \_\_\_\_\_

9. \* MAJOR CUSTOMERS :

\_\_\_\_\_

10. \* PRODUCT(S) :

\_\_\_\_\_



11. CAPITAL WORTH :FIXED RS. \_\_\_\_\_ WORKING RS. \_\_\_\_\_  
(As on previous Financial year)
12. TURNOVER AS ON PREVIOUS FINANCIAL YEAR (Rs.in Lacs p.a.) :BY SALES RS. \_\_\_\_\_  
JOB WORK RS. \_\_\_\_\_  
\* (Provide Balance sheet, Profit & Loss A/c of last 2 Financial years)
13. PRODUCTION CAPACITY:UTILIZED \_\_\_\_\_ SPARE \_\_\_\_\_
14. AUTHORISED : \_\_\_\_\_  
DEALER/DISTRIBUTOR: \_\_\_\_\_  
OF ANY FIRM. (If Yes, give details)
15. DEALING WITH N.E.I. : \_\_\_\_\_  
DIRECTLY/ THROUGH AGENT/ DEALER.
- 16.\*GIVE DETAILS OF YOUR : \_\_\_\_\_  
(DEALERS/DISTRIBUTORS) :  
NEAREST TO N.E.I. : \_\_\_\_\_
17. NO.OF EMPLOYEES :COMM.STAFF: \_\_\_\_\_ TECH.STAFF : \_\_\_\_\_ WORKMEN
18. \*TECHNICAL BACKGROUND : \_\_\_\_\_  
OF PEOPLE IN CHARGE OF: \_\_\_\_\_  
MFG. & QUALITY (Qlfn. & Experience)
19. DETAILS OF COLLABRA- : \_\_\_\_\_  
TION (If any)/SOURCE :  
OF TECHNICAL KNOW-HOW : \_\_\_\_\_
20. \*MACHINERY,INSPECTION : \_\_\_\_\_  
AND MEASURING INSTRU- : \_\_\_\_\_  
MENTS. (Make & model, : \_\_\_\_\_  
quantity, year of purchase & any special accessories etc.)
21. Details of applicable Safety and Environmental regulation restricted, toxic, hazardous materials followed or not.
22. INTRODUCED BY : \_\_\_\_\_  
UNDERTAKING  
We hereby undertake to intimate immediately N.E.I.Ltd., any changes in the constitution of our Company as and when the change is affected.

Date : \_\_\_\_\_

Signature  
(Name & Designation)

\* Attach additional sheets wherever required.

Note: Strike out whichever is not applicable.



**FOR OFFICE USE ONLY**

1. Criteria for Supplier Assessment :

a) QMS Certification - \_\_\_\_\_

\_\_\_\_\_

b) Financial Status - \_\_\_\_\_

\_\_\_\_\_

c) Spare Capacity - \_\_\_\_\_

\_\_\_\_\_

d) Technical Collaboration - \_\_\_\_\_

\_\_\_\_\_

e) Other if any - \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. On the basis of above criteria the Supplier is Approved / Not Approved for

Assessment Audit for - \_\_\_\_\_

3. Sender of Self Evaluation Form from NEIL to Supplier : \_\_\_\_\_

Date :

D.H.(S.D.deptt.)





<b>E Quality Management system &amp; Environment system certifications</b>					
Q	23	Does the Supplier have any Quality system certification , e.g. ISO9001 , IATF 16949 : 2016 etc.? Its expiry date?			
Q	24	Does the Supplier have a Quality Policy & is being properly implemented through Policy deployment in various areas?			
Q	25	Does the Supplier follow the APQP Process during New Product Development?			
Q	26	Does the Supplier have defined procedures of Document control,Records procedure, Internal audit, Control of non-conformance,Corrective action & Preventive action ?			
Co	27	Does the Supplier have any Environment system certification e.g. ISO14001:2015 Its expiry date?			
<b>F Control of input material from Sub Supplier</b>					
Q	28	Does any Receiving Inspection system exist & adhered? Is it sample inspection or 100% Inspection ?			
Q	29	Does the Supplier have the List of approved supplier & are they have adequate gauging system to ensure product quality?			
Q	30	Is there separate identified Receiving inspection area with important work instructions (e.g. visual standards , special characteristics controls etc.) displayed?			
Q	31	Is there Receiving Inspection Control Plans ? & Does record the Inspection results?			
<b>G Education &amp; Training</b>					
Q	32	Is there any well defined procedure for education and training of employees?			
Q	33	Is there any System exists to identify the training needs of each employee?			
Q	34	Is there any training calendar & training material for the financial year for the required operator?			
Q	35	Is there any System to prepare Skill Matrix of all employees and review it at regular intervals			
<b>H Process &amp; Product Control during manufacturing</b>					
Q	36	Does the Supplier has the Process Flow chart & control plan for each component ?			
Q	37	Is there complete alignment among PFD->PFMEA->CP->Work Instruction?			
Q	38	Is there a list of all Work Instructions available in the organization & displayed at appropriate locations?			
Q	39	Is the Control Plan adherence evident ? Are the SC/CC Parameters addressed in the Control Plan / FMEA & identified actions accordingly.			
Q	40	Does the Supplier control the process through regular Process Capability Studies (SPC) & maintain the records for future references?			
Q	41	Is the plant layout as per the process flow chart , with minimum material movement ?			
Q	42	Is there any System exists to conduct Process & Product Audits and record results and actions for non-conformities?			
Q	43	Does the Supplier implemented Process quality check sheets, Setting approval check sheets and First & Last pieces inspection system? Does the operator fill them regularly ? And maintain the records?			
Q	44	Is there any daily check sheet for operators , indicating the points which he has to check on machine & gauges , before starting the machine?			
Q	45	Does the Supplier use Run chart on the machines to find out the size band within which the product is being manufactured & maintain the machine on mean?			
Co	46	Is there any System for material handling & preservation from Raw material receipt or lifting from NEIL to finish material storage (through the company) and delivered to NEIL including packaging.			
Q	47	Does the Supplier have special focus & Regular verification/ validation system on special processes like MPI, Grade sorting, Auto checking, Heat Treatment and any type of coating etc.			
Q	48	Does the Supplier has any effective System to manage any type of changes in process / product / sub Supplier / location etc., at its own or sub Supplier end and maintain records & inform to NEIL?			
Q	49	Are the gauges & masters stored properly & area is properly protected from environmental conditions with racks & cabinets etc. ?			



<b>I Document and Drawing control &amp; Display</b>					
Q	50	Is there defined a procedure to update latest drawings received from NEIL / Customer & maintain revision history of all documents?			
Q	51	Is there defined retention period for all quality records as per Customer requirement?			
Q	52	Does the Supplier display Work instructions , Drawings , processing conditions , control plans , one-point lessons , Special characteristics etc. at appropriate locations?			
Q	53	Does the Supplier maintain the records of all NEIL feed back & record sent to NEIL like Score Card, SCAR, SPC reports, Layout Inspection Report, PPAPs & improvement Plans etc.			
<b>J Tool Management</b>					
Q	54	Is there a list of critical tools & spares & maintain inventory of critical tools & spares?			
Q	55	Does the Supplier has the System of drawing & identification of all Toolings & Job wise Tooling Chart system?			
Q	56	Does the Supplier use standard tools ? & established tool life and change tools accordingly? Are the records maintained for tool change?			
Q	57	Does the Supplier have a proper Tool Inspection & rectification System with records?			
Q	58	Is there any System to verify the condition of tool holders on your machines, at regular intervals?			
Q	59	Is the tool storage area properly protected from environmental conditions with racks & cabinets etc.?			
<b>K Identification system</b>					
Q	60	Are there well defined areas duly identified , for Raw Material storage, Receiving Inspection, Pre-dispatch Inspection, Rejection, OK & in-process material storage etc.?			
Q	61	Are there identified bins for Scrap & rework , on each machine? Are the identification labels being used , to avoid mixing?			
Q	62	Does the Supplier is well aware of maintaining Traceability System through the Supply chain in scope. - Traceability to be maintained batch / heat wise. - Material to be identified by Tag or Route Cards.			
Q	63	Does the Supplier have the fool proof System to follow FIFO System?			
<b>L Control of non-conforming product</b>					
Q	64	Does the Supplier uses locked boxes for Scrap? Is responsibility defined for finalizing the rejections? What is the frequency of finalizing rejections and their disposal?			
Q	65	Does the Supplier analyze rejections (Internal/External) for root causes, and implement actions like fool-proofing etc. , to minimize it?			
Q	66	Does the Supplier maintain rejection (Internal/External) trends & display them on shop floor for awareness purpose?			

<b>M Control of gauges &amp; measuring equipments</b>					
Q	67	Has the Supplier defined calibration & MSA frequency for each gauge & measuring instrument & adhered with the defined frequency?			
Q	68	Does the Supplier uses hard masters? And maintain their calibration frequency from recognize agencies?			
Q	69	Are the calibration due date marked on gauges & masters?			
<b>N Control of Dispatch system</b>					
Q	70	Does the Supplier has the dispatch audit & inspection system like Quality, Quantity, Identification tag or label etc. verification?			
Q	71	Is there proper area, oiling & packing system exist before dispatch?			
<b>O Maintenance of machines</b>					
Q	72	Does the Supplier have a dedicated team & System to carry out the Preventive Maintenance System?			
Q	73	Is there any preventive maintenance schedule of machines, and adhere to it?			
Q	74	Does the Supplier use check sheets for preventive maintenance, and maintain records?			
Q	75	Is there a System to track unscheduled break downs with actions?			



P	Working environment (EHS) & 5 'S' Activities				
Q	76	Is the illumination level at all inspection & working areas sufficient, as per standards?			
Q	77	Is the disposition of chips from machines timely and properly done?			
Co	78	Do the operators clean their machines before starting?			
Co	79	Does the operators/supervisors ensure that all material is kept at its desired place, with proper identification, at the end of shift, and no piece is lying in machine bed?			
Co	80	Is there any hazardous material coming during the process, if yes then dispassion of the same is on satisfactory level?			
Co	81	Is there any child labor in the company?			
Co	82	Is there any unsafe condition in the company, if yes then safety measures are taken on satisfactory level?			
Q	<b>Substance of Concern (SOC) Management System</b>				
Co	83	Does the supplier have a system to check SOC as per GADSL, REACH and ELV - ROHS - 2 for hazardous substance?			
Co	84	Does the supplier had latest revision substance of concern (SOC) list as per GADSL?			
Co	85	Does the supplier has declaration from their suppliers for ROHS-2 for hazardous substance?			
<b>Total no. of points in each category =</b>					
<b>Net Audit Score =</b>					

* Score related to Quality ( Q )		
* Score related to Capacity ( C )		
* Score related to Delivery ( D )		
* Score related to Compliance ( Co ) ( Legal , Finance ,Cost , Environment & Safety etc. )		

**Total Net Score =**

<b>1 Supplier is :</b>		<b>Not Accepted</b> <input type="checkbox"/>	<b>Accepted</b> <input type="checkbox"/>	<b>Date :</b>		
<b>2 PPAP Approval :</b>						
PO No. of PPAP Lot	PPAP Lot Qty.	Date of Lot receipt & Insp.	RI Status	Assembly status	Approval status & Date	

**STANDARD REMARKS :-**

1. Top Management commitment :
2. Technical Capability :

**GENERAL REMARKS :-**

**DH - Logistics**

**DH - SD Deptt.**

**Supplier Categorization Standard:-**

Audit Rating	Category	Description of Category
81% & Above	A	Supplier is approved
71% to 80%	B	Supplier is approved , but has to implement improvement points to achieve 'A' Category
61 to 70%	C	Not approved - Has to be re-audited , after implementation of improvement points
60% & Below	D	Not approved

- \* Supplier has to achieve minimum (71%) score in individual heads for approval.
- Auditor has to score 0,1 or 2 in score columns as defined above & put observation against each Audit point in audit observation Column.



### Annexure – 7

Form no. QAF//QA/184/877/Rev. 0

<b>Supplier Risk Assessment</b>				
<b>Supplier Name :</b>				Date-
S.No.	Type of Risk	Risk Impact	Contingency Plan Verified	Risk level
<b>A</b>	<b>Capacity</b>	High		
1	Spare Capacity			
2	Key Machine & Equipment Failure			
3	Labor Shortage & Labor strike			
4	Utility Interruptions			
<b>B</b>	<b>Capability</b>	High		
<b>C</b>	<b>Legal , Financial &amp; Costing</b>	High		
<b>D</b>	<b>Logistics</b>	High		
<b>E</b>	<b>Natural Disaster</b>	High		
<b>Conclusion :</b> <b>Analysis done by :</b>				



### Annexure – 8

	<h2>National Engineering Industries Limited</h2>	
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### Supplier Score Card

Supplier Name :		Quality Rating(100%)	Delivery Rating(100%)	Overall Rating(100%)
Supplier Code :				
Supply items :				
Month :				

NEI Contact Persons			Supplier Contact Persons		
Name	Mail ID	Phone No.	Name	Mail ID	Phone No.

Material Performance(55%)				Response Performance(15%)			Supplier Information(30%)					
NEI Inspection Rating(25)	Shop Complaint(10)	Shop Rejection(10)	Customer Complaint(10)	Timely Response(5)	Quality Response(5)	Reoccurrence of Issues(5)	Process Capability(5)	Internal Rejection(5)	4M change notification(5)	Measurement Capability(5)	Supplier Audit Score(8)	Supplier Involvement through Kaizen(2)

QA - Input Material Quality (55%)													
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Inspection Rating	Lot Acceptance %(25)												
NEI Shop Complaint Rating	NEI shop complaints(in No.)												
NEI Line Rejection Rating	NEI Line Rejection Trend (in PPM)												
Customer complaint rating	Customer Shop Complaint(in No.)												

QB - Resolution Response (15%)													
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Timely Response rating	Timely response of issue												
Timely SCAR Submission rating	Quality Response of Issue												
Reoccurrence of Issues rating	Reoccurrence of Issues												

QC+QD+QE+QF+QG+QH - Supplier's Information (30%)													
		Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Process Capability(QC)	Process Capability(Cpk)												
Internal rejection(QD)	Internal Rejection(PPM)												
4M Change Notification (QE)	4M change notification(Y/N)												
Measurement Capability (QF)	Measurement Capability(Y/N)												
Supplier Audit Score(QG)	Supplier Audit Score												
Supplier Involvement through Kaizen(QH)	Supplier Involvement through Kaizen(in No.)												

Month	Avg.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Quality Rating													
Delivery Rating													
Cost rating													
Overall Rating													



<b>A</b>	<b>&gt; 81%</b>	<b>B</b>	<b>61~80%</b>	<b>C</b>	<b>&lt;61%</b>
<b>Overall Quality Rating for yr(in %)</b>					



## Annexure – 9

### **Standard for Prohibited and Declarable Substances Std. No. RMSD00169549**

**1) PURPOSE:**

To set forth the restrictions on distribution of hazardous (prohibited and declarable) substances.

**2) SCOPE:** The standard deals with substances or materials which must not be used, which must be declared subjected to requirements according to

- Legal requirements
- Customer requirements
- Internal NEIL requirements.

**3) DEVIATION AND REJECTION :**

Any deviation from this specification must be approved by NEIL Chief Metallurgist and Quality Head.

Non conformance to this specification or to any authorized deviation shall be cause of rejection.

**4) DEFINITIONS :**

**Substances :** Chemical elements or Chemical compounds as they occur naturally or as they produced, including the auxiliary agents which are added in order to stabilize the compounds and impurities which are caused by manufacturing.

**Preparations :** Mixtures and solutions which consists of two or more substances.

**Articles :** Items which gets its specific and final shape and properties as per design during production which satisfies its function for the intended purpose to a greater degree than chemical composition.

**Production Materials:** Material (substances/articles/preparations) which remain in NEIL products or which will remain NEIL products.

**Operating and auxiliary materials:** Substances and preparations which are necessary for the production process but do not remain in NEIL products. e.g. coolants, lubricants incl. additives, anti corrosion agents.



### 5) List of Prohibited Substances :

Substance/ substance group	CAS No.	Affected application	Limit value (wt.%)	Exem ption	Legal regulations
<b>Electrical and electronic equipment and components; metal, glass and ceramic parts</b>					
Lead	743992-1	Electrical and electronic equipment	0.1	yes	EU RoHS CH Chem RRV App.
Cadmium Cadmium compounds	744043-9	Electrical and electronic equipment	0.01	yes	EU RoHS CH Chem RRV App.
		Metal surface coating	n.d.	yes	EU REACH App. XVII CH Chem RRV App. 2.9, 2.16(2) DK Statutory Order
		Zinc layers	0.025		CH Chem RRV App.
Mercury Mercury compounds	743997-6	Electrical and electronic equipment	0.1	yes	EU RoHS
		All applications	n.d.	yes	CH Chem RRV App. 1.7 NL Decree 9 September 1998
Hexavalent chromium (Cr <sup>VI</sup> )		Electrical and electronic equipment	0.1	yes	EU RoHS CH Chem RRV App.
Polybrominated biphenyls (PBBs) Polybrominated diphenyl-ethers		Electrical and electronic equipment	0.1	yes	EU RoHS CH Chem RRV App. 1.9
Octabromodiphenylether (OBDE)	3253652-0	All applications	0.1		EU REACH
Pentabromodiphenyl-ether (PeBDE)	32534-81-9				
<b>Batteries and accumulators</b>					
Lead	7439-92-1	Fixed batteries	0.1	yes	CH Chem RRV App. 2.15
Cadmium	744043-9	Portable batteries and accumulators	0.002	yes	EU 2006/66/EC
		Zinc-carbon batteries	0.015		CH Chem RRV App. 2.15
		Fixed batteries	0.015	yes	
Mercury	743997-6	Batteries and accumulators	0.0005	yes	EU 2006/66/EC
		Fixed batteries	0.0005		CH Chem RRV App. 2.15
		Button cells and batteries composed of button cells	2		EU 2006/66/EC CH Chem RRV App. 2.15
		Alkali-manganese batteries	0.0005	yes	CH Chem RRV App. 2.15
		Zinc-carbon batteries	0.0005		CH Chem RRV App. 2.15
<b>Substance/ substance group</b>	<b>CAS No.</b>	<b>Affected application</b>	<b>Limit value (wt.%)<sup>1)</sup></b>	<b>Exem ption</b>	<b>Legal regulations<sup>2)</sup></b>
<b>Plastics and rubber parts, wire insulation, coats of lacquer</b>					



Polybrominated biphenyls (PBBs) Polybrominated diphenyl-ethers (PBDEs)		Electrical and electronic equipment	0.1	yes	EU RoHS CH Chem RRV App. 1.9
Octabromodiphenylether (OBDE) Pentabromodiphenyl-ether (PeBDE)	3253652-0 32534-81-9	All applications	0.1		EU REACH App. XVII
Short-chain chlorinated paraffins (G <sub>0</sub> -C <sub>13</sub> )		Sealing compounds Plastics and rubber	1.0		CH Chem RRV App. 1.2
Lead and lead compounds		Paints and varnishings	0.01	yes	CH Chem RRV App. 2.8
Cadmium and cadmium compounds		Pigments in plastics Stabilized vinyl chloride polymers and copolymers (e.g. PVC)	0.01 0.01	yes yes	EU REACH App. XVII CH Chem RRV App. 2.9, DK Statutory Order No. limit values 0.0075%
		Paints and varnishings	0.01	yes	CH ChemRRV App. 2.8
<b>Insulating materials</b>					
Asbestos	1332-21-4 see below <sup>4)</sup>	All applications	0.1 (total)	yes	EU REACH App. XVII
			n.d.	yes	CH Chem RRV App. 1.6
Man-made vitreous (silicate) fibres with random orientation with oxide of sodium, potassium, calcium, magnesium and barium content >18 % by mass		Articles for heat and noise reduction in building construction including technical insulation and for ventilation systems	0.1 (total)	yes	DE Chem VerbotsV
<b>Other materials (e.g. wood)</b>					
Arsenic compounds		Wood	n.d.	yes	EU REACH App. XVII
Formaldehyd	50-00-0	Holzwerkstoffe	0,1 ml/m <sup>3</sup> (spezielles Prüfverf.)	ja	DE Chem Verbo AT tsV BGBl. SE Nr.
Creosote	800158-9	Wood and wooden materials	n.d.	yes	EU REACH App. XVII
Pentachlorophenol (PCP) Pentachlorophenol, sodium salt Other PCP salts and compounds	87-86-5 131-52-2	All applications	0.000 5 (total)	yes	EU REACH App. XVII
<b>Coolants, insulating gases and liquids, fire extinguishing agents</b>					
CFCs and halons	see below <sup>5)</sup>	All applications	n.d.		EU 1005/2009 US CAA (42 USC 7671 et seq.) CH Chem RRV App. 1.4,
HCFCs		Use in cooling and air-conditioning devices	n.d.	yes	EU 1005/2009
FCs		Fire protection systems and fire extinguishers	n.d.		EU Regulation No. 842/2006
FCs HFCs		Non-confined direct-evaporation systems containing refrigerants	n.d.		EU Regulation No. 842/2006
		Cooling and air conditioning equipment	n.d.	yes	AT BGBl. Nr. 447/2002



FCs HFCs Sulfur hexafluoride (SF <sub>6</sub> )	2551-62-4	One component foams	n.d.	yes	EU Regulation No. 842/2006
<b>Substance/ substance group</b>	<b>CAS No.</b>	<b>Affected application</b>	<b>Limit value (wt.%)<sup>1)</sup></b>	<b>Exem ption</b>	<b>Legal regulations<sup>2)</sup></b>
HFCs		Cooling plants, heat pumps, air conditioning plants (comfort cooling) and dehumidifiers with charges 10 kg	n.d.		DK Statutory Order no. 552 of 2 July 2002
HCFCs (C <sub>1</sub> to C <sub>3</sub> ) HBrFCs (C <sub>1</sub> to C <sub>3</sub> ) Methyl bromide	74-83-9	All applications	n.d.	yes	CH Chem RRV App. 1.4, 2.3, 2.9-12
Sulfur hexafluoride (SF <sub>6</sub> )	2551-62-4	Insulating and quenching gas in electrotechnical systems and appliances up to 1 kV (over 1kV obligation to report)	n.d.		AT BGBl. Nr. 447/2002
		Low voltage plants (1kV)	n.d.		DK Statutory Order no. 552 of 2
		All applications (over 1 kg obligation to report in cases of exceptions)	n.d.	yes	CH Chem RRV App. 1.5
Polychlorinated biphenyls (PCBs)	1336-36-3	All applications	0.005 (total)	yes	EU REACH App. XVII
Polychlorinated terphenyls (PCTs)	61788-33-8		n.d.		CH ChemRRV App. 1.1, 2.14
Monomethyltetrachlorodiphenylmethane (Ugilec 141)	76253-60-6				
Monomethyldichlorodiphenylmethane (Ugilec 121 or 21)	99688-47-8				
Monomethyldibromodiphenylmethane (DBBT)					
Polychlorinated biphenyls (PCBs)	1336-36-3	Not totally enclosed	0.05	yes	US TSCA (15 USC 2605) + 40 CFR 761
Halogenated biphenyls, terphenyls, naphthalenes		All applications	n.d.		CH Chem RRV App. 1.1
Halogenated aromatic compounds		Capacitors and transformers	0,05/0,005 (mono-/polyhalogenated)		CH Chem RRV App. 2.14
Perfluorooctane sulfonic acid and its metal salts, halides, amides, and other derivatives including polymers (PFOS)		All applications	0.1	yes	EU REACH App. XVII
<b>Packaging</b>					
Heavy metals (lead, cadmium, hexavalent chromium, mercury)		Packaging and packaging components	0.01 (total)		EU 94/62/EC CH Chem RRV App. 2.16(4)
<b>Cleaning agents</b>					



Aliphatic CHCs	s. u. <sup>3)</sup>	All applications	0.1 (total)	yes	EU REACH App. XVII CH Chem RRV App. 1.3
1,1,1-Trichloroethane Tetrachloromethane	71-55-6 56-23-5	All applications	n.d.		CH Chem RRV App. 1.4

**Notes**

1) "n.d." means that no limit value is defined by the legislation.

2) Country codes according to ISO 3166

Chem Verbots V	German chemicals prohibition ordinance (Chemikalienverbotsverordnung)
CAA	Clean Air Act
KIFS	Swedish National Chemicals Inspectorate's Regulations (Kemikalieinspektionens föreskrifter)
REACH	Regulation 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
RoHS	Directive of the European Parliament and the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (Directive 2002/95/EC)
SFS	Swedish Code of Statutes (Svensk författningssamling)
ChemRRV	Swiss ordinance on reduction of chemical risks (Chemikalien-Risikoreduktions- Verordnung)
TSCA	Toxic Substances Control Act

**6) List of Declarable substances :**

Code	Substance/substance group	CAS No.	Typical applications	Limit value (% w/w)	Reference of the limit value
<b>Electrical and electronic components; metal, glass and ceramic parts</b>					
100	Arsenic Arsenic compounds	7440-38-2	Lead and copper alloys, metal adhesives, soft solders, glasses, semiconductors	0.1	Application
200	Beryllium Beryllium compounds	7440-41-7	Contact and spring materials, copper alloys, high-temperature materials, ceramics, glasses	0.1	Application
300	Lead Lead compounds	7439-92-1	Solders, hybrid circuits, ceramics, glasses	0.1	Homogeneous material
400	Cadmium Cadmium compounds	7440-43-9	Contact coatings, hard and soft solders, glasses	0.01	Homogeneous material
500	Chromium (VI) compounds		Anti-corrosion coatings	0.1	Homogeneous material
600	Mercury Mercury compounds	7439-97-6	Discharge lamps, relays, switches	0.1	Homogeneous material
700	Polybrominated biphenyls (PBBs)		Flame-protected plastics in components and printed circuit boards	0.1	Homogeneous material



800	Polybrominated diphenylethers (PBDEs), in particular -Pentabromodiphenylether (PentaBDE) -Octabromodiphenylether (OctaBDE) -Decabromodiphenylether (DecaBDE)	32534-81-9 32536-52-0 1163-19-5	Flame-protected plastics in components and printed circuit boards	0.1	Homogeneous material
900	Radioactive substances		Measuring devices, dischargers	Intentionally added	Application
<b>Plastics and rubber parts, wire insulation, coats of lacquer</b>					
700	Polybrominated biphenyls (PBBs)		Flame-protected plastics	0	Homogeneous material
800	Polybrominated diphenylethers (PBDEs), in particular -Pentabromodiphenylether (PentaBDE) -Octabromodiphenylether (OctaBDE) -Decabromodiphenylether (DecaBDE)	32534-81-9 32536-52-0 1163-19-5	Flame-protected plastics		Homogeneous material
1000	Hexabromocyclododecane (HBCCD), including all major diastereoisomers: -Alpha-HBCCD -Beta-HBCCD -GammaHBCCD	25637-99-4 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8)	Flame-protected plastics	0.1	Article
1100	Other brominated flame retardants than PBBs, PBDEsandHBCCD		Flame-protected plastics	0.1	Application
1200	Antimony trioxide	1309-64-4	Flame-protected plastics containing brominated flame retardants, laser-writable plastics	0.1	Application
<b>Code</b>	<b>Substance/substance group</b>	<b>CAS No.</b>	<b>Typical applications</b>	<b>Limit value (% w/w)</b>	<b>Reference of the limit value</b>
1300	Dibutyl phthalate (DBP)	84-74-2	Plasticized plastics, particularly PVC	0.1	Article
1400	Diisobutyl phthalate (DIBP)	84-69-5	Plasticized plastics, particularly PVC	0.1	Article
1500	Bis (2-ethylhexyl) phthalate (diethylhexylphthalate, DEHP)	117-81-7	Plasticized plastics, particularly PVC	0.1	Article
1600	Benzyl butyl phthalate (BBP)	85-68-7	Plasticized plastics, particularly PVC	0.1	Article
1610	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters [di(heptyl, nonyl, undecyl) phthalate, DHNUP]	68515-42-4	Plasticized plastics, particularly PVC	0.1	Article



1620	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkylesters, C7-rich (diisooheptyl phthalate, DIHP)	71888-89-6	Plasticized plastics, particularly PVC	0.1	Article
1650	Bis(2- methoxyethyl) phthalate	117-82-8	Plasticized plastics, particularly PVC	0.1	Article
1700	Short-chain chlorinated paraffins (C <sub>10</sub> -C <sub>13</sub> ) Otherchlorinated paraffins		Plasticized and flame- protected plastics, rubber and sealing compounds	0.1	Article
1800	Tris (2-chloroethyl) phosphate (TCEP)	115-96-8	Plasticized and flame- protected plastics, flame-protected paints and varnishes	0.1	Article
1900	Polycyclic aromatic hydrocarbons (PAHs, creosote)		Plasticized or dyed plastics, rubber-like materials	0.02	Application
<b>Dyed or stabilized plastics, coats of lacquer, enam els and related materials</b>					
2000	Lead chromate	7758-97-6	Pigmented paints and varnishes, anti-corrosion coatings	0.1	Article
2100	Lead chromate molybdate sulfate red (C.I. Pigment Red104)	12656-85-8	Pigmented plastics and paints	0.1	Article
2200	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	Pigmented plastics and paints	0.1	Article
300	Other Lead compounds		Pigmented plastics and other materials, stabilized plastics (in particular PVC)	0.1	Homogeneous material
400	Cadmium compounds		Pigmented plastics and other materials, stabilized plastics (in particular PVC)	0.01	Homogeneous material
500	Chromium (VI) compounds		Pigmented plastics and other materials	0.1	Homogeneous material
2300	Azo colourants and azo dyes which can form carcinogenic aromatic amines		Dyed plastics, textiles and leather articles	0.1	Application
2350	Bis (tributyltin) oxide	56-35-9	Antifouling paints for ships and cooling towers	0.1	Article
<b>Insulating materials</b>					
2400	Asbestos	1332-21-4	Insulating materials in buildings, industrial systems and appliances	0.1	Application
<b>Code</b>	<b>Substance/substance group</b>	<b>CASNo.</b>	<b>Typical applications</b>	<b>Limit value (% w/w)</b>	<b>Reference of the limit value</b>
2500	Man-made vitreous (silicate) fibres with random orientation with oxides of sodium, potassium, calcium, magnesium and barium content > 18 % by mass		Insulating materials in buildings, industrial systems and appliances	0.1	Application



2600	Aluminosilicate, refractory ceramic fibres		High-temperature insulating materials in buildings, industrial systems and appliances	0.1	Article
2700	Zirconia aluminosilicate, refractory ceramic fibres		High-temperature insulating materials in buildings, industrial systems and appliances	0.1	Article
<b>Other materials (e.g. wood)</b>					
2750	Acrylamide	79-06-1	Grouting	0.1	Application
100	Arsenic compounds		Biocide-treated wood	0.1	Application
2800	Formaldehyde	50-00-0	Wooden materials	0.1 ml/m <sup>3</sup>	Application
2900	Pentachlorophenol (PCP) Pentachlorophenol, sodium salt Other PCP salts and compounds	87-86-5 131-52-2	Fungicide-treated wood, textiles and leather articles	0.0005	Application
2350	Bis (tributyltin) oxide	56-35-9	Fungicide-treated wood, textiles and leather articles	0.1	Article
2950	Bis (2-methoxyethyl) ether	111-96-6	Electrolytes in lithium batteries, solvent in printing inks and sealants	0.1	Article
2960	1,2-Dimethoxyethane (ethylene glycol dimethyl ether, EGDME)	110-71-4	Electrolytes in lithium batteries, solvent in printing inks and sealants	0.1	Article
2970	1,2-Bis (2-methoxyethoxy) ethane (TEGDME, triglyme)	112-49-2	Electrolytes in lithium batteries, solvent in printing inks and sealants	0.1	Article
<b>Coolants, insulating gases and liquids, fire extinguishing agents</b>					
3000	CFCs and halons		Aerosols, coolants, fire extinguishing agents, insulating foams	1.0	Application
3100	HCFCs		Coolants	1.0	Application
3200	FCs		Coolants, fire extinguishing agents	1.0	Application
3300	HFCs		Coolants, insulating foams	1.0	Application
3400	HBr FCs (C <sub>1</sub> bis C <sub>3</sub> )		Fire extinguishing agents	1.0	Application
3500	Sulfur hexafluoride (SF <sub>6</sub> )	2551-62-4	Insulating and quenching gas in electrotechnical systems, appliances and components	0.1	Application
3600	Polychlorinated biphenyls (PCBs) Polychlorinated terphenyls (PCTs) Polychlorinated naphthalenes (PCNs)		Insulating agents in transformers, hydraulic fluids, heat transmission fluids	0.005	Application
3700	Perfluorooctane sulfonic acid and its metal salts, halides, amides, and other derivatives including polymers (perfluorooctane sulfonates, PFOS)		Fire-fighting foams	0.1	Application





## Annexure – 10

Form no. QAF/P/QA/011/857/Rev. 0

<b>Product Development Plan (Supplier APQP)</b>																	
<b>Part Name:</b>			<b>Part No.:</b>			<b>Category:</b>					<b>Project Kick Off Date:</b>						
<b>Customer Name: NEIL, Jaipur</b>			<b>Team NEI:</b>					<b>Team Supplier:</b>									
<b>Supplier Name:</b>			<b>Window Person:</b>					<b>Window Person:</b>									
			<b>Contact No.</b>					<b>Contact No.</b>									
			<b>Email- Id:</b>					<b>Email-Id:</b>									
Sr. No.	Activity	Responsibility	Target Date	Completion Date	Status	Weekly Monitoring											Remarks
						W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	W-9	W-10	W-11	
1	Receiving NEI Drawings & RFQ				Plan												
					Actual												
2	Feasibility Review				Plan												
					Actual												
3	Quotation Submission to NEI				Plan												
					Actual												
4	Spec Review Meeting With NEI				Plan												
					Actual												
6	Order Confirmation by NEI				Plan												
					Actual												
7	Tools Drg. Preparation				Plan												
					Actual												
8	Tools development				Plan												
					Actual												
9	Development of inspection facilities and gauges				Plan												
					Actual												
10	Preparation of PFD & PFMEA				Plan												
					Actual												
11	Preparation of Control Plan				Plan												
					Actual												
12	Sample Submission to NEI				Plan												
					Actual												
13	Sample approval & clearance by NEI				Plan												
					Actual												
14	Process Validation/ PPAP Audit by NEI				Plan												
					Actual												
15	PPAP Lot Submission to NEI				Plan												
					Actual												
16	NEI Approval and PSW sign off				Plan												
					Actual												
17	NEI feed back and continuous improvement				Plan												
					Actual												

Prepared By:-

Approved By:-

Approved By NEI :-



## Annexure – 11

Form no. QAF/P/QA/011/878/Rev. 1

Part Feasibility Report			
CUSTOMER NAME :		DATE :	
SUPPLIER NAME :		PART NAME / No. : DRAWING NO.:	
<b>Feasibility Considerations</b> Our product planning team has considered the following question, not intended to be all-inclusive in performing feasibility evaluation. The drawings and / or specification provided have been used as a basis for analyzing the ability to meet all specified requirements. All "No" answers are supported with attached comments identifying our concerns and/ or proposed changes to enable us to meet the specified requirements.			
S.No.	Yes	No	Consideration
1	<input type="checkbox"/>	<input type="checkbox"/>	Is product adequately defined (application requirements, etc.) to enable feasibility evaluation?
2	<input type="checkbox"/>	<input type="checkbox"/>	Can Engineering Performance Specifications be met as written?
3	<input type="checkbox"/>	<input type="checkbox"/>	Can product be manufactured to tolerances specified on drawing?
4	<input type="checkbox"/>	<input type="checkbox"/>	Is measurement system acceptable? e.g. Gauge R&R < 10%
5	<input type="checkbox"/>	<input type="checkbox"/>	Is there adequate capacity to produce product?
6	<input type="checkbox"/>	<input type="checkbox"/>	Is there Raw Material availability to produce product?
7	<input type="checkbox"/>	<input type="checkbox"/>	Does the design allow the use of efficient material handling techniques?
8	<input type="checkbox"/>	<input type="checkbox"/>	Can the product be manufactured without incurring any unusual: <ul style="list-style-type: none"> <li>• Costs for capital equipment?</li> <li>• Costs for tooling?</li> <li>• Alternative manufacturing methods?</li> </ul>
9	<input type="checkbox"/>	<input type="checkbox"/>	Is statistical process control required on product?
10	<input type="checkbox"/>	<input type="checkbox"/>	Is statistical process control presently used on similar product?
11	<input type="checkbox"/>	<input type="checkbox"/>	Are the processes in control and stable?
12	<input type="checkbox"/>	<input type="checkbox"/>	Are Cpk's > 1.67
13	<input type="checkbox"/>	<input type="checkbox"/>	Is there additional product equipments required?
14	<input type="checkbox"/>	<input type="checkbox"/>	Skill man power required?
15	<input type="checkbox"/>	<input type="checkbox"/>	Is there availability of adequate measurement gauges & instruments?
16	<input type="checkbox"/>	<input type="checkbox"/>	Other Issue
Remarks (if any) :			
<b>Conclusion:</b>			
<input type="checkbox"/>	Feasible	Product can be produced as specified with no revision	
<input type="checkbox"/>	Feasible	Change recommended	
<input type="checkbox"/>	Not Feasible	Design revision to produce product within the specified requirements.	
<b>Sign-Off</b>			
Team Member /Title/Date		Team Member /Title/Date	
Management		Quality	
Team Member /Title/Date		Team Member /Title/Date	
Production		Purchase & Store	
Team Member /Title/Date		Team Member /Title/Date	
Maintenance		Tool Room	



**Annexure – 12**

Form no. QAF/P/QA/011/1358/Rev. 0



**NATIONAL ENGINEERING INDUSTRIES LTD.  
JAIPUR**

**Specification Review Meeting with Supplier**

<b>Supplier:</b>				<b>Date</b>	
<b>Supplier Rep.</b>	<b>Name</b>	<b>Signature</b>	<b>NEI Persons</b>	<b>Name</b>	<b>Signature</b>
<b>Subject :</b> Discussion on Drawing, Tolerance, Specification, Basic Manufacturing Process , Inspection / Test method & CSR if any for .....					
<b>S.N.</b>	<b>Description</b>			<b>Resp.</b>	<b>Sch./Inf.</b>





**Annexure – 14**

**Quality Agreement**

Supplier Name & Address:

M/s. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

With reference to continuous improvement at NEIL supplier, this agreement is valid from \_\_\_\_\_ to \_\_\_\_\_ .

On the basis of the year \_\_\_\_\_ the average rejection PPM of the supplier at NEIL is \_\_\_\_\_(As per below table).

Month	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Avg
PPM													

It has been mutually agreed by supplier & NEIL that supplier is committed to reduce the rejection PPM by \_\_% in the year of \_\_\_\_\_ .

To achieve this PPM target supplier’s efforts with proactive approach and NEIL SQA team support will be appreciated.

The agreement will be revised on \_\_\_\_\_ .

**NEIL**

**Supplier**

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Name)

SQA. \_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Title)



## Annexure -15

<b>SEVERITY RANKING CHART (As per FMEA Fourth Edition)</b>				
<b>PFMEA Ranking</b>				
<b>EFFECT</b>	<b>Criteria : Severity of Effect on Product (Customer Effect)</b>	<b>Rank</b>	<b>EFFECT</b>	<b>Criteria : Severity of Effect on Process (Manufacturing / Assy Effect)</b>
Failure to meet safety & / or regulatory requirements.	Potential Failure mode affects safe vehicle operation & / or involves	10	Failure to Meet Safety and /or Regulatory requirements.	May endanger operator (machine or assembly) without warning.
	Potential Failure mode affects safe vehicle operation & / or involves noncompliance with government regulation with warning.	9		May endanger operator (machine or assembly) with warning.
Loss or Degradation of Primary Function	Loss of primary function (vehicle inoperable, does not effect safe vehicle operation)	8	Major Disruption	100% of product may have to be scrapped. Line shutdown or stop ship.
	Degradation of primary function (vehicle operable, but at reduced level of performance).	7	Significant Disruption	A portion of the production run may have to be scrapped. Deviation from primary process including decreased line speed or added manpower.
Loss or Degradation of Secondary Function	Loose of secondary function (vehicle operable, but comfort/convenience function inoperable).	6	Moderate Disruption	100% of production run may have to be reworked off line and accepted.
	Degradation of secondary function (vehicle operable, but comfort / convenience function at reduce level of function).	5		A portion of the production run may have to be reworked off line and accepted.
Annoyance	Appearance or Audible noise, vehicle operable, item does not comfort and noticed by most customer (>75%)	4	Moderate Disruption	100% of production run may have to be reworked in station before it is processed.
	Appearance or audible noise, vehicle operable, item does not comfort and noticed by many customer (50%)	3		A portion of the production run may be reworked in station before it is processed.
	Appearance or audible noise, vehicle operable, item does not conform and noticed by discriminating customer (<25%)	2	minor Disruption	Slight inconvenience to process, operation, or operator.
No Effect	No discernible effect.	1	No Effect	No discernible effect.

### OCCURANCE RATING CHART

<b>Probability</b>	<b>Likely Failure Rates* (Rejection %)</b>	<b>Rank</b>	
Very High	100 per thousand 1 in 10	10	
	50 per thousand 1 in 20	9	
High	20 per thousand 1 in 50	8	
	10 per thousand 1 in 100	7	
Moderate	2 per thousand 1 in 500	6	
	0.5 per thousand 1 in 2000	5	
	0.1 per thousand 1 in 10000	4	
Low	0.01 per thousand 1 in 100,000	3	
	0.001 per thousand 1 in 1,000,000	2	
Very Low	Failure is eliminated through preventive control	1	

### DETECTION RATING CHART

<b>Opportunity for Detection</b>	<b>Criteria Likelihood Of Detection by Process Control</b>	<b>Rank</b>	<b>Likelihood of Detection</b>	
No detection opportunity	No current process control; Cannot detect or is not analyzed.	10	Almost Impossible	
Not likely to detect at any stage	Failure mode and/or error (Cause) is not easily detected (e.g., random audits).	9	Very Remote	
Problem Detection Post Processing	Failure mode detection post-processing by operator through visual/tactile/audible/ means.	8	Remote	
Problem Detection at Source	Failure mode detection in-station by operator through visual/tactile/audible means or post-processing through use of attribute gauging (go/no-go, manual torque check/clicker wrench, etc.).	7	Very Low	
Problem Detection Post Processing	Failure mode detection in-station by operator through use of variable gauging or in-station by operator through use of attribute gauging (go/no-go, manual torque check/clicker wrench, etc.).	6	Low	
Problem Detection at Source	Failure mode or error (cause) detection in-station by operator through use of variable gauging or in-station by automated controls in-station that will detect discrepant part and notify operator (light, buzzer, etc.). Gauging performed on setup and first-piece check (for setup cause only).	5	Moderate	
Problem Detection Post Processing	Failure mode detection post-processing by automated controls that will detect discrepant part and lock part to prevent further processing.	4	Moderately High	
Problem Detection at Source	Failure mode detection in-station by automated controls that will detect discrepant part and automatically lock part in-station to prevent further processing.	3	High	
Error Detection and/or Problem Prevention	Error (Cause) detection in-station by automated controls that will detect error and prevent discrepant part from being made.	2	Very High	
Detection not applicable; Error Prevention	Error (cause) prevention as a result of fixture design, machine design or part design. Discrepant part cannot be made because item has been error-proofed by process/product design.	1	Almost Certain	

Prepared By:

Approved By:



## ACKNOWLEDGEMENT

### **To be returned by Supplier via email or by post to NEIL SDD :**

We hereby confirm that we have received and understood the NEIL “Supplier Quality Manual– 4th Edition.”

We understand that this manual defines the overall requirements which NEIL expect from its Suppliers.

We agree to strive to meet these requirements, in all our facilities working and our product.

We understand that it is our responsibility to ensure that only the latest revision of this Manual is used by periodically checking the NEIL website for revisions and updates.

We understand that it is our responsibility to deploy this Manual in the current and future facilities working and NEIL products.

The latest revision can be obtained from the NEIL website : [www.nbcbearings.com](http://www.nbcbearings.com)

Supplier Name :

Date & Signature :

(Signature & Name of Supplier with Stamp)

























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