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DOCUMENT TITLE

Supplier Quality Assurance Manual

PURPOSE

To establish a quality requirements and guidelines for Suppliers doing business with Orchid Monroe

REVISION HISTORY

Revision	Change Description	Effective Date
0	New procedure	06/18/12
1	Updated Performance Rating Criteria	07/14/14
2	Updated requirement for delivery	02/19/16
3	Updated requirement for Materials Use Restrictions	02/19/16

APPROVALS:

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1. **OVERVIEW**

A. **Scope**

The ORCHID MONROE, LLC Supplier Quality Assurance Manual applies to those companies which supply materials and subcomponents intended for direct inclusion into finished products for the automotive industry, or aid in production related processes. These requirements are designed to supplement the requirements ORCHID INTERNATIONAL for purchased material¹ (<http://orchidinternational.com/orchid/html/suppliers.php>).

1. Suppliers are responsible in reviewing and adhering to the Terms and Conditions, Code of Conduct, Environmental Requirements, and Supplier Requirements Manual.

B. **Applicability**

This document and current editions of the following quality system models, detail the system requirements for supply of product to ORCHID MONROE, LLC

- TS/ISO 16949
- ISO 9001
- Production Part Approval Process (PPAP)
- Advanced Product Quality Planning (APQP)
- Statistical Process Control (SPC)
- Potential Failure Mode and Effects Analysis (PFMEA)
- Measurement Systems Analysis
- ORCHID MONROE, LLC customer specific requirements as appropriate: GM, Ford Q1, etc.)

The above documents are available internationally via AIAG USA. All ISO related documents may be obtained from SAI-Global.

C. **Quality System Certification**

ORCHID MONROE, LLC requires that suppliers shall be third party certified to a current edition of ISO 9001 as a minimum, unless otherwise approved by ORCHID MONROE, LLC's customers.

Preferred alternative is a current edition of ISO/TS 16949

D. **Environment**

ORCHID MONROE, LLC is committed to the continual improvement of its Environmental Management System, certified to a current edition of ISO14001, and encourages and supports suppliers who follow sound environmental principles.

E. **Materials Use Restrictions**

Where customer drawings stipulate materials use restrictions, International Material Data System Global (IMDS) shall be applied regardless of the customer.

International Material Data System Global is an automotive industry material data system which is available on the world-wide-web at the following location

<http://www.mdsystem.com/index.jsp>

Product supplied to Orchid Monroe, LLC must comply with each of the following: REACH (EC 1907/2006), Restriction of Hazardous Substances Directive 2002/95/EC, (RoHS 1) & Dodd–Frank Wall Street Reform and Consumer Protection Act (Pub.L. 111–203, H.R. 4173)

Clarification

Clarification of any of the requirements in this document may be forwarded to the attention of the ORCHID MONROE, LLC Purchasing Department.

F. Critical / Safety Characteristics

Critical / Safety Characteristics are designated by use of the symbol 'S' inside of an inverted diamond on ORCHID MONROE, LLC system documentation and should be referenced in the supplier documentation where applicable (for example Failure Mode and Effect Analysis, Process Control Plans, part drawings). The creation of inspection requirements related to critical characteristics will only be developed by ORCHID MONROE, LLC.

H. Material Certification

Material Certification is required to ensure that materials supplied to ORCHID MONROE, LLC meet the agreed specification. Where considered necessary, ORCHID MONROE, LLC will request that prior to delivery of material, certification is provided to the Purchasing Department, but at all other times, material certification or test results be available within 24 hours of a ORCHID MONROE, LLC request. For bulk deliveries, a Tanker Clearance Certificate must be provided on arrival of the material at ORCHID MONROE, LLC

2. SUPPLIER PERFORMANCE – MONITORING & RATING

A. Performance Rating - Overall

Supplier performance rating is conducted by the ORCHID MONROE, LLC Purchasing Department at a minimum of semi-annual basis and is communicated to the supplier during those intervals or when ongoing poor performance is encountered. Supplier management may be requested to attend at ORCHID MONROE, LLC to present a performance improvement plan. Where poor performance is due to ongoing quality problems, supplier quality performance will be monitored in Parts Per Million (PPM) for a 12 month period, with a Parts Per Million target being 0 ppm by the end of that period.

The rating calculation is by a demerit system, and is a combination of delivery performance and quality performance as documented below.

Rating	Point Score
Excellent	91 - 100
Good	81 - 90
Satisfactory	71 - 80
Poor	0 - 70

B. Quality Performance

Each incident has its quality performance rating notified through issue of the Supplier Quality Problem Report (SQPR). Ratings are scored using the criteria below, as shown in the table below.

Criteria
Quantity of Product Received
Quantity of Product Defective including Field Returns
Quantity Administration Defective
PPM (Parts) or PPM (Pounds)
Supplier Quality Response to SCAR and Support

Supplier related Occupational Health Safety and Welfare and Environmental issues shall also be communicated to the supplier via the issue of the Supplier Quality Problem Report form.

C. Delivery Performance

100% on time delivery performance is expected of suppliers to ORCHID MONROE, LLC. Late delivery performance shall be communicated to suppliers through issuing of the Supplier Delivery Performance Report (SDPR), by the ORCHID MONROE, LLC Purchasing Officer. Also, early or over-delivery are not acceptable to ORCHID MONROE, LLC without prior documented consent from the ORCHID MONROE, LLC Purchasing Officer. Rating shall be allocated in accordance with the table below.

Description
OTD (complete)
Number Parts/Pounds Received
Number parts/Pounds Released Received On-Time
Percent Received On-Time
Incidents of Premium Freight
Supplier Purchasing Support

3. PPAP - PRODUCTION PART APPROVAL PROCESS

A. Scope

The use of PPAP (Production Part Approval Process) methodologies and paperwork is a prerequisite for supply of all components and materials for direct inclusion in the manufacture of production components.

B. Submission Levels

Level 2 is the default submission level for components supplied to ORCHID MONROE, LLC. The extent of submission for materials shall be as agreed with the ORCHID MONROE, LLC Quality Engineer with assistance from the ORCHID MONROE, LLC Materials / Process Development Manager or delegate. Variation from the above shall be advised by the ORCHID MONROE, LLC Quality Engineer.

C. Advanced Product Quality Planning (APQP)

Suppliers of components to ORCHID MONROE, LLC are required to apply Advanced Product Quality Planning (APQP) methodologies through the design and engineering stages, up to and including volume production. The following documentation is required to be submitted at PPAP (in all cases), or upon request by ORCHID MONROE, LLC Quality Engineer, Product Engineer or Purchasing Department:

- design FMEA (as appropriate)
- process FMEA
- process control plan
- process flow chart

Even if parts or assemblies have previously been or are currently supplied to end customers, PPAP submissions are still required.

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D. **Inherited Parts**

Where ORCHID MONROE, LLC are required to 'inherit' parts or assemblies from a supplier who was previously supplying the end customer, the same requirements shall be necessary in the form of PPAP submissions.

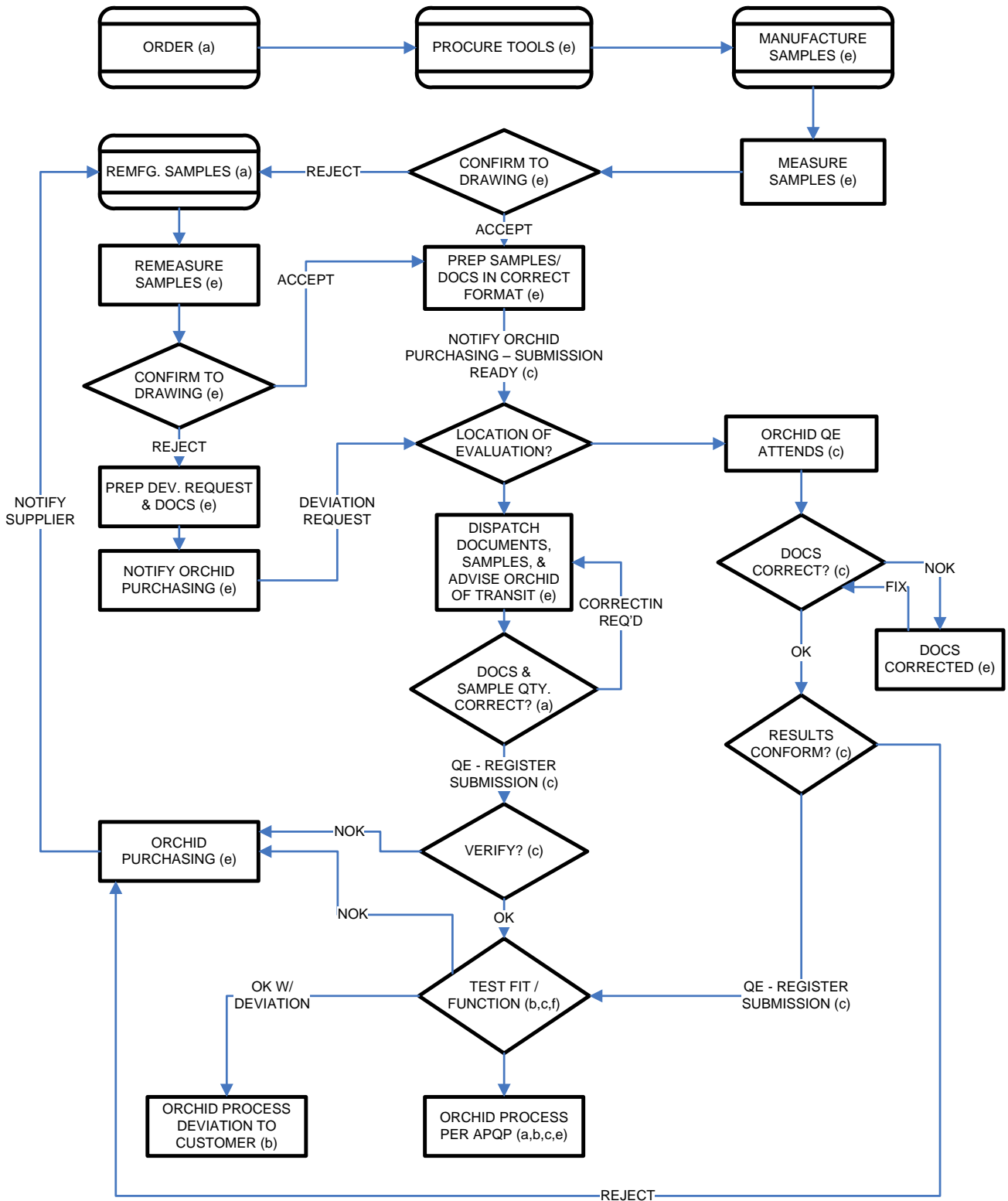
E. **General**

- a. It is ~~the supplier's~~ responsibility to ensure that only parts conforming to all nominated specification characteristic requirements are supplied as sample or production parts.
- b. Sample quantity for all submissions of components to ORCHID MONROE, LLC shall be 6 samples minimum.
- c. If components are from multi- cavity tooling a complete dimensional report is required for one part minimum from each cavity.
- d. If handmade or mocked up parts are required to be submitted, they shall be clearly indicated as such on submission documentation. Parts meeting this description shall not be granted Full Approval.
- e. It is the supplier's responsibility to ensure that all characteristics shown on the agreed engineering drawing shall be addressed in the submission paperwork, including all requirements within engineering and material test specifications nominated. E.g.; HN#####, ES-X##### etc.
- f. Actual dimensional / test results are required. Statements of conformance will not be acceptance as evidence of conformance.
- g. Dimensional / test results submitted for PPAP shall be no greater than 12 months old at time of documentation submission to ORCHID MONROE, LLC.
- h. Submission disposition (Approved / Limited Approval / Rejected) shall be advised to the supplier, in writing, by the ORCHID MONROE, LLC Purchasing Department.
- i. Where submissions have been granted Limited Approval / Rejected, corrected samples and satisfactory resubmission are required prior to commencement of production volumes. Corrective actions and timing for resubmission shall be negotiated with the ORCHID MONROE, LLC Quality Assurance Department.
- j. The supplier shall ensure the relevant buyer in the ORCHID MONROE, LLC Purchasing Department buyer shall be is copied in on all correspondence to ORCHID MONROE, LLC.

F. PPAP Approval Flow Chart

Flow Diagram Letter Code (Who):

a. Supply Chain b. Product Engineering c. Quality Assurance d. Sales e. Supplier f. Production



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Orchid Monroe, LLC interaction with their Customer id not shown.

4. **ORCHID MONROE, LLC REQUIREMENTS**

A. Record Retention

Where the end customer does not define the specific records to be maintained, Production Part Approvals (PPAP), inspection & test data, and tooling records are to be maintained by the supplier.

In order to ensure that all end customer requirements are met by suppliers, ORCHID MONROE, LLC request that all quality records pertaining to critical / safety characteristic parts are maintained for a period of 25 years, and those pertaining to part performance and history are maintained for a period of 10 years minimum after end of product life.

All records pertaining to critical / safety characteristics parts shall be retrievable within a time period of 24 hours. All other records shall be retrievable within 3 working days.

B. Delivery

It is the supplier's responsibility to identify modified or otherwise designated deliveries of material delivered to ORCHID MONROE, LLC.

C. Deviation / Waiver Request

Conditions necessitating deviation - a deviation request may be sought by the supplier under the following circumstances:

- Goods from a supplier do not meet specified requirements, when the deficiency does not adversely affect appearance or functionality of the part, or any possible product liability.
- Goods require rework due to a quality concern.
- There is a necessary change in production method or optional constructional material; for a temporary period only.
- A supplier requests an exemption from a specified management system / customer requirement.

Complete a copy of the Supplier Deviation Request form with the relevant details and the period / quantity of parts that the deviation is required for.

Send the completed form to the ORCHID MONROE, LLC Purchasing Department, together with supporting test data / samples if appropriate.

Approval / rejection will be advised in writing by the ORCHID MONROE, LLC Purchasing Department or the designated ORCHID MONROE, LLC Quality Engineer as appropriate.

It is the supplier's responsibility to maintain a record of the quantity. period authorized, and manage said product or system requirement accordingly. Upon expire of the deviation period, the supplier shall comply with the original or superseding requirements. Products supplied under deviation may require further verification upon receipt at ORCHID MONROE, LLC.

D. Process Control and Monitoring

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All suppliers are required to monitor and control the processes utilized to realize products produced for ORCHID MONROE, LLC. ORCHID MONROE, LLC will monitor supplier compliance to appropriate Customer and AIAG standards and require evidence of conformance to pertinent Continuous Quality Improvement Assessments including but not limited to:

- CQI-9 – Heat Treating
- CQI-11 – Plating
- CQI-12 – Coating
- CQI-15 – Welding
- CQI-17 – Soldering

E. Control Process Change Authorization

No significant changes to the approved process of product manufacturing shall be made without prior authorization from ORCHID MONROE, LLC. Change of manufacturing method, processing equipment, or parameters beyond those approved by the ORCHID customer are included. Maintenance of tools / equipment and variation of process parameters within approved limits are not considered a control process change.

If ORCHID MONROE, LLC purchase requirements and approved Supplier APQP documentation state that Control process Change authorization is required this paragraph will apply.

Necessary forms to request a process change can be obtained from the designate ORCHID QE representative as needed.

F. Verification of Goods Delivered to ORCHID MONROE, LLC

It is the suppliers' responsibility to determine and conduct suitable and effective verification activities to ensure that product delivered to ORCHID MONROE, LLC meets agreed requirements. Such activities shall be documented in the suppliers' Process Control Plan documentation.

ORCHID MONROE, LLC reserves the right to conduct system / process / product audits at the supplier's premises to ensure that verification and control activities are undertaken as documented. ORCHID MONROE, LLC conducts systemic reviews of suppliers to ensure implementation of corrective actions across the supplier facilities for all issues resulting in stop ship or field action.

ORCHID MONROE, LLC requires the use of error proofing practices for verification of critical / safety characteristics parts when possible.

ORCHID MONROE, LLC will accept the following as evidence of supplier verification activity:

- Receipt of SPC data on a regular basis (quarterly minimum)
- Inspection reports / test results / certificates of analysis

ORCHID MONROE, LLC conducts receiving inspection activity on a needs basis only. That is, ORCHID MONROE, LLC assumes all verification documentation is correct and that product is to ORCHID MONROE, LLC and their Customer requirements unless packaging is visibly damaged on arrival.

For raw stock deliveries - please refer to 4.E below.

G. Raw Stock Deliveries

Only raw stock that is accompanied by required Customer or ASTM certification shall be accepted.

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- a. To ensure the above the following documentation must accompany or precede the delivery and shall be presented to the ORCHID MONROE, LLC Laboratory Technician at the time of the delivery:
 - Certificate of analysis - matching the agreed raw material specification, and shall supply actual test results achieved and display batch use by date. General statements of conformance will not be accepted.
- b. A sample of material shall be taken or supplied, labeled appropriately, and passed to the ORCHID MONROE, LLC Laboratory Technician for receiving inspection testing.
- c. In circumstances where ORCHID MONROE, LLC Laboratory staff are not available ORCHID MONROE, LLC Stores / Security Office staff may take sample and documentation stated in 4 E a above, and forward to the ORCHID MONROE, LLC Laboratory for testing at the soonest available opportunity.

If the subsequent receiving inspection activity finds the raw material to not be within specification, the supplier shall be responsible for recovery and replacement of all material.

H. Reporting Quality Problems and Corrective Actions

a. Supplier Quality Problem Report

Problems with supplied material will be communicated to the supplier through the issue of a Supplier Corrective Action Request (SCAR), by the designated ORCHID MONROE, LLC Quality Engineer.

b. Containment

- I. Upon receipt of a Supplier Quality Problem Report, it is the supplier's responsibility to undertake immediate containment actions in order to prevent release of further nonconforming product to ORCHID MONROE, LLC, and detail short term fix on the SCAR response form within 24 hours.
- II. The supplier may be requested to attend at ORCHID MONROE, LLC, or provide labor, to conduct inspection activity of existing stock located at ORCHID MONROE, LLC, at supplier's own cost.
- III. In the event that the supplier is unable to arrange for inspection activity on site at ORCHID MONROE, LLC, the ORCHID MONROE, LLC Quality Engineer may arrange alternative labor on the supplier's behalf. The costs for such activity are then to be recorded, and an invoice supplied to the supplier to recover costs.

c. Root cause investigation and corrective actions

- I. Suppliers are to have a problem solving methodology.
- II. ORCHID MONROE, LLC may conduct an audit at the supplier's premises to verify effectiveness of corrective actions implemented by suppliers.
- III. Thorough investigation into the root cause shall be conducted by the supplier, and details of root cause, corrective action and implementation dates shall be communicated to the ORCHID MONROE, LLC Quality Engineer on the Supplier Quality Problem Report Response form within 5 working days of receipt of the Supplier Quality Problem Report.
- IV. Evidence of implementation of corrective and preventive actions shall also be presented to the ORCHID MONROE, LLC Quality Engineer upon request.

a. Follow up activities

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Following the issue of a Supplier Quality Problem Report, it is a ORCHID MONROE, LLC requirement that the supplier breakpoints for the period stated in the topic 'Break Point Deliveries' stated above.

I. **Confidentiality Agreements**

Some information provided to suppliers by ORCHID MONROE, LLC and its customers require a confidentiality agreement. This documentation shall be organized by the ORCHID MONROE, LLC responsible officer, and shall be acknowledged signed by the supplier's senior management upon request.

This, and ORCHID MONROE, LLC Terms and Conditions are covered in ORCHID MONROE, LLC's Request for Quotation documentation.

J. **Material Handling**

Material handling at ORCHID MONROE, LLC is conducted using forklift trucks, tow motors and trailers, together with limited use of pedestrian operated pallet trucks and conveyors.

In order to make full use of this equipment, ORCHID MONROE, LLC insist that wherever practicable and economically justified, goods are supplied in unit loads, so that unloading of vehicles can be carried out mechanically and a quick turn around of vehicles can be assured.

a. **Identification and labeling**

When applicable, ORCHID MONROE may require customer required or special identification and labeling. The format and location of labeling will be specified as part as the purchase order statement of requirements.

b. **Pack size and weights**

- I. Pack size and method shall be agreed between the supplier and ORCHID MONROE, LLC prior to first production shipment.
- II. Any special packaging or palletization required a customer of ORCHID MONROE, LLC shall be transmitted to the supplier as part of the purchase order.

c. **Unit Loads**

- i. Unit load gross weight shall be negotiated and agreed upon by Orchid Supply Chain management.
- II. Specialized still-ages and containers may be used for special applications, so that loads can maximize utilization of transport vehicles and warehouse facilities.

d. **Safety**

- I. Shipping Containers shall be maintained in a good state of repair and must be designed in such a way that handling without special safety precautions is possible.
- II. Still-ages must locate positively when stacked to satisfy safety requirements.
- III. Inflammable and hazardous materials must be packed and transported in accordance with applicable regulations.
- IV. All pallets must be in good repair without loose or missing boards.
- V. Supplied returnable dunnage when used shall be clean and free of debris before return to

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ORCHID MONROE, LLC.

5. WARRANTY CRITERIA

ORCHID MONROE, LLC requires the suppliers, as the experts in the components supplied, to be committed to a program of continuous quality improvement. In the event of field concerns the supplier is to put in place a system of containment, root cause investigation and permanent corrective action as a matter of priority. ORCHID MONROE, LLC expects all suppliers to accept the warranty period as per the OE customer accepted vehicle warranty period.

A. Warranty Claim and Cost Reimbursement

The primary focus for warranty from the supplier must be corrective actions. ORCHID MONROE, LLC will seek reasonable costs reimbursement based on charges from the end customer to include part costs, handling costs, labor costs and administration costs as part of warranty investigation and design responsibility. ORCHID MONROE, LLC will provide an invoice for warranty costs recovery.

B. Report of Investigation for Warranty Components

ORCHID MONROE, LLC will supply a detailed claim with supporting data, plus components where appropriate, to enable the supplier to fully investigate the condition. Where components have been returned to the supplier, ORCHID MONROE, LLC requests a monthly report detailing full root cause, corrective actions and Breakpoint details.