Philips Lighting

# Supplier Quality Manual

Version 4.0  January 2014

# Foreword

The Philips brand promise “Philips delivers innovation that matters to you” positions innovative strength and the quality of our products, solutions and services as a main focus in our company.
To realize the brand promise, Philips relies more and more on its supply base. Only if our suppliers deliver outstanding quality of components, products and services and support Philips in the continuous drive for innovations and excellence, we are able to deliver.
The Lighting world is changing rapidly as a result of the growing importance of LED Lighting and Lighting systems and services. The change towards LED and Lighting systems and services requires a different approach and mindset regarding quality where you as our suppliers are key-players in realization thereof. To optimally work together, our processes in product development, lifecycle management and quality cooperation need to be aligned with our suppliers.
A number of practices are fundamental to the quality management of our supply base:

- We select our suppliers based on their competences and competitiveness during qualification audits. Quality Systems must be in place from the beginning of our relationship
- We involve our suppliers early in our development processes, making optimal use of the competencies and innovativeness on both sides
- We define our product specifications but also our quality standards unambiguously and measure the compliance of our suppliers to these requirements
- Products and components are released and changes are controlled using industry standard practices
- We regularly evaluate supply base performance to drive further improvement
- We work closely with our suppliers to prevent quality incidents and use state of the art methods and procedures
- We engage our suppliers in the Philips Sustainability Programs

This Supplier Quality Manual describes our standard ways of working. Next to the General Purchase Agreement as the official document, we request you as a supplier to acknowledge this manual and adhere to the mentioned statements and descriptions. Moreover, we expect you to proactively work together with us to ensure a competitive advantage, which will sustain and strengthen our market leadership and ensure a profitable future. Great quality performance shows us in a tangible way the supplier willingness to “Team-up with Philips” and is certainly one of the key factors in building stronger sustainable partnerships.

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# Contents

# 1. Introduction

## 1.1. Lighting Supplier Quality Policy

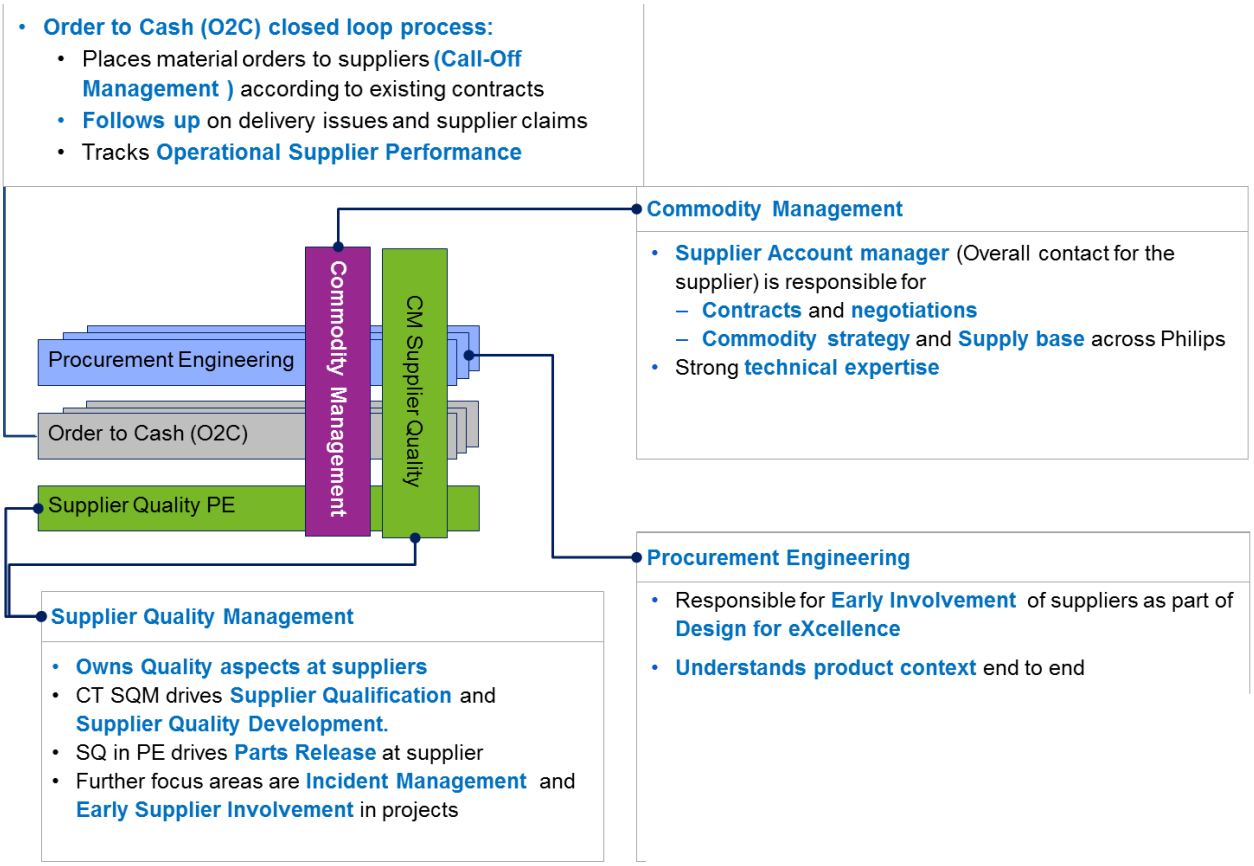
Philips Lighting is committed to providing the highest possible levels of customer satisfaction by delivering high quality, sustainable lighting products, solutions and services. Together with our suppliers we ensure that our lighting products, solutions and services fulfil our brand promise, are fit for use and comply with local regulatory and environmental requirements.

Our way of working is based on the following principles:

- Suppliers are selected based on competences and competitiveness
- Supplier are involved early in product development where we use competences and innovation of both Philips and the supplier
- Product specification is defined and compliance is measured
- Products and components are released and changes are controlled using industry standard practices
- Regular evaluation of the supply base to drive further improvement
- Support implementation of tools and methods to control quality, reduce incidents and improve processes
- Suppliers are integral part of the Philips Sustainability Programs

# 1.2. Supplier Quality Management Organization

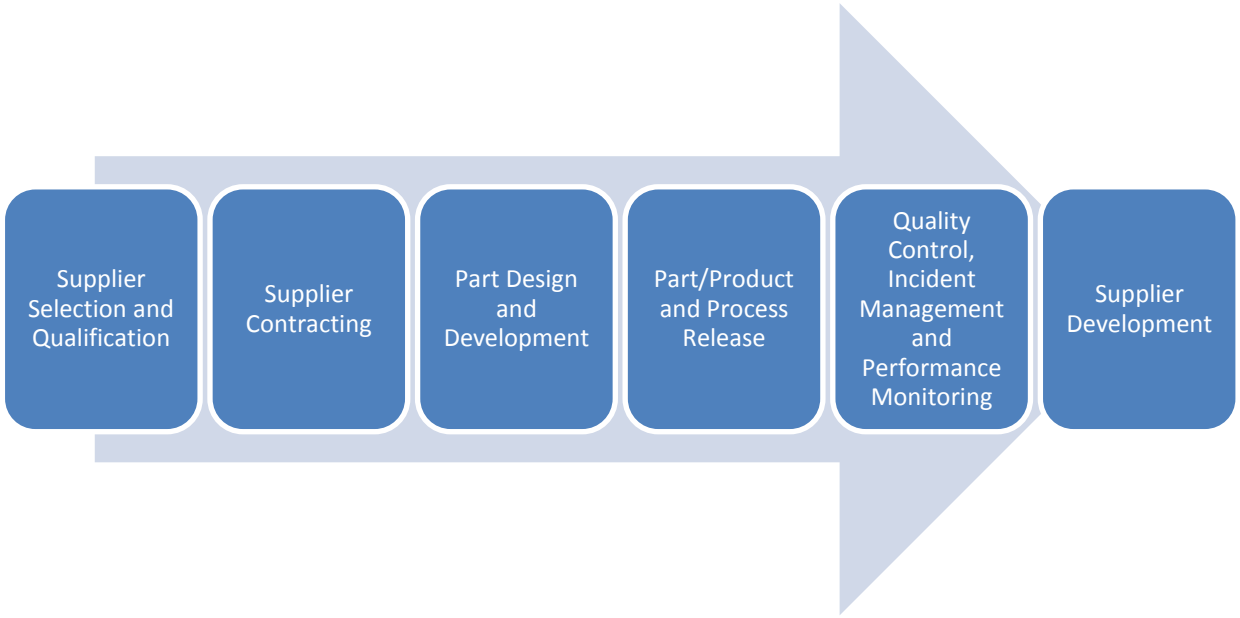
The Supplier Quality Management organization is part of the Procurement organization of Philips Lighting and follows the organizational blue print of the Procurement organization. A schematic representation of the different functions and responsibilities in Procurement is shown below:




A supplier may be confronted with different Supplier Quality Managers. The Commodity Team Supplier Quality Manager (CT-SQM) is responsible for the quality aspects of supplier selection and certification. Additionally he/she will drive supplier quality development for selected suppliers. The Supplier Quality Managers and Engineers in Procurement Engineering are responsible for early supplier involvement in design, part release and incident management. There will always be one SQM responsible for the Supplier Quality Strategy and the key contact to the supplier. This person may come from either CT SQM or PE SQM and is called the Lead SQM. This individual is the Supplier Quality interface between the supplier and Philips Lighting and acts as highest escalation level to solve quality issues in the supply chain.

# 1.3. Supplier Quality Management Processes

As a supplier of Philips Lighting, you will be confronted with 6 main supplier quality processes. These 6 processes are further defined in their respective chapters.




We expect that the way of working, as described in this manual, will be followed for all parts* used in Philips Lighting products, including the ones defined by Philips Lighting, but sold and shipped to our outsourcing partners.

**** Throughout this document the terms 'part' is used for all materials, components, products and services supplied to Philips Lighting.***

# 1.4. Philips Lighting Supplier Relationships

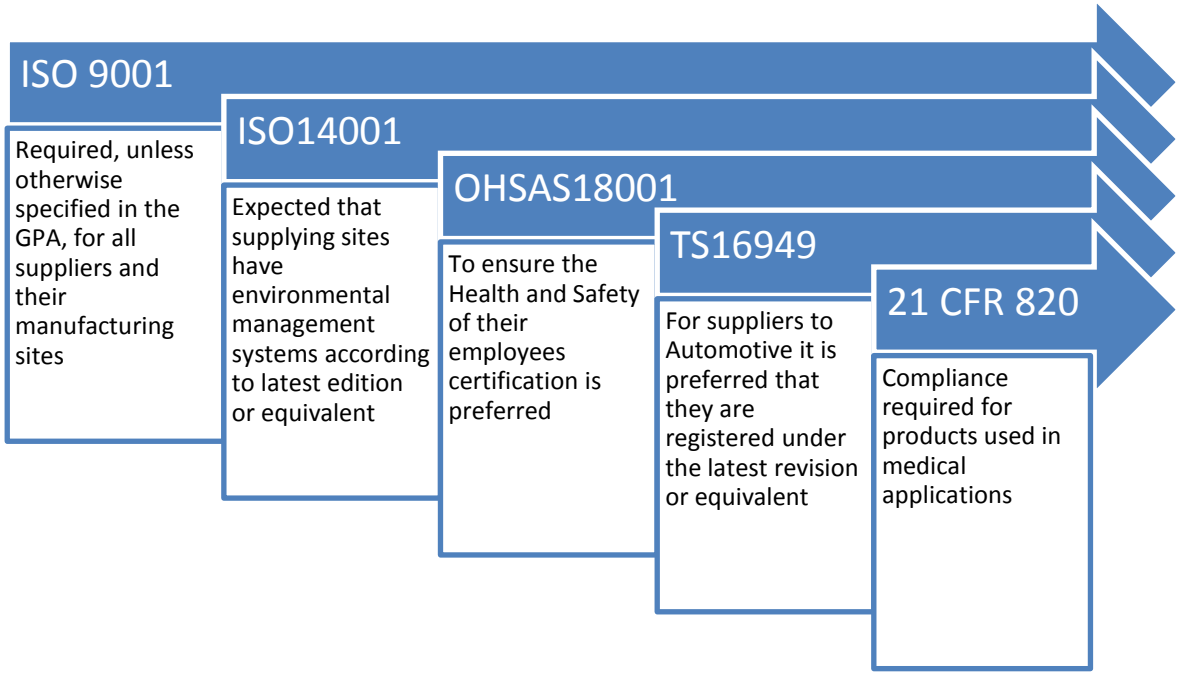
To create a competitive advantage, it is essential to develop and manage supplier relationships.
Although good relationships are sought with all suppliers, intensive working relationships can only be maintained with limited number of suppliers. The objective is to intensify the working relationships for critical goods and services with a few vital suppliers. An optimized supply base will enable Philips Lighting to:

- Devote the correct amount of attention to each supplier
- Develop stable and open working relationships
- Leverage our total purchasing power optimally
- Acquire a wider product range from our supplier

Recognizing the need for differentiation in supplier relationship, Philips Lighting has implemented a segmentation of its total supply base into 3 categories, depending on relationship status, risk profile and strategy fit.

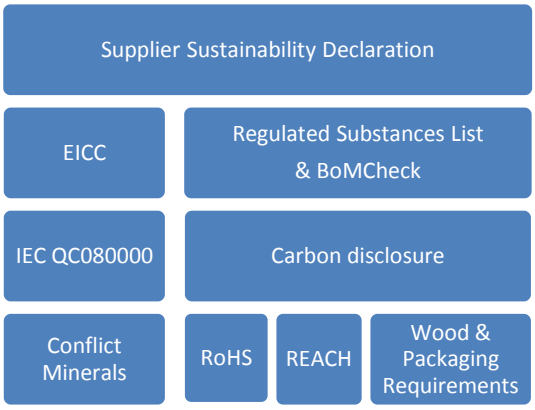

*Philips Lighting will review the status of all suppliers yearly and reclassify when necessary. The approach of Supplier Quality Management will be differentiated for the different categories of suppliers.*

# 1.5. General Requirements to Suppliers




# 1.6. Sustainability Requirements

Philips has integrated sustainability throughout the company: in the strategy, organization and culture, in manufacturing and products, and with the suppliers. Philips' policies and practices can be found at: www.philips.com/about/sustainability.
Main elements related to suppliers are the Supplier Sustainability Declaration (SSD) as part of GPA prior to admittance in the Philips supply base, the compliance to the Regulated Substances List (RSL) and the Wood- & Packaging Requirements. The requirements related to the SSD are further described in paragraph 2.3.



*We work with in house and outsourced manufacturing and this is applicable for both first and second tier suppliers. In an outsourced manufacturing environment the outsourcing party may act on Philips Lighting behalf towards 2nd tier suppliers when it comes to Compliance and Performance Monitoring and Improvement related to sustainability.*

## 1.6.1. Substance Management

The supplier shall sign-off the Philips Regulated Substances List (RSL).

The supplier shall provide evidence of compliance for products, raw materials and process materials according to the latest EU/CH RoHS and REACH requirements. Data shall be not older than one year and be measured by a third party accredited laboratory. Registration of this data is to be provided to Philips by means of BOMCheck.

Philips prefers their suppliers to be IECQ HSPM **QC080000** certified.

In addition suppliers are required to support Philips in reporting on the non-use of Conflict Minerals. Requests to provide data should be duly complied with. Suppliers may also be invited to respond to the Carbon Disclosure Supply Chain information request, which Philips will use to create transparency, understand risks and opportunities and develop a baseline for reporting carbon emissions in the supply chain.

## 1.6.2. Wood & Packaging Requirements

As part of our environmental approach towards wood and packaging, Philips Lighting requires packaging suppliers to use recycled materials to implement the final targets (paper >80%; PET plastic > 25%) and/or other certified renewable resources or bio-based materials. Sustainable wood products shall be used from responsible sourcing.

The supplier shall provide evidence of compliance (e.g. amount of recycling, weight) to Philips together with all other documents under Development Process before Commercial Release.

# 1.7. Relationship Requirements

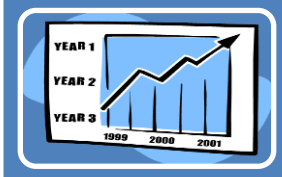
Philips Lighting believes in open and honest communications. Below are the routine communications we proactively expect from all our suppliers (commercial, preferred and partner/strategic):

**When to raise the red flag and report to Philips immediately:**

- Quality incidents in own and sub-supplier locations
- Non compliancy to environmental regulations
- Proposed material or process changes
- Proposed manufacturing location changes
- Sub-supplier capacity or quality issues that may affect Philips' deliveries
- Communicate other known and potential supply problems and allocations

**Know where you stand:**

- Supplier portal (if applicable) or other communication channels
- Global Supplier Rating System (GSRS) Report, i.e., quality, delivery, cost, responsiveness and innovation
- Overview of all complaints from Philips Lighting and its subcontractors




**Keep us informed:**

- Current manufacturing lead times
- Yield performances
- Delivery targets
- Outgoing PPM targets
- Best practices/lessons learned in supply chain excellence
- Renewal or expiration of ISO certifications
- BOMCheck

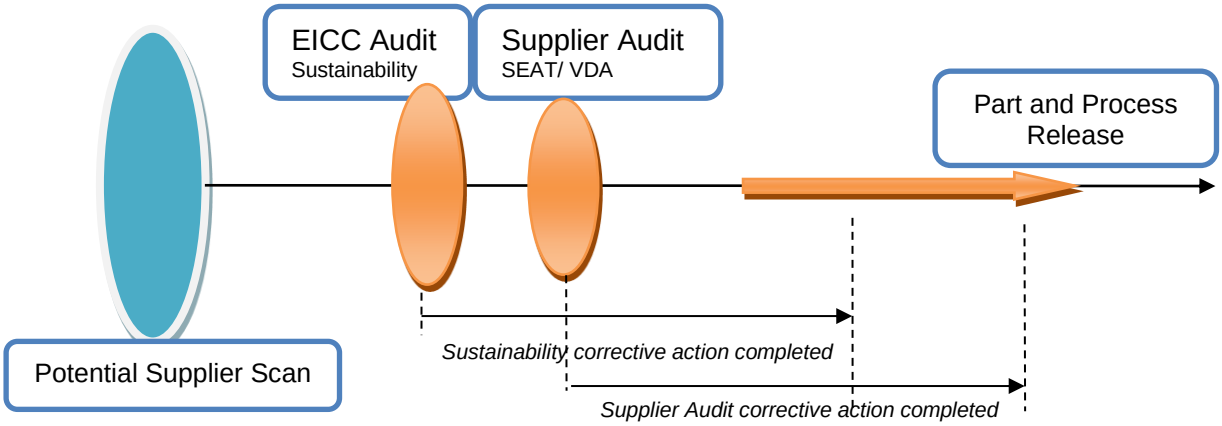
**Risk management**

- Financial situation – i.e. sharing your financial report with us at least annually and being prepared to discuss it when requested
- Capacity issues – i.e. notifying us in case of (suspected) raw material or component scarcity
- Supply continuity issues – i.e. warning us in case of a (suspected) natural or geopolitical issue which may disrupt supply

# 2. Supplier Selection and Qualification

## 2.1. Supplier Selection and Qualification Process

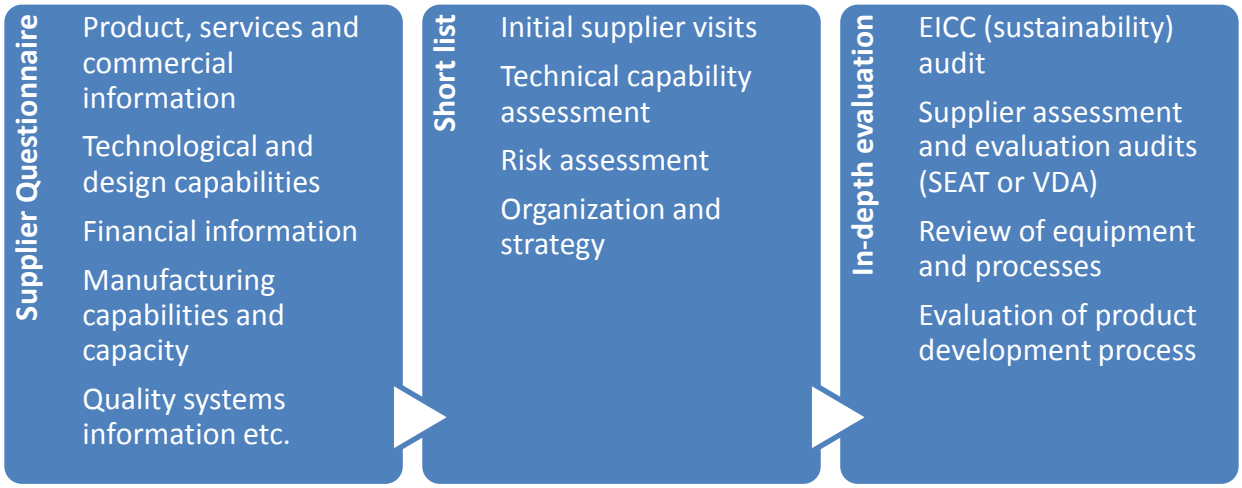
Philips Lighting maintains a supplier selection process that evaluates and identifies potential sourcing partners. Commodity Management is responsible for selecting suppliers. This is done in mutual cooperation with Supplier Quality and Procurement Engineering. The selection is based on a formal evaluation process as outlined below:




## 2.2. Potential Supplier Scan

Philips Lighting continuously executes new projects, for which new suppliers may be required. In such cases a list of requirements will be made against which a first choice of suppliers can be made. Usually, this choice results in a long list of suppliers. High level information regarding the potential suppliers will be collected.

To guarantee a detailed assessment with open discussions and to safeguard confidentiality, a Non-Disclosure Agreement (NDA) may be signed between Philips and the potential supplier.

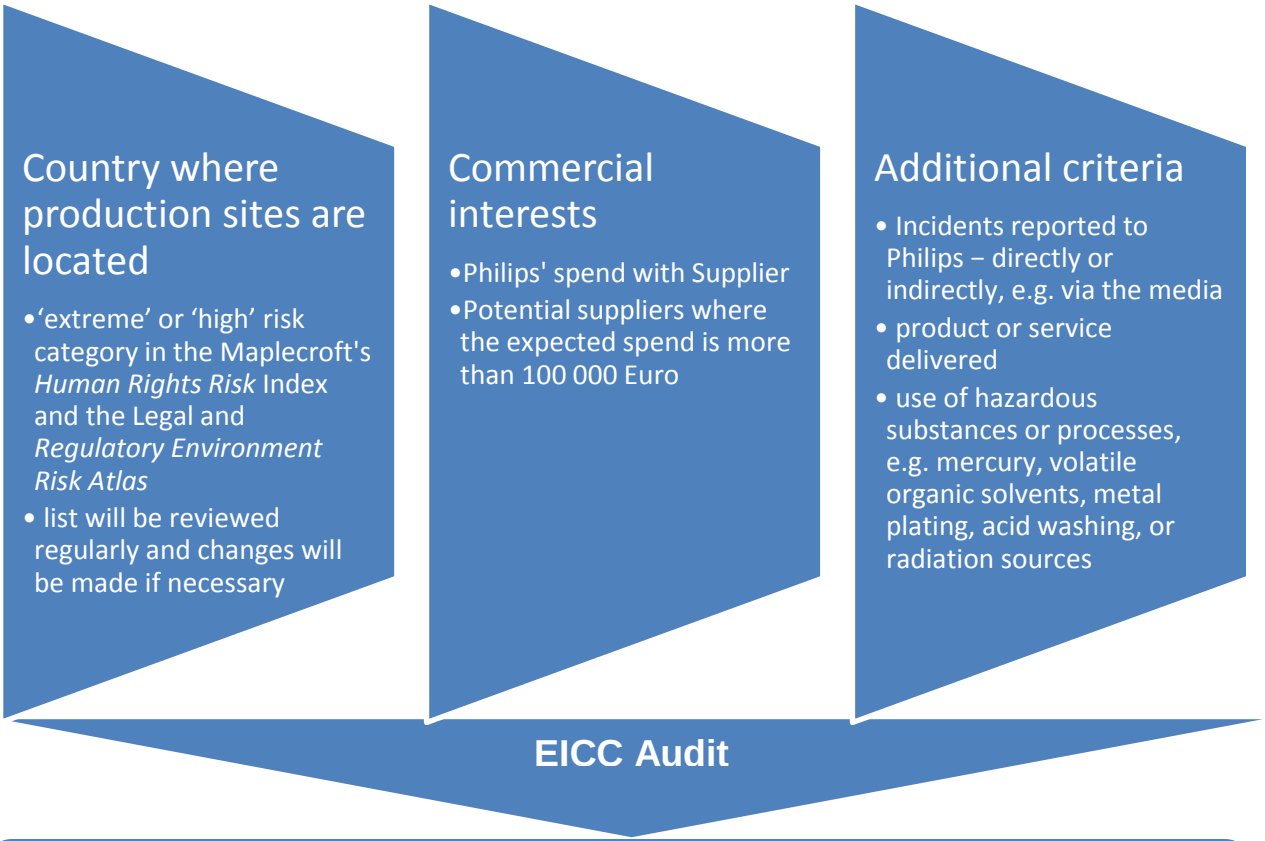



*Assessments of the supplier's development process are particularly important when on the request of Philips Lighting dedicated parts are designed. In these cases the team will assess the capabilities and risks of the supplier's development process in terms of quality, time, cost, communication and organization.*

# 2.3. EICC Audit

As a baseline for building a sustainable business relationship with our supplier, we require all our suppliers to conform to the Philips Supplier Sustainability Declaration and Regulated Substances List. This requirement forms an integral part of any commercial agreement between Philips and the supplier.

An EICC audit will be executed depending on the risk profile of a supplier. The Supplier's risk profile is determined by criteria relating to:

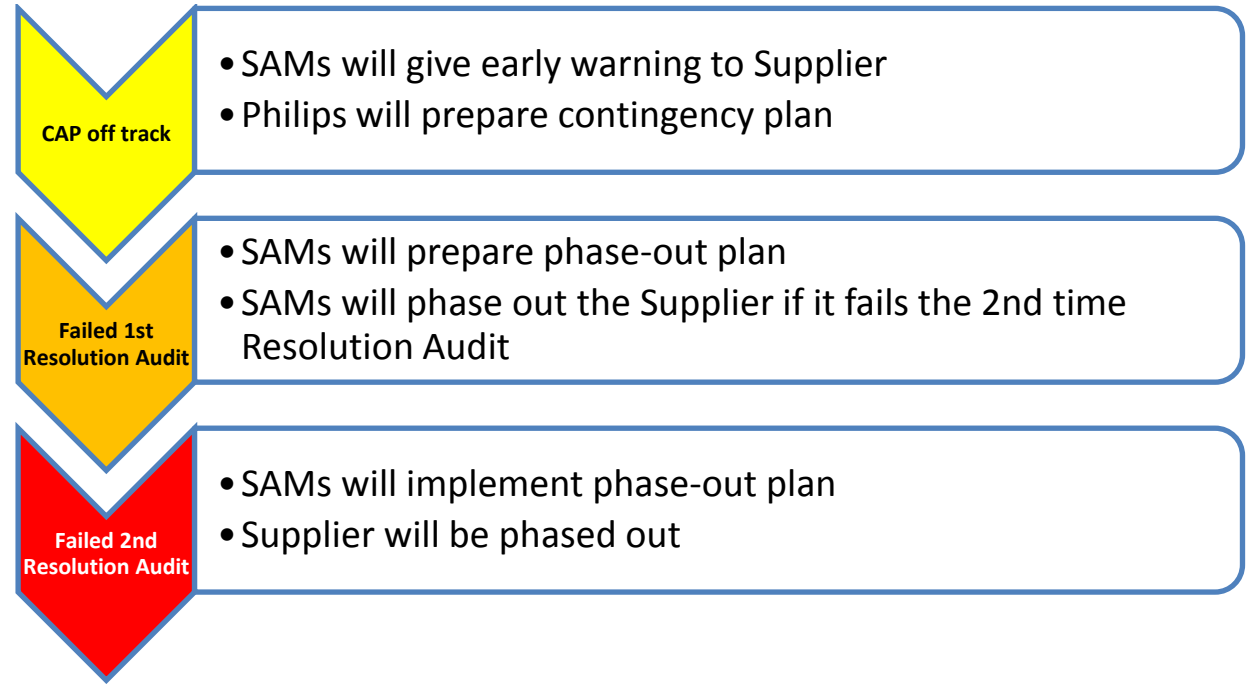



***All audits will be executed by an external agency***
***Done against the EICC tool***
***The costs need to be paid by the supplier***

The EICC audit may result in non-compliances. These non-compliances need to be closed as soon as possible but at least as per schedule below:

| | Progress check against milestones | Resolution Audit 1 | Resolution Audit 2 | New Audit Cycle |
|---|---|---|---|---|
| **Major Non-conformances** | According to milestones determined in CAP (max. 3 months) | Before end of the longest timeline agreed in the CAP | 3 months after the 1st Resolution Audit if necessary | 3 years after the Full-Scope Audit date |
| **Minor Non-conformances** | Monitoring in supplier development program | N/A | N/A | 3 years after the Full-Scope Audit date |

If Philips notices that there is a delay in the realization of the CAP, the following situations may arise:




***Potential Suppliers can only start the first shipments once all red non-conformances have been closed!***

# 2.4. Supplier Assessment and Evaluation Audits

The primary goal of executing a Supplier Audit is to collect objective evidence identifying potential risks for Philips Lighting in doing business with the supplier under investigation. Audits verify the desired state of suppliers against requirements predefined by Philips Lighting internal stakeholders.

The type and scope of the audits depends on the expected spend and the expected risks. Re-assessments are done based on estimated risks. The Supplier Audits will be done by means of a Philips Lighting Supplier audit tool (e.g. SEAT or VDA 6.3), covering several Business processes, thus ensuring the release of a capable and sustainable supplier. The scope of these audits is broad and includes elements such as Management (including HR, Quality, Improvement culture etc.), Production, Development and Engineering capabilities and Supply Chain (including Purchasing/Procurement capabilities).

The below table specifies the minimum requirements for the audits. Individual Philips entities may decide to execute more extensive audits.

| Expected SPEND | New Suppliers (Supplier release audits) | Existing Suppliers (Re-assessments) |
|---|---|---|
| < 100KEu | Outgoing inspection | None |
| 100-250 KEu | VDA 6.3. | VDA 6.3. |
| > 250 KEu | SEAT | VDA 6.3. |

*"One time Buy" and Catalogue products do not require audits; Catalogue products are those products for which Philips does not specify anything different than already in the catalogue. One time Buy products are products that are bought specifically for one project but will not be used again in other projects.*

Re-assessments are based on risk. Only those suppliers for which significant risks are identified will be re-assessed. Every year an inventory is made by the SAM/SQM to identify risk suppliers, taking into account elements such as (but not limited to):

- Change of Location
- Performance issues in the previous year
- Change of Technology
- Suspected financial problems at the supplier
- Change of Management
- Large growth in the business

At the end of the assessment, the Philips team will provide the results and areas for improvement. SEAT and VDA Audits can result in a GREEN, YELLOW or RED score. Depending on the outcome different follow up is required as shown in the table below.

| **SEAT Score** | **GREEN** | **YELLOW** | **RED** | | **CAP follow up by:** |
|---|---|---|---|---|---|
| Action | PASS (CAP) | CAP | **STOP** | | SQM |
| **VDA 6.3 Score*** | **A**<br>**Eg>90%** | **AB**<br>**80≤Eg< 90%** | **B**<br>**60≤Eg<80%** | **C**<br>**Eg < 60** | **CAP follow up by:** |
| Status | Quality- capable | Conditionally quality-capable | Conditionally quality-capable: larger gaps | Insufficiently quality capable | |
| Action | PASS<br>CAP | CAP<br>After 6 months no structural improvements: decision taken to CPO level | | **STOP** | SQM |

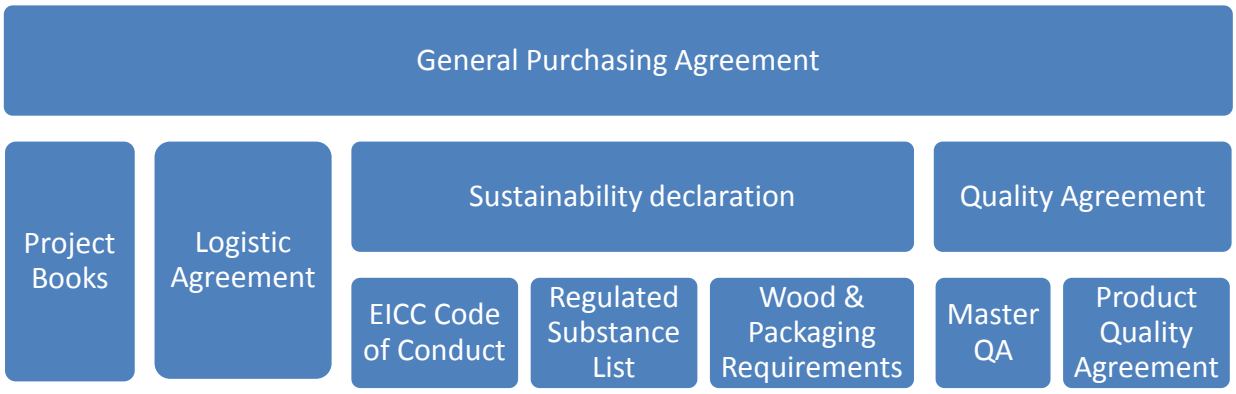
**In VDA 6.3. audits Philips Lighting will continue using the scoring criteria as in use in the previous VDA 6.3. version, except for Automotive suppliers, where the official VDA 6.3. criteria will be used.*
*Within two weeks, the potential supplier should submit a corrective action plan with timing. The potential supplier shall complete the corrective actions with the approval from the Philips team before being released in the Philips Lighting supply base. Failure to provide a suitable response in a timely manner is cause for disapproval for further consideration.*

Philips Lighting requires its suppliers to comply with the American legal requirement outlined in C-TPAT and the European AEO regulations, if exports from a supplier are expected to the USA or Europe. To verify this compliance, the PSCS (Philips Supply Chain Security) audit checklist is used.

Before the audit the PSCS checklist will be sent and discussed with the supplier. Usually this Audit is executed independently and separate from the SEAT/VDA audits. However, a first indication of PSCS capability can also be made during the SEAT audit.

# 3. Supplier Contracting

## 3.1. General Purchase Agreement




Depending on the expected size of the business and the nature of the business relationship, Philips and the new supplier may sign a General Purchase Agreement (GPA) prior to release in the Philips Lighting supply base. This agreement governs all commercial aspects of the relationship with Philips. The Quality Annex of the GPA (also called MQA) includes aspects such as change control, product release, regulated substances, quality targets, product verification, process control and warranty. Although Philips Procurement is responsible for this agreement, Supplier Quality will be consulted on the content of the contract. The Supplier Account Manager is responsible to agree with suppliers on the GPA content. GPA needs to be reviewed by Legal and SQM prior to final signing.

Philips can define the need for a Product Quality Annex (see also paragraph 4.2.), as part of the GPA and Master Quality Agreement.

## 3.2. Product Quality Agreement

The Product Quality Agreement is a legal document linked to the GPA. It may contain product/part specific quality requirements as fall off & field call rate targets, the list of critical to quality and safety parameters that should be followed, monitored and controlled by supplier and a list of PPAP elements that are required to release the product & part. The PQA should be signed off by the assigned Philips supplier quality manager, procurement manager and supplier representative no later than commercial release.

## 3.3. Approved Vendor Listing

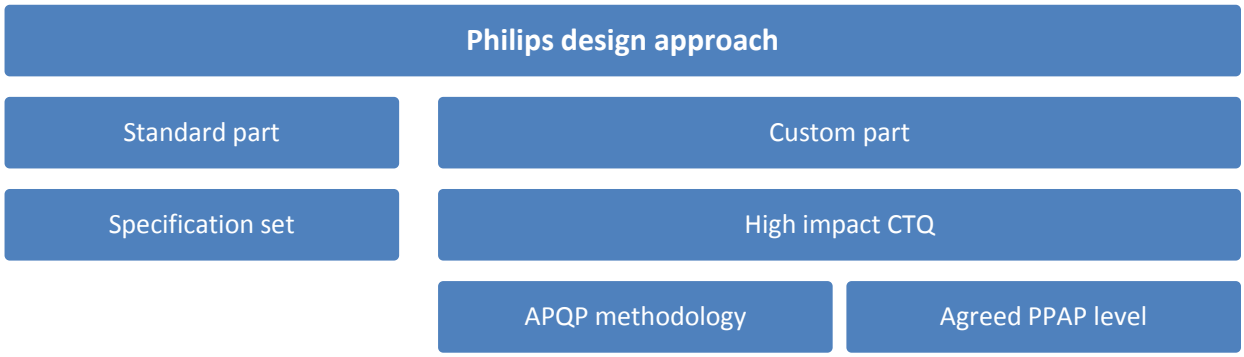
Upon confirmation that the new supplier has been qualified, the Commodity Cluster Team will send a new supplier request to the Sector Commodity Cluster Team Manager for approval. The new supplier will not be added without this approval. After a supplier has been released in the list of approved vendors, parts will have to be released separately by Philips Lighting before they can be used for mass production.

# 4. Part Design and Development

## 4.1. New Product Introduction (NPI) and APQP

There is untapped potential to accelerate collaborative innovation by aligning supplier innovation teams and strategic initiatives. Suppliers are expected to provide valuable inputs during these initiatives.

Where applicable, Philips Lighting will take the lead and share with suppliers the customer requirements on design, environmental requirements, reliability and quality goals. Upon request, suppliers should participate in design activities, e.g., Design-In workshops, Design for Assembly/Manufacturing, DfSS and/or APQP. Inputs may be requested to Design for eXcellence conventions.




*We differentiate the approach based on the impact of the Supplier's contribution to innovation and the complexity of the part involved. Philips APQP main objective is to support supplier defining a plan ensuring that a product, component or subassembly satisfies Philips requirements and to facilitate easy communication with the Supplier. It has a strong focus on manufacturing and industrialization and is complementary to Design for Six Sigma methodology used across Philips development organizations*

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By following the Philips APQP tracker, supplier is guided to build up step by step the different PPAP deliverables required for a successful part release. PPAP is one element of the APQP approach where the main focus is on delivering documentation as evidence that supplier understood Philips requirements.

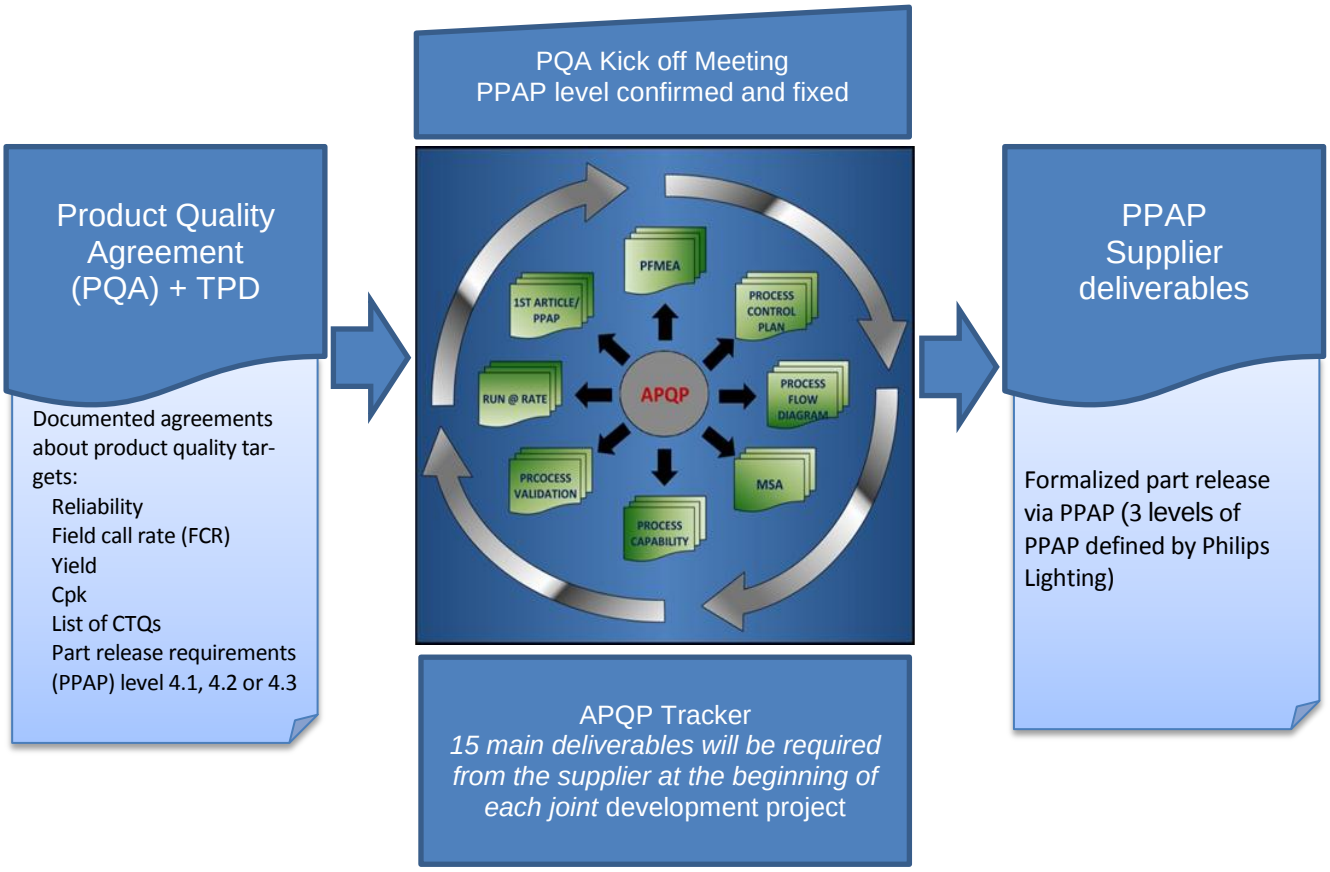
APQP allows us to match the voice of customer with the voice of the suppliers (VOC = VOS)
PPAP is the hard proof the supplier understood our requirements

*Philips APQP is based on the standard of the automotive industry (AIAG) but is customized to take into account the diversity of the product portfolio, size and volumes across different business and sectors within Philips Lighting.*

The objective is to identify, track and control the CTQs throughout the development and manufacturing process in order to meet the requirements. Each CTQ agreed is to be controlled by supplier and should be part of the supplier quality systems and as such part of the PPAP package presented by supplier as evidence of compliancy to requirements.

# 4.2. Cornerstones for the Philips APQP Approach

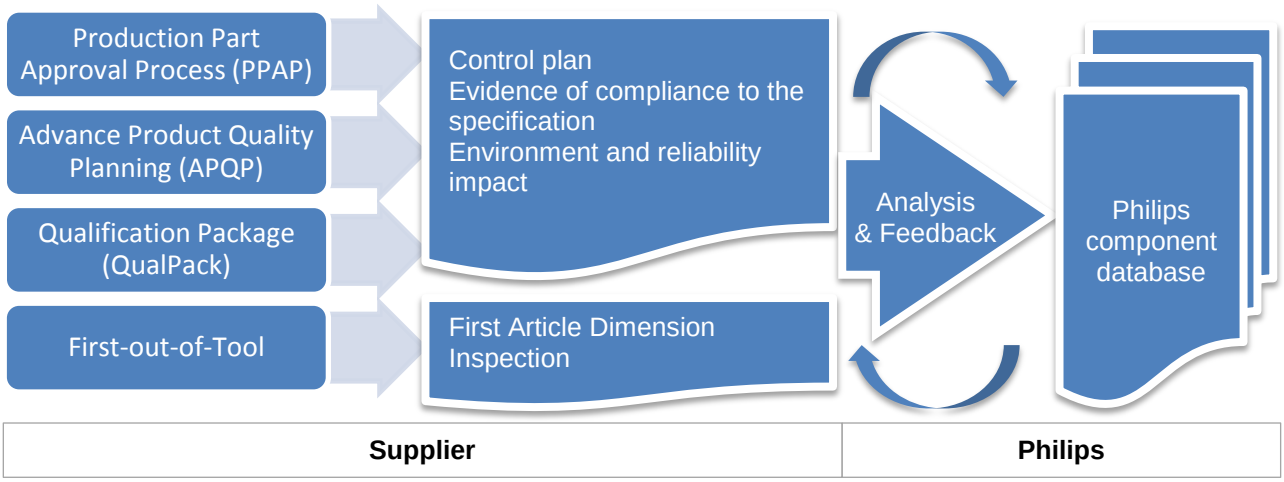
The Philips APQP approach is supported by 4 main elements:




# 4.3. Prototype Requirements

Throughout the product development stages, Engineering will request prototype samples for testing and evaluation. The supplier shall have a control plan when producing the prototype samples. The samples shall also be fully traceable for future analysis purposes and supplier shall have test data (part and process) available upon request. Non-approved suppliers may submit prototype samples for testing and evaluation, but must not ship production level parts until the supplier is approved through the Supplier Selection and Qualification Process.

# 4.4. Part Testing




*Philips Lighting will request relevant data from the supplier, e.g., control plan and evidence of compliance to the specification, the environment and reliability impact. Upon receipt, Philips Lighting will make a judgment on compliance to the PPAP/APQP/QualPack. If gaps are identified, Philips Lighting will request additional data or arrange for additional testing. Any failures found will be shared with the supplier. The supplier shall take actions to bring the part to the desired specifications. The part will have to be re-qualified before it is added into the Philips Lighting or BG specific Component Database.*

For tool related parts, First-out-of-Tool parts will be released based by means of the 'First Article Dimension Inspection' report. Process for this is:

- The supplier shall measure, at minimum 5 parts, all dimensions on the drawings
- For multi-cavity production tools, the supplier shall measure all cavities in the tool
- The supplier shall perform process capability studies on CTQs. The Cpk indices must be calculated on a minimum of 30 parts and must meet the required Cpk level as described in chapter 5.2 Supplier Process Capability Requirements

# 4.5. Production Part Approval Process

The primary objectives for Production Part Approval Process (PPAP) are:

- Ensure part meets specifications
- Ensure supplier has robust process controls
- Ensure supplier has capable processes on CTQ parameters
- Ensure supplier has the proper measurement equipment on CTQ parameters
- Ensure that supplier understands that changes require notification

To demonstrate that these objectives are consistently met, the supplier shall submit Production Part Approval Process (PPAP) documents or (only in case of semiconductor parts) Qualification Packages (QualPacks) for at least the following situations:

- A new part
- Correction of a discrepancy on a previously submitted part
- Design or process change
- Change in source of second tier supplier material
- Part modified by an engineering change to design records, specifications or materials
- Transfer or rearrangement of tooling & equipment within a manufacturing location or to other locations
- Change in manufacturing methods or production processes

- Change in second tier supplier
- Production stop for more than one year

The supplier is responsible to conduct the proper quality planning prior to PPAP or QualPack submission.

Philips has defined three PPAP levels to release components and the following details are required per each level from supplier:

| | | | Philips PPAP level 4 | | |
|---|---|---|---|---|---|
| **No** | **PPAP Elements** | **Comments** | **Level 4.1** | **Level 4.2** | **Level 4.3** |
| 1 | Design records (final drawing) | | | x | x |
| 2 | Approved engineering change documents | | | | x |
| 3 | Design FMEA | Only when supplier is design owner* | | | x |
| 4 | Process flow diagram | | | | x |
| 5 | Process FMEA | | | x | x |
| 6 | Control Plan | | | x | x |
| 7 | Measurement System Analysis (MSA) | Including round robin results when applicable | | | x |
| 8 | Dimensional Results (FOT, SOT) | | x | x | x |
| 9 | Material performance test results | Includes all tests to be performed by suppliers (reliability, temperature cycle test) | x | x | x |
| 10 | Initial process/capabilities studies (Cp/Cpk) | Including the pilot report. Philips on site participation in pilot run. | | x | x |
| 11 | Qualified Laboratory documentation | Include BOM check, RoSH other environmental requirements | x | x | x |
| 12 | Appearance approval report (AAR) | Bases on defect list agreed with Philips | x | x | x |
| 13 | Sample product parts | Send with PPAP doc for approval | | x | x |
| 14 | Master samples | Also called golden samples (to be kept at supplier production site) | | | x |
| 15 | Checking Aids | List of all relevant tools linked to CTQs (product and process) | | | x |
| 16 | Part Submission Warrant | Philips format required | x | x | x |
| | Philips Specific Requirements | | | | |
| 17 | Tooling release form | | x | x | x |
| 18 | Outgoing inspection form<br>Certificate of conformity (CoC) | * Only on request | | x | x |

## 4.5.1. Manufacturing Release

Manufacturing release is part of the PPAP process. In case PPAP is not followed, manufacturing release remains a requirement. Philips Lighting manufacturing sites shall have the opportunity to perform a trial run and provide feedback prior to the release of the new part for manufacturing. Process Engineering will then conduct the trial run and provide a Manufacturing Release Report prior to full production with the new part. Outsourced manufacturing sites will perform such a release according to their own internal procedure. The report is one of the deliverables according to PPAP (see above).

# 5. Process Release

## 5.1. Process release requirements

### 5.1.1. Supplier Process Capability Requirements

Philips Lighting requires all suppliers to have good knowledge of Statistical Process Control. The process capability requirements for all parts Critical to Quality (CTQ) are defined below:

| Capability Index | Cpk < 1.33 | 1.33 ≤ Cpk < 1.67 | Cpk ≥ 1.67 |
|---|---|---|---|
| **Comments** | Corrective action plan required<br>Production and delivery can start only after approval | No action required for existing/legacy products | Mandatory for all new designs |

*Suppliers shall demonstrate that they meet the process capability requirements in the PPAP or QualPack submission.*

*Cpk requirements are subject to change depending on the project.*

### 5.1.2. Measurement System Analysis (MSA)

The quality of measurement data produced by test equipment and gages is important to determine process and part conformance. The supplier shall establish a program for all gages to identify measurement error and how it relates to process or part conformance. Gauge repeatability and reproducibility (GR&R) can be best determined by using the average and range method for a variable gage study.

| | 0 - 10% error | 10% - 30% error | >30% error |
|---|---|---|---|
| **Gauge R&R** | Acceptable measurement system | Conditional, depending upon importance of CTQ, process capability study | The gage needs improvement and should not be used to measure control plan CTQ's |

GR&R studies are required for PPAP approval for all CTQ's identified in the PQA/MQS.

### 5.1.3. Calibration

The supplier shall establish a calibration system that will track and account for each gauge and measuring instrument individually. Established calibration intervals shall be documented, and each instrument shall be traceable to its last calibration date. Documentation shall include the actual quantitative measurements taken during the calibration, in order to monitor long-term performance.

Employees involved in using calibration equipment should have documented training on the instruments they use. Documentation of training records shall be retained for verification purposes.

Reference for Calibration shall be according ISO17025, latest edition.

### 5.1.4. Process Special Requirements

For different types of manufacturing processes special requirements may be applicable. Examples of these special requirements are:

- Temperature and humidity control
- Electro Static Discharge (ESD) protection
- Clean room conditions
- Safety products/parts
- Etc.

In general Philips Lighting will follow industry standards, but may deviate from this when this is deemed necessary. In these cases the supplier will be clearly notified.

### 5.1.5. Maintenance

All manufacturing processes require maintenance in some form or another. Philips Lighting requires suppliers to have a preventive maintenance plan in place. Corrective maintenance is expected to be monitored, analysed and reduced. Preventive and corrective maintenance records need to be kept for verification.

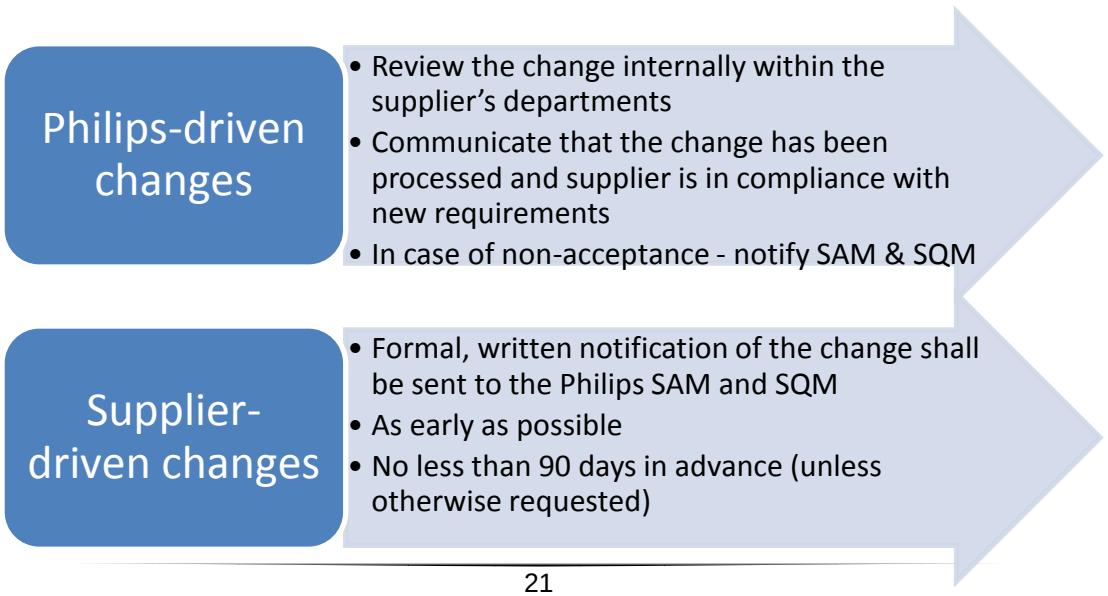
## 5.2. Supplier Application Signoff

Philips Lighting holds suppliers in high regards and recognizes them as the expert of their parts and processes. Philips Lighting depends on the suppliers to infuse this expertise into the parts and processes.

For critical parts, Philips Lighting may seek the help of the supplier to review the design to verify that the right part has been selected for the application and that there are no adverse conditions in the manufacturing processes that can negatively impact the reliability of the part. Philips Lighting will initiate this activity with the suppliers. Once the proper reviews have been conducted with no concerns identified, the supplier shall sign off on the application.

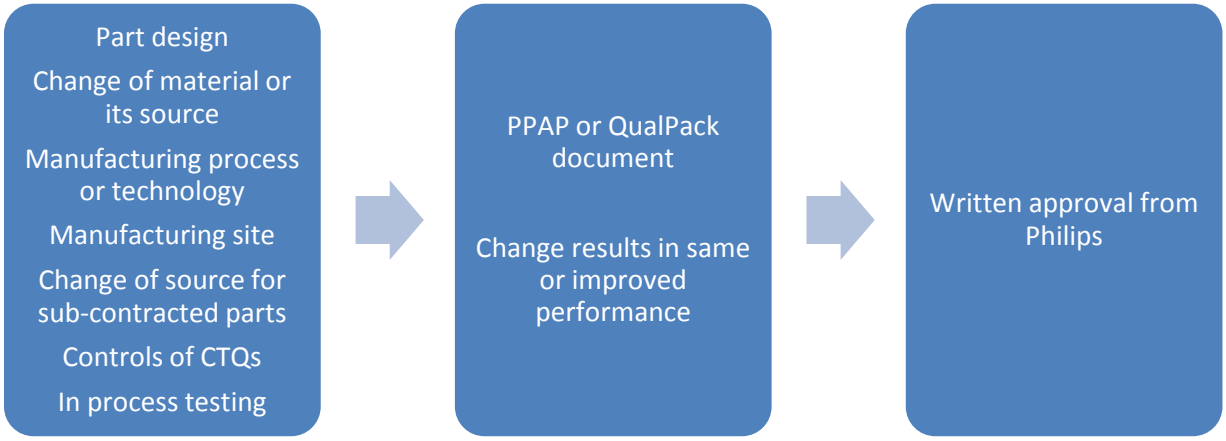
## 5.3. Change Control

There are two sources of change, Philips Lighting driven and supplier driven.



Suppliers shall demonstrate via PPAP or QualPack document that the change will result in the same or improved performance. Philips Lighting may ask for additional time and samples for testing and may schedule an on-site assessment and may request additional quality documents, e.g., risk-assessment, updated Control Plan, transfer FMEA or a Delta analyses. Suppliers shall make sure that the change is traceable, without changing or adding any visible marking on the outside of the parts.

No change is allowed without written approval from Philips Lighting




For Part Termination Notifications, the Supplier shall inform Philips Lighting twelve (12) months in advance of last planned production date and eighteen (18) month before last shipment date.
Supplier is expected to provide alternate parts and/or support in a Last Time Buy option.

# 5.4. Reliability

Suppliers shall test the reliability of the parts as agreed in PQA/MQA, specification/drawing or according international industry standards. In case of doubt supplier shall contact the Philips Procurement representative.

Supplier shall monitor and analyse reliability testing results and inform Philips Lighting immediately in case of abnormalities.

# 6. Quality Control, Incident Management and Performance Monitoring

## 6.1. Cost of Non Quality Reduction

Philips Lighting is committed to the principle of Continual Improvement and use Cost of Non Quality as a measure of our performance. Non-conforming parts are therefore to be reduced.
Both parties will actively cooperate to investigate the cause of failure of non-conforming parts and the implementation of corrective and preventive actions, and generally these assist each other in the achievement of beneficial opportunities for the reduction of Cost of Non Quality.

## 6.2. Receiving Inspection

Suppliers must focus on prevention, not detection, and strive to improve their processes and the quality of the parts. Philips Lighting will focus on improving the supply base so this non-value added activity can be eliminated.

To help reduce the receiving inspection efforts and the overall Cost of Non Quality (CoNQ), Philips Lighting may request the supplier to submit evidence of the supplier's outgoing and/or process quality control data related to Critical to Quality parameters (CTQs) and Fall Off Rate (FOR) data.

Philips Lighting or its outsourcing party may perform receiving inspection in accordance to internal procedures having an acceptance level of zero defects. Philips Lighting or its outsourcing party may reject any nonconforming parts. Final goal is to have a Direct-Ship-To-Stock way of working, but this will be only implemented for parts or suppliers with a proven track record for good quality.

## 6.3. In Process Testing

Philips Lighting strives to continually improve the quality of its products. Quality improvement teams are routinely formed to investigate root cause and eliminate problems. In-process test failures are diagnosed, repaired, and recorded. In cases where a part quality problem is suspected, the failed part will be collected and sent to suppliers via a Request for Analysis (RFA). The supplier shall analyse the failure, initiate root cause investigation, and provide corrective and preventive actions to prevent problem recurrence and report this in an 8D Corrective Action Report.

## 6.4. Analysis of Customer Returns

Philips Lighting has Customer Care as top priority and will act as quickly as possible to minimize the impact whenever issues are reported. Suppliers are considered valuable members of Philips Lighting's problem solving team. Suppliers shall have capable resources and a documented process to support a fast turnaround of customer returns. The turnaround time for the total problem resolution should be commensurate with the urgency of the problem. The resources and the contact information, i.e., names, shipping address, shipping and handling instructions, shall be identified in advance. The supplier shall provide a complete analysis report using the 8D format. Depending on the nature of the problem, more frequent, interim reports will be needed to keep all parties informed.

# 6.5. Joint Investigation at Job or Manufacturing Sites

Philips Lighting will provide full support to Customers for resolving issues. Supplier's assistance may be needed in helping to resolve the problem at Philips Lighting's Customer or Manufacturing sites. When the opportunity arises, supplier shall send the technical experts to accompany the problem investigation at these sites.

# 6.6. Traceability

The supplier shall maintain a part traceability system capable of identifying production batches and preferably single parts in manufacturing and the supply chain. This system must include design, manufacturing and quality information including relevant material and process data. This information must be made available to Philips Lighting on request.

The supplier shall make clear what the level of traceability is and what traceability ID is used. When deemed necessary specific agreements will be made e.g. for safety parts.

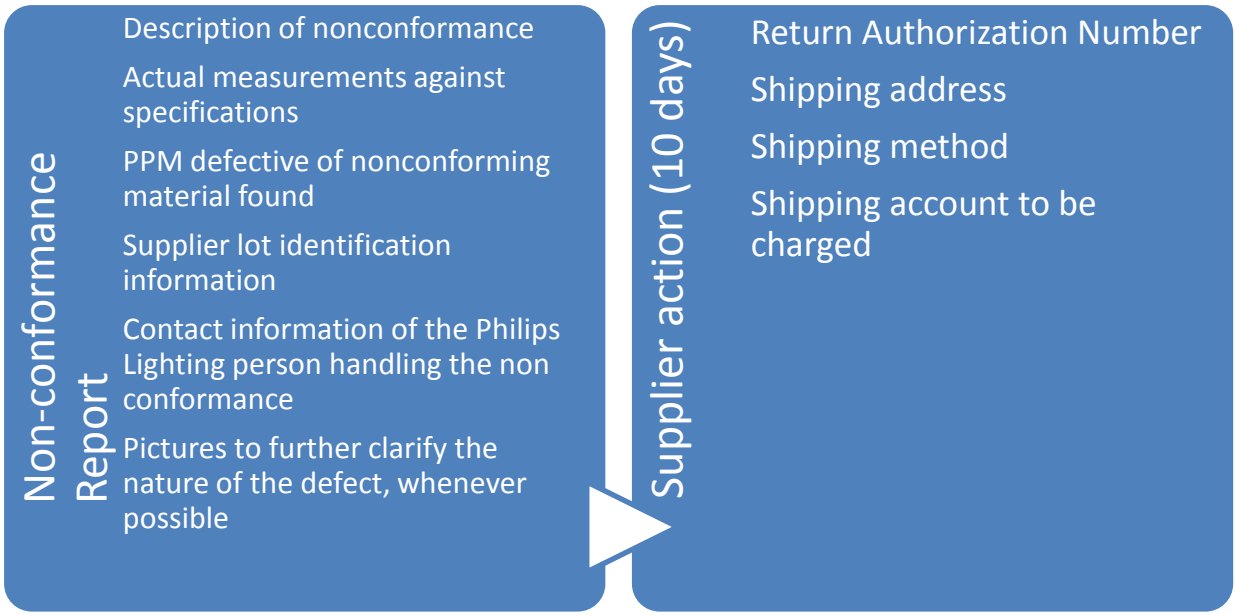
# 6.7. Part Quality

Part quality is defined as the ratio between the number of parts rejected at delivery or during the warranty period agreed between the supplier and Philips Lighting and the number of Parts supplied in a given time period. Part quality levels can be given on PPM level or percentage.

A reject is defined as a part not meeting the Part Specifications. If a part is rejected, Philips is entitled to claim damages from the Supplier in accordance with the relevant terms and conditions of the GPA and/or any applicable auxiliary agreements.

# 6.8. Non Conformance Report

In case parts are rejected the Non Conformance Report (NCR) process can be started. NCR is used to recover the costs from parts that do not meet Philips Lighting specifications.



Should the suppliers desire defect samples for analysis, it is the supplier's responsibility to make such arrangement. Not having defect samples is not a valid excuse for missing the 10-day requirement.

Philips Lighting or its outsourcing party will provide this information to Logistics for the proper return of the material. After the return, Logistics will provide Negative Receipt Number to Accounts Payable as proof of shipment. After the proper accounts have been credited, Accounts Payable will close the NCR.

# 6.9. Supplier Corrective Action Request

In addition to the Non Conformance Report, Philips Lighting or its outsourcing partner may request corrective actions from supplier. This is done via a Supplier Corrective Action Request (SCAR). The SCAR shall reference the NCR for complete non-conformance description where applicable. The SCAR can be communicated by e-mail or via a dedicated website. Instructions on how to complete the SCAR are included on the 8D Corrective Action Report.

Supplier shall comply with the following requirements, unless specified otherwise in the GPA:

| Non-conformance category | Confirmation and containment action | Root cause analysis and corrective action plan (tier 1) | Complaint solving/root cause analysis (tier 2) |
|---|---|---|---|
| Critical or safety issue* | 24 hrs | 5 calendar days** | According to agreed action plan |
| Other | 2 days | 10 calendar days** | According to agreed action plan |

* *"Critical or safety issue" is a non-conformance, which is assessed as likely to result in injury to person, material damage, environmental hazard, (potential) Philips customer complaint or other unacceptable consequences*

** *or otherwise, in case specified in the Philips Lighting complaint report*

Containment actions shall first and foremost addresses how to protect Philips' customers from injury or damage and to keep the production line from shutting down. Secondly, the supplier shall address what is to be done with the suspect stocks, i.e., at the supplier's warehouses, at Philips Lighting warehouses, and in transit between the supplier and Philips Lighting. Thirdly, the supplier shall detail the method of screening the suspected stocks, date of first delivery of safe part and how they will be distinguished from normal stock.

The Corrective Action Plan shall include the responsible person for each action and reasonable timing for completion. The supplier shall provide updates to the corrective action plan at the appropriate time. The SCAR will be closed after written approval by Philips Supplier Quality representative in charge of the complaint.

If the problem recurs within a 6-month period, Philips Lighting has the right to disqualify the part. Once a part is disqualified, Philips Lighting will explore alternatives from other qualified suppliers.

# 6.10. Cost Recovery

Philips Lighting is focused on prevention, but recognizes cost recovery caused by a supplier problem, although unpleasant, is a necessary part of business and as such part of the NCR and SCAR process. All Costs of Non Quality related to a supplier complaint shall be agreed between Philips Lighting and the supplier and credited before the complaint can be considered closed.

The Cost of Non Quality charges may include:

- Final product replacement
- Costs of excess work (rework, sorting, retest, etc.)
- Engineering costs
- Any other related costs, e.g. administration, freight, replacement costs etc

# 6.11. Cost Prevention

To emphasize Philips Lighting is focused on prevention two main activities are defined to help our suppliers avoiding Cost of Non Quality in the stages of full mass production.

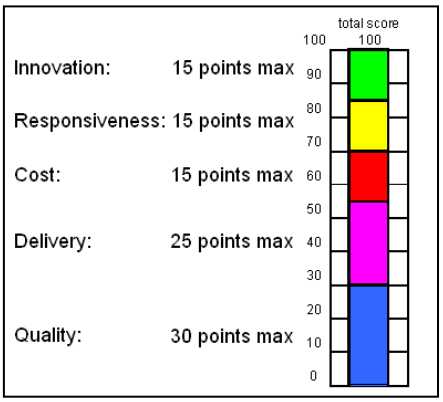
Monthly Quality Reporting can be requested from the supplier. Although this might seem additional work at first it is an effective way to join forces in avoiding CoNQ. By effectively discussing CTQs, the way to monitor them and by jointly analysing the results (potential) problems can be identified early with a minimum of related cost.

Next to Supplier Assessments during the stages of Supplier Selection, Certification and Process Release Philips Lighting believes it can help suppliers by conducting Supplier Assessments also during the stage of full mass production. These assessments are performed in a similar way, but will mostly be focused on Quality and Manufacturing aspects of a specific site, line, process or group of parts.

# 7. Supplier Development

## 7.1. Supplier Rating

The performance of our Strategic and Preferred Suppliers and selected Commercial Suppliers is evaluated in a consistent and standardized way using the Global Supplier Rating System (GSRS). The results are reported back to the suppliers as a basis for further improvement programs. Suppliers can access the results via the Internet. The relevant SAM or SQM may provide this access.




Supplier is expected to review their own performance on a monthly basis and to send a corrective action plan in case of unacceptable scores.

The performance is measured against mutually agreed expectations, as well as against other suppliers within the commodity. The sum of the score of 5 elements will be between 0 and 100 points.

| | |
|---|---|
| **Red:** | < 60 points |
| **Yellow:** | ≥ 60 and < 80 points |
| **Green:** | ≥ 80 points |

Three groups have been defined (red, yellow and green) in order to easily indicate which suppliers are performing well and which require attention (red and yellow requiring actions)

## 7.2. 2nd Tier Supplier Quality Management

To assure that the components and materials sourced by the supplier can be supplied and that the quality levels of components from these 2nd Tier suppliers meet Philips Lighting requirements, Philips Lighting requests to have insights in the supplier selection of the supply base of its supplier. Additional info is required on how the supplier manages its supply base.

The supplier must guarantee the quality of the components supplied by the 2nd Tier suppliers, appointed in a firm quality contract. Quality assurance in line can be done by outgoing inspection at the 2nd tier supplier, Incoming Quality Control at 1st tier supplier or both. Especially the key and critical components have to be taken into account. Non conformities have to be followed up via 8D reporting and problem solving (see also chapter 6). Even if 2nd tier suppliers are selected by Philips or if Philips has approved those suppliers, the 1st tier supplier remains solely responsible to ensure the 2nd tier supplier parts conform to all quality requirements. Exemption to this rule is only possible in case of explicit agreement in writing between Philips and the 1st tier supplier.

2nd tier suppliers must be regularly audited by first tier supplier. In joint meetings with Philips representatives audit results and corrective action plan will be shared with Philips.

## 7.3. General Business Reviews

Philips Lighting recognizes communication as the key to success and welcomes the suppliers to visit Philips in the headquarters and in the plants. Please schedule these informal meetings in advance. As for formal meetings, Philips Lighting has the following process:

For Partner/Strategic and Preferred Suppliers, Philips Lighting will conduct general business reviews periodically. These reviews will be scheduled in advance by Procurement/Supplier Account

Manager. They can take place at headquarters, at the plant or at supplier's location. Typical topics for discussion include:

- Review of (quality and delivery) performance (GSRS)
- Technology updates
- Sharing of business climate
- New opportunities e.g. Early Supplier Involvement (ESI)
- Upcoming changes to the business, if applicable
- Supplier site assessments

For suppliers having chronic quality, delivery or communications issues, Philips Lighting will conduct performance reviews. Depending on the nature of the issues, suppliers may be asked to come into company headquarters or at the plant on short notice. The suppliers shall be fully prepared to discuss their corrective action plan on how to rectify the situation expeditiously. Follow up meetings may be required and will be defined in the meeting. If the problem is not corrected, more serious actions will be taken.

# 7.4. Continual Improvement

Philips is committed to continually improve its performance and that of its supply base. To support these activities, Philips may run supplier (quality) development programs. Participation in these development programs is generally on a voluntary basis. However, in case of structural underperformance of a supplier, participation in the program may be required to remain qualified as a supplier.

Supplier Quality Development programs typically consist of the following steps:

- Announcement of the development program and approach to suppliers to investigate their willingness to participate
- Self-assessment by the supplier, using a standard tool
- Quick scan by Philips Lighting representatives to verify the self-assessment or identify first quick wins
- Formulation of an improvement plan by the supplier
- Implementation of the improvement plan with regular follow up and review by Philips.

In addition to the above, Suppliers may also be invited to participate in the internal Philips Business Improvement Competition.

# 7.5. Joint Quality Managers/Joint Quality Engineers

To further optimize the cooperation between Philips Lighting and the Supplier, a Joint Quality Manager (JQM) is requested to be appointed on the highest level at the supplier side and/or a Joint Quality Engineer (JQE) at a dedicated site. The JQM/JQE will be the first contact point for Philips Lighting related to Quality issues. This individual must be sufficiently empowered and qualified to ensure a quick resolution of problems and to drive continual improvement programs at the Supplier.

# 7.6. Supplier (Quality) Workshop

Philips Lighting conducts Supplier (Quality) Workshops as a way to communicate to a large audience any important changes to (quality) requirements or any new (quality) concepts. These are not regularly scheduled events. The suppliers shall keep the company contacts updated so invitations can be sent to the proper person when these events are held.

# 7.7. Supplier Recognition

Philips Lighting wants to recognize outstanding achievements and extraordinary support from its suppliers. The way this is done can be different from region to region, ranging from an official Letter of Recognition to being invited to Philips Lighting Supplier Day.

# 7.8. Exit Procedure

Changes in business environment will sometimes lead to changes in business objectives and strategies. There may be a time when the business relationship with a supplier will end.

In cases where a supplier is no longer able to serve the needs, Philips Lighting will work to protect the customers against any production interruption. Philips Lighting asks the suppliers to provide as much advance notice as possible. The supplier should maintain the current supply until a viable alternate source can be found.

In case of major quality or delivery deficiencies, Philips Lighting will notify the suppliers of their situation. Philips Lighting will allow the suppliers to work out the quality issues within a reasonable amount of time. Philips Lighting will be following up closely with their action plan. If and when business relationships have to end, Philips Lighting will act swiftly to protect the customers.

After the business relationship has ended, an ex-supplier shall go through the same Supplier Selection process as a new supplier before they can be considered for re-entry into the supply base. The ex-supplier cannot be considered as a new supplier on the Approved Vendor List (AVL) within 18 months after the previous business relationship has ended, unless Philips Lighting decides differently in exceptional cases.

# Glossary

| | |
|---|---|
| **8D** | Eight Disciplines Problem Solving - method to approach and to resolve problems. It establishes a permanent corrective action based on statistical analysis and focuses on the origin of the problem by determining its root causes |
| **APQP** | Advanced product quality planning - a framework of procedures and techniques used to develop products in industry |
| **APQP tracker** | The APQP tracker is used to facilitate communication with the supplier and between all functions involved in the project. It ensures that all required steps are completed on time, with a high quality of content during product development process. The tracker has a detailed supplier timing chart synchronized with Philips milestones |
| **BOMCheck** | The BOMCheck initiative is led by the European trade association COCIR and delivered by international environmental consultancy ENVIRON. Philips uses BOMCheck portal to list restricted and declare substances for regulatory compliance (REACH, RoHS, Batteries, Packaging etc.) in our products |
| **CAP** | Corrective Action Plan follow up |
| **Carbon Disclosure Supply Chain information request** | CDP's supply chain program is an annual process that results in consistent information from suppliers on climate- and water-related strategy and action |
| **Conflict Minerals** | Conflict minerals are minerals mined in conditions of armed conflict and human rights abuses, mostly in the eastern provinces of the Democratic Republic of the Congo. Companies subject to the conflict minerals requirements must disclose conflict minerals information on a calendar year basis |
| **CoNQ** | Cost of Non-Quality |
| **Cpk** | The process capability index or process capability ratio is a statistical measure of process capability: the ability of a process to produce output within specification limits |
| **Critical or safety issue** | A non-conformance, which is assessed as likely to result in injury to person, material damage, environmental hazard, (potential) Philips customer complaint or other unacceptable consequences |
| **CTQ** | Critical to quality |
| **DfSS** | Design for Six Sigma - development methodology |
| **DfX** | Design For X - X = manufacturability, test, service, procurement, assembly, flexibility, environment, recycling, etc. |
| **EICC** | Electronic Industry Code of Conduct |
| **EICC tool** | Can be found on the Philips sustainability website: http://www.philips.com/shared/assets/company_profile/downloads/Philips-Supply-Sustainability-Audit-tool.pdf |
| **ESI** | Early Supplier Involvement |
| **FOR** | Fall Off Rate, defined as the ratio between the number of produced bad parts/number of produced parts expressed in parts per million |
| **FCR** | Field call rate, defined as the moving annual total number of products returned from the field/moving annual total number of delivered products to the field, expressed as a percentage |
| **FMEA** | Failure Mode and Effects Analysis |
| **GPA** | General Purchasing Agreement |
| **GSRS** | Global Supplier Rating System - main tool used to continuously measure, monitor and feedback performance of supplier. Details on how each element is rated can be found in: http://www.philips.com/about/company/businesses/suppliers/gsrs_training_modules.page |

| | |
|---|---|
| **JQE/JQM** | Joint Quality Engineer/Joint Quality Manager (see chapter 7.5) |
| **MSA** | Measurement System Analysis: A specially designed experiment that seeks to identify the components of variation in a measurement. A measurement systems analysis evaluates the test method, measuring instruments, and the entire process of obtaining measurements to ensure the integrity of data used for analysis (usually quality analysis) and to understand the implications of measurement error for decisions made about a product or process. MSA analyzes the collection of equipment, operations, procedures, software and personnel that affects the assignment of a number to a measurement characteristic. |
| **MQA** | Master Quality Agreement |
| **NCR** | Non Conformance Report |
| **PPAP** | Production part approval process (PPAP) is used to demonstrate that all customer engineering design records and specification requirements are properly understood by the supplier and that the process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate. The PPAP process is described in paragraph 5.3 in more details. |
| **PQA Kick off meeting** | Under the lead of the assigned project SQE, a kick off meeting is organized with the supplier's team to discuss relevant project information which is documented in the PQA and first page of APQP tracker. Following to this meeting, follow up sessions are organized to review the technical product documentation and the list of CTQs. The purposes of these meetings are that the Supplier understands early enough all the specifications of the part to be supplied to Philips and that the Supplier agrees on the feasibility of the technical requirements before any investment is done. |
| **QualPack** | Qualification package - set of data and documents (procedures, process maps, forms, etc.) required for production release |
| **REACH** | Registration, Evaluation, Authorisation and Restriction of Chemicals. REACH addresses the production and use of chemical substances (i.e. everything made of atoms), and their potential impacts on both human health and the environment. |
| **RSL** | Regulated Substances List |
| **RFA** | Request of Analysis |
| **Risk countries** | As described and assessed by Maplecroft. The latest list of risk countries can be found on the following Philips website: http://www.philips.com/about/sustainability/oursustainabilityfocus/suppliersustainability.page |
| **RoHS** | Restriction of Hazardous Substances Directive 2002/95/EC, short for Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment |
| **SAM** | Supplier Account Manager - Philips focal point of contact for designated supplier(s) |
| **SEAT** | Supplier Evaluation and Assessment Tool |
| **SQM** | Supplier Quality Manager |
| **SCAR** | Supplier Corrective Action Request |
| **SSD** | Supplier Sustainability Declaration. More details can be found in http://www.philips.com/about/company/businesses/suppliers/suppliersustainabilitydeclaration.page The Supplier Sustainability Declaration is based on the Electronics Industry Citizenship Coalition (EICC) code of conduct, supplemented with stricter requirements on collective bargaining and freedom of association, in line with the Philips General Business Principles |
| **VDA** | Verband der Automobilindustrie. VDA 6.X regulations are initially designed for organizations in the (automotive) supply chain to provide a holistic quality management and certify carmakers, their suppliers and the associated services and service establishments in a consistent and comparable assessment of their quality management systems |