Supplier Quality Manual
SCM-QUALITY-741 Rev 00

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<table>
<thead>
<tr>
<th>Rev</th>
<th>Date</th>
<th>Created/Revised By</th>
<th>Summary</th>
<th>Approvers</th>
</tr>
</thead>
</table>
# Table of Contents

Supplier Quality Manual ........................................................................................................ 3  
1. Introduction .......................................................................................................................... 3  
2. Scope ..................................................................................................................................... 3  
3. Related Documents .............................................................................................................. 3  
   3.1 Related Tools .................................................................................................................... 4  
4. Glossary ................................................................................................................................. 4  
5. Supplier Responsibilities ....................................................................................................... 4  
6. Quality System Requirements ............................................................................................ 5  
7. Supplier Confidentiality ........................................................................................................ 5  
8. Supplier Assessment ............................................................................................................. 5  
9. Product Quality Planning ..................................................................................................... 5  
10. First Article Inspection (FAI) ........................................................................................... 6  
11. Production Part Approval Process (PPAP) ....................................................................... 6  
12. Product and Process Changes .......................................................................................... 6  
13. Deviation Requests ............................................................................................................ 7  
14. Corrective Action Request .................................................................................................. 7  
15. Containment ....................................................................................................................... 8  
16. Supplier Development ....................................................................................................... 8  
17. Supplier Performance ........................................................................................................ 8  
18. Supplier Award .................................................................................................................. 9  
19. Additional Terms and Conditions .................................................................................... 9  
20. Records ............................................................................................................................... 9
1. Introduction

It is Purcell Systems’ intent to develop partnerships with suppliers who provide parts, materials, processes, and services consistently to specifications at a competitive price per a defined delivery schedule.

The purpose of this manual is to document Purcell Systems’ supplier quality requirements and expectations and to define specific quality management, communication, and reporting processes.

2. Scope

This manual applies to a supplier that supplies or processes production parts for Purcell Systems.

3. Related Documents

- GR209 Generic Requirements for Product Change Notices (PCNs) [http://telecom-info.telcordia.com](http://telecom-info.telcordia.com)
- OPS-STANDARD-001 Manufacturing Workmanship Standard Vol 1: General Quality Requirements
- OPS-STANDARD-002 Manufacturing Workmanship Standard Vol 2: Workmanship Requirements
- OPS-STANDARD-003 Manufacturing Workmanship Standard Vol 3: Rework
- OPSF-CARRIERS-001 Purcell Systems – U.S. Domestic & International Inbound Freight Routing Guide Requirements
- QMS-CAR-852 Corrective and Preventive Action Procedure
- QMS-RECORDS-424 Control of Records Procedure
- SCM-FAI-824 First Article Inspection (FAI) Procedure
- SCM-PART-741 Production Part Approval Procedure
- SCM- SPECDEV-743 Specification Deviation Procedure
- SCM-SUPPLIER-740 Supplier Qualification Procedure
- SCMF-CAR-001 Supplier Corrective Action Request Form
- SCMF-COATING-001 Coating Line Assessment Questionnaire
- SCMF-ESD-001 ESD - Assessment Questionnaire
- SCMF-SPECDEV-001 Specification Deviation Form
- SCMF-SUPSCORE-001 Supplier Quality and Delivery Scorecard Form
- SCMF-SURVAUD-001 Supplier Survey and Audit Report Form
- SEP-CABLE-32 Electrical Cable Assembly Requirements Standard Engineering Procedure
• SEP-FTP-17 FTP Process Standard Engineering Procedure
• SEP-GASKET-35 Gasket Material and Adhesive Standard Engineering Procedure
• SEP-INSULATE-37 Insulation and Adhesive Standard Engineering Procedure
• SEP-METAL-02 Sheet Metal Color, Finish and Hardware Specification Standard Engineering Procedure
• SEP-TRACE-39 Material Traceability and Marking Requirements Standard Engineering Procedure

3.1 Related Tools

• ISO-9001 International Organization for Standardization
• TL9000 Telecom Quality Management System

4. Glossary

DFMEA: Design Failure Mode and Effects Analysis.
DPPM: Defective Parts Per Million.
NCR: Nonconformance report.
OTD: On-time delivery.
PFMEA: Process Failure Mode and Effects Analysis.
PPAP: Production Part Approval Process.
QBR: Quarterly Business Review.

5. Supplier Responsibilities

It is the supplier’s responsibility to understand and ensure conformance with this manual and the applicable quality policies, procedures, and work instructions of Purcell Systems and its contract manufacturers.

Work performed by a supplier’s sub-tier/sub-contract must also meet the requirements of Purcell Systems’ quality, procedures, and work instructions. It is the supplier’s responsibility to flow-down these requirements to sub-tier/sub-contract suppliers.

Suppliers are expected to meet workmanship, traceability, and shipping requirements per:

• “Manufacturing Workmanship Standard, Vol. 1: General Quality Requirements” (OPS-STANDARD-001)
• “Manufacturing Workmanship Standard, Vol. 2: Workmanship Requirements” (OPS-STANDARD-002)
• “Manufacturing Workmanship Standard, Vol. 3: Rework Requirements” (OPS=STANDARD-003)

Note: Suppliers of commercial-off-the-shelf (COTS) parts are exempt from meeting workmanship requirements.
• “Material Traceability and Marking Requirements Standard Engineering Procedure” (SEP-TRACE-39)
• “Purcell Systems – U.S. Domestic and International Inbound Freight Routing Guide” (OPSF-CARRIERS-001)

Note: Other requirements are noted within this manual, or on purchase orders, and/or product drawings/models.

It is the suppliers’ responsibility to request and review Purcell Systems’ documents and forms referenced in Section 3, “Related Documents”. Documents may be posted in the suppliers’ FTP site per the “FTP Process Standard Engineering Procedure” (SEP-FTP-17).

6. Quality System Requirements

Purcell Systems encourages suppliers to develop quality systems that provide for continuous improvement and emphasize defect prevention while reducing variation and waste. Suppliers are strongly encouraged to pursue certification of compliance with ISO 9001, TL9000, or an equivalent quality management system. Some suppliers may be required to have ISO 9001 certification or show evidence that their quality system is compliant with ISO 9001.

7. Supplier Confidentiality

Documents furnished by Purcell Systems to a supplier are solely for the purpose of doing business with Purcell Systems. These documents must be controlled by the supplier and must not be transmitted to others without the consent and approval of Purcell Systems per non-disclosure agreements.

8. Supplier Assessment

Purcell Systems’ Supply Chain Management team maintains a supplier selection and sourcing process that evaluates and identifies potential sourcing partners per the “Supplier Qualification Procedure” (SCM-SUPPLIER-740).

Suppliers must be capable of meeting the following applicable requirements:

• Quality
• Delivery
• Cost
• Environmental and health
• Continuous improvement

After the initial screening process is completed, the supplier may also be requested to complete:

• The “Supplier Survey and Audit Report Form” (SCM-SURVAUD-001)
• The “Coating Line Assessment Questionnaire” (SCMF-COATING-001), if applicable.
• The “ESD Assessment Questionnaire” (SCMF-ESD-001) if applicable.

An onsite audit may be conducted by Purcell Systems to confirm acceptable processes are in place and being followed.

9. Product Quality Planning

Purcell Systems may help facilitate formal quality planning activities with a supplier to communicate product quality expectations. These activities can also help verify that the supplier
has adequate process controls in place to maintain an acceptable level of capability to ensure overall product quality and continuous improvement.

Quality planning elements may include the following:

- Production Part Approval Process (PPAP)
- Process flow charting
- Root cause analysis
- Design Failure Mode & Effects Analysis (DFMEA)
- Process Failure Modes & Effects Analysis (PFMEA)
- Process capability studies
- Measurement Systems Analysis (MSA)
- Design reviews
- Prototype builds
- Packaging evaluations
- Process Control Plan

10. First Article Inspection (FAI)

The purpose of the first article inspection (FAI) is to validate that the supplier’s production processes have the capability to meet Purcell Systems’ specifications and quality requirements.

Unless otherwise waived, suppliers must conduct and provide evidence of a first article inspection on parts utilizing intended production equipment, tooling, and processes per the “First Article Inspection (FAI) Procedure” (SCM-FAI-824).

11. Production Part Approval Process (PPAP)

The purpose of the production part approval process (PPAP) is to:

- Ensure that a supplier can meet the manufacturability and quality requirements of the parts supplied to Purcell Systems.
- Provide evidence that Purcell Systems’ engineering design and specification requirements are clearly understood and fulfilled by the supplier.
- Demonstrate that the established manufacturing process has the potential to produce a part that consistently meets all requirements during the actual production run at the quoted production rate.

Purcell Systems determines which suppliers and parts require a PPAP and a supplier is expected to meet the requirements as specified per the “Production Part Approval Process” (SCM-PART-741).

12. Product and Process Changes

Purcell Systems must control products and services provided by our suppliers based on approved and validated products and processes.

Purcell System requires notification and written approval of any proposed changes before implementing such changes per GR209 Generic Requirement for Product Change Notices or equivalent. Notification must be provided to Purcell Systems in writing with acknowledgment of notification.
**Note:** A PCN is required for discontinuing products, manufacturing location changes, change in manufacturing process, or other significant changes. Product Change Notice (PCN) notifications must be sent to Supplier-PCN@purcellsystems.com

Conditions requiring Purcell Systems notification include, but are not limited to, the following:

- Change of material, not approved on current drawing or specification
- Production parts produced at a new facility
- Significant product or process changes (internal or externally by sub-suppliers)
- Change of raw material suppliers or sub-supplier for outside services (heat treat, plating, etc.)
- Change in test/inspection methods (techniques)
- Change in engineering drawings or specifications
- Discontinuing of products

### 13. Deviation Requests

If a supplier manufactures product that does not conform to requirements and wishes to supply it to Purcell Systems, a deviation request must be submitted and approved per the “Specification Deviation Procedure” (SCM-SPECDEV-743).

Deviation requests must include descriptive details of the nonconformance and either the number of parts affected, or the timeframe to which the temporary deviation applies.

Nonconforming product may not be shipped by the supplier prior to documented approval of the deviation request by Purcell Systems.

**Note:** Notification is required for product drawing, specification, or PPAP deviations. The supplier must complete a Specification Deviation Form (SCMF-SPECDEV-001) or supplier equivalent and submit to the appropriate Purcell Systems’ Buyer or Procurement Engineer.

### 14. Corrective Action Request

Upon receipt of nonconforming material, Purcell Systems may issue a Corrective Action Request (CAR) per the “Corrective and Preventative Action Procedure” (QMS-CAR-852).

Nonconforming material may be identified during incoming inspection, audit, assembly, customer returns, first article inspections, and other opportunities as applicable.

Purcell Systems reserves the right to sort suspect material within a lot of material rather than reject the entire lot to avoid shutdown of its production processes. The supplier may be asked to sort defective lots at their location (with return) if time permits. Alternatively, the supplier may be required to do the sort at Purcell systems or the end customer facility.

Upon receipt of a CAR, the supplier must:

- Implement containment of suspect/defective material or services to prevent unintended use by Purcell Systems.
- Inform Purcell Systems of the suppliers plan to replace suspect/defective material or service.
- Provide to Purcell Systems the short-term corrective actions with regard to producing additional material or undertaking additional services without defects.
- Send Purcell Systems the initial containment response within three business days.
Within 14 calendar days of receiving the notification of suspect/defective material or services, the supplier must:

- Define and verify the root cause(s) of all defects.
- Submit a plan to implement permanent corrective action(s) to mitigate or eliminate the root cause(s).
- Submit a plan to verify and validate the permanent corrective action(s).

In the event that the complexity of the process prevents a timely root cause discovery, the supplier must provide a plan to identify the root cause. Purcell Systems will review the CAR response and accept or reject the corrective action plan and communicate this to the supplier.

If Purcell Systems rejects the proposed corrective action plan, details regarding rejection will be provided. The supplier’s resubmission of rejected CAR response is required within five business days of the supplier’s receipt of Purcell Systems’ notification of rejection.

Purcell Systems reserves the right to perform verification of the effectiveness of the corrective action at the supplier’s facility which may include review of process maps, PFMEA, control plans, and process capability data before and after corrective actions are implemented.

The supplier must complete and submit a “Supplier Corrective Action Request Form” (SCMF-CAR-001) or equivalent to the responsible Purcell Systems Procurement Engineer for review of adequacy and effectiveness.

### 15. Containment

Suppliers are responsible for developing processes to protect Purcell Systems from receiving material that does not meet its quality requirements and specifications.

### 16. Supplier Development

Supplier development activities at Purcell Systems involve working closely with key suppliers to achieve the following supplier results:

- Process control improvements
- Quality system improvements
- Product quality improvements
- Delivery performance improvements
- Cost reductions
- Supply chain effectiveness improvements
- Lead time improvements
- Productivity improvements
- Capacity increases
- Supply chain optimization

### 17. Supplier Performance

Purcell Systems recognizes supplier achievement on a regular basis using measured results and takes the appropriate action regarding expanded business or de-sourcing based on these results.
To review performance, meetings may be held with suppliers including: Quarterly Business Reviews (QBRs), supplier performance improvement meetings, executive meetings, etc.

Our supplier performance metric processes include, but are not limited to, the following key measures.

- Quality – Defective Parts Per Million (DPPM)
- Quantity of Defects
- Delivery – On-time delivery (OTD)
- Quantity of nonconformance reports (NCRs)

18. Supplier Award

Annually, Purcell Systems recognizes its best Key Suppliers with three different awards: The Gold Supplier Award, the Silver Supplier Award, and the Bronze Supplier Award.

Key Suppliers are scored per the “Supplier Quality and Delivery Scorecard” (SCMF-SUPSCORE-001).

Each of the supplier award winners creates value for Purcell Systems in various ways, not only from stellar delivery and quality performance, but through innovative approaches which include:

- Cost and inventory management
- New product development and technical support
- Increased capacity for rapid growth and shorter lead-times
- Increased factory productivity
- Energy reduction
- Contingency planning/enterprise risk management
- Customer service
- Waste reduction
- Supporting localization efforts in-country

Suppliers that achieve the highest levels of performance and exceed rigorous standards are considered for the Gold Supplier Award. This award is only given to a handful of Premier Suppliers who Purcell Systems considers the “best of the best”. Each year Purcell Systems continues to raise the bar on performance and consequently, the process becomes more selective.

19. Additional Terms and Conditions

Additional terms and conditions for the purchase of goods and services are located on the Purcell Systems’ website.  www.purcellsystems.com/supplier-diversity

20. Records

All supplier records must be complete, dated, legible, clearly identified to the activity or event they record, and readily available upon request. Records are maintained per the “Control of Records Procedure” (QMS-RECORDS-424).