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## 1 Purpose

The purpose of this Supplier Quality Manual (SQM) is to outline processes and expectations for Valcor's external suppliers.

As Valcor's customers place increasing priority on perfect quality and on-time delivery, the performance of external suppliers is becoming an increasingly critical factor in Valcor's success. It is essential that Valcor partners with its suppliers to help them develop the capabilities necessary to meet these growing customer expectations.

Valcor encourages all suppliers to implement a Quality Management System (QMS) that complies with AS9100D (*Quality Management Systems – Requirements for Aviation, Space & Defense Organizations*) and/or ISO 9001:2015 (*Quality Management Systems - Requirements*).

Valcor expects suppliers to aspire to zero defects, failures, and losses, and further encourages all suppliers to develop processes and procedures that prioritize defect prevention and systematic improvements over defect detection (e.g., inspection) and containment activities.

## 2 Scope

Unless otherwise specified, this manual applies to all external suppliers providing direct material, or special processing services of direct material, to Valcor.

## 3 Document Precedence

Whenever there is a conflict between Valcor documents, suppliers must follow this order of precedence:

- 1) *Approved* Deviation/Change Request (DCR) (Form F-SC-0017)
- 2) Purchase Order (including all quality clauses)
- 3) Purchase Order Terms & Conditions
- 4) Engineering Drawings (including any supplemental documentation referenced on drawing)
- 5) Supplier Quality Manual



## 4 Definitions

**Audit:** An official evaluation of a supplier's capability to provide products that meet all Valcor requirements. Reference section 6.3.

**Certificate of Conformance (CoC):** A quality assurance document, issued and signed by an authorized party, certifying that a product meets all Valcor specifications. Reference section 6.9.

**Deviation & Change Request (DCR):** A formal request from a supplier to change or deviate from previously documented Valcor specifications. Reference section 6.8.

**Direct Material:** Any material that is physically converted into a Valcor finished product.

**Discrepant Material Report (DRR):** A formal report of a nonconformance identified by Valcor. May also be referred to as *Material Rejection Report (MRR)*: Reference section 6.6.

**Material / Mill Test Report (MTR):** A quality assurance document that certifies a material's chemical and physical properties and compliance to relevant standards. Reference section 6.10.

**Material Rejection Report (MRR):** A formal report of a nonconformance identified by Valcor. May also be referred to as *Discrepant Material Report (DMR)*. Reference section 6.6.

**Supplier Corrective Action Request (SCAR):** A formal request for a supplier to systematically identify the root cause of a nonconformance and execute corrective actions to prevent reoccurrence. Reference section 6.7.

**Special Process:** A production or service process where the output cannot be measured, monitored, or verified until after the product has been delivered to or is in use at Valcor. Examples include plating, anodizing, heat treating, passivation, etc.

**Sub-Tier Supplier:** Any secondary party providing a product, process, or service to the *supplier*, who will then provide a product, process, or service to Valcor.

**Supplier:** The party providing an external product, process, or service to Valcor, and identified on a Valcor contract as the "Seller."

**Supplier Development Group:** Valcor organization that includes the *Supplier Development Manager(s)*, *Supplier Quality Engineer(s)*, and/or *Supply Chain Manager(s)*, as necessary. Reachable via [SupplierDevelopment@Valcor.com](mailto:SupplierDevelopment@Valcor.com).



## 5 General Requirements

### 5.1 Valcor's Quality Policy

*Achieve customer satisfaction and on-time delivery by continuously improving the quality management system, work processes, and human factor practices, while promoting open reporting and feedback.*

### 5.2 Supplier Personnel Qualification

Suppliers must maintain processes and procedures (i.e., a documented training program) for onboarding and verifying the competence of all employees that will participate in the manufacturing processes of Valcor products.

Valcor reserves the right to request objective evidence of the foregoing requirement.

### 5.3 Test, Inspection, and Process Verification

Suppliers must maintain processes and procedures that ensure products conform to all Valcor drawings and requirements. This includes (but may not be limited to) incoming, in-process, and final test and inspection procedures, and production process verification activities.

Valcor may request evidence of a supplier's test, inspection, or production process verification activities. These requests will be noted on the purchase order and are covered in detail in other sections of this manual.

### 5.4 Product and Process Change Management

Once a product has been provided to Valcor, suppliers must not make any changes to the product or processes used to make that product (including changes in any sub-tier suppliers or delegation to other supplier facilities), without Valcor approval. The only exception is if the sub-tier supplier change involves outside processors evaluated under a common set of requirements (e.g., NADCAP).

Furthermore, suppliers must notify Valcor of any changes in manufacturing location(s) and work with Valcor to develop a plan for approving the new manufacturing locations.

Valcor utilizes the Deviation/Change Request (DCR) process for communicating process, product, or service changes to Valcor. This process is covered in detail in section 6.8.



## 5.5 Sub-Tier Suppliers

Suppliers must ensure that all applicable Valcor purchase order requirements are properly flowed down to all sub-tier and special processing suppliers used in the production of the material provided to Valcor.

## 5.6 Quality Clauses

Suppliers must comply with all quality clauses listed on Valcor purchase orders. Suppliers must communicate any exception with a quality clause to Valcor Purchasing or Supplier Development personnel in writing.

## 5.7 Counterfeit Material Prevention

Suppliers are responsible for complying with all requirements related to counterfeit material prevention. This includes all requirements contained within the *Valcor Standard Purchase Order Terms & Conditions* as well all requirements specific to the purchase order (e.g., contained within quality clauses).

The supplier must implement and maintain a counterfeit material prevention program (e.g., control plans, visual inspections, testing, or other processes) to ensure counterfeit material is not delivered. The program must meet the intent of SAE AS5553 and SAE AS6174.

In addition, suppliers must provide certification of the origin of the materials being supplied (a copy of the original OEM certification to a distributor is acceptable).

The supplier must notify Valcor in writing within 2 working days of discovery or suspicion of counterfeit, suspect counterfeit, or fraudulent parts or materials.

If a supplier has been determined to be at risk for suspect counterfeit parts, the Supplier Development Group will assess the supplier's compliance based upon the risk level associated with the part. Suppliers must provide Valcor with evidence of their counterfeit material program to Valcor upon request.



## 5.8 Nonconforming Material and Notice of Escape

Under no circumstances may a supplier ship nonconforming material without written approval from Valcor. The only form of valid written approval is a completed Deviation / Change Request (DCR) Form (reference section 6.8).

Suppliers agree to handle non-conforming products and defects discovered after delivery. Specifically, the Supplier shall be responsible for:

1. Promptly reporting any condition found after delivery of the items to be nonconforming to the Valcor drawing or specification requirements. The notification shall be reported in writing to the Valcor buyer within 48 hours of discovery.
2. Taking appropriate corrective actions to address and resolve such non-conformities.
3. Indemnifying Valcor for any associated costs, damages, or legal liabilities arising from non-conforming products or defects.

The supplier shall cooperate fully with Valcor in the investigation and resolution of non-conformities and shall bear all associated costs and expenses related to such actions.

Suppliers will be expected to provide follow-up communication regarding root cause of the quality escape and planned corrective actions.

## 5.9 Right of Access

Suppliers must provide Valcor, Valcor's customers or authorized representatives, and all regulatory agencies with reasonable access to all applicable areas of the supplier's facilities involved in fulfilling Valcor purchase order requirements. This applies to any level of the supply chain and includes all related supplier records.

With prior notice and coordination, Valcor has the right to conduct surveys, audits, inspections, and facility surveillance at suppliers (as well as any sub-tier suppliers).

## 5.10 Customer/Government Source Inspection (CSI/GSI)

Some Valcor items require customer source inspection (CSI) and/or government source inspection (GSI). These requirements will be noted on the Valcor purchase order.

Suppliers must ensure that product is not released before completion of CSI/GSI.



### 5.11 Supplier Ethics

Suppliers must ensure that all employees are aware of: a) their contribution to product or service conformity, b) their contribution to product safety, and c) the importance of ethical behavior.

Valcor reserves the right to request objective evidence of the foregoing requirement.

Note that the recording of false, fictitious, or fraudulent statements or entries on supplier documents pertaining to manufacturing, inspection, or test records may be punishable as a felony under federal statutes including U.S. Code, Title 18, Chapter 47.

### 5.12 Record Retention

Suppliers must retain all records relating to Valcor purchase orders for a minimum of fifteen (15) years unless otherwise specified on a Valcor contract or purchase order. The disposition of such records must be controlled per the supplier's applicable QMS requirements.

Suppliers must make all applicable records available to Valcor upon request.

### 5.13 Import/Export Compliance

The products, technical data, and services produced and/or provided by Valcor Engineering Corporation may be subject to the provisions of the Export Administration Act of 1979 (50 USC 2401-2420), the Export Administration Regulations promulgated thereunder (15 CFR 730-774), and the International Traffic in Arms Regulations (22 CFR 120-130).

These statutes and regulations impose restrictions on the import, export, re-export, and transfer to third countries of certain categories of hardware, data, technical services, and information, and that licenses from the U. S. Department of State and/or the U.S. Department of Commerce may be required before such hardware, data, technical services, and information can be provided/disclosed hereunder, and that such licenses may impose further restrictions on use and further disclosure of such data, technical services and information.

Disclosure of data, technical services, and information to foreign persons, as defined at ITAR 120.16, and at EAR 734.2(b), is subject to the above regulations regardless of if the export occurs in the U.S. or abroad. Violations of these export laws are subject to severe criminal penalties.



#### **5.14 Valcor Owned & Supplied Material**

Valcor expects suppliers to invest in packaging containers, inspection gages, tooling, and other supplementary items necessary to manufacture the product. When such an investment is not practical and these supplementary items are loaned to a supplier, the items remain property of Valcor. The supplier is responsible for maintaining the items, protecting the items from mishandling, damage, or loss, and promptly returning the items to Valcor after use.

When Valcor is providing raw material to a supplier, the material must not be used for any purpose other than to fulfill Valcor purchase orders.

#### **5.15 Foreign Object Debris (F.O.D.) Prevention**

When specified on a Valcor purchase order, suppliers are required to establish, document, and maintain a program to control and prevent foreign object debris (F.O.D.) during all manufacturing, assembly, test, inspection, and sub-tier supplier operations. The program should follow NAS412 or AS9146, or otherwise be submitted to Valcor for prior approval.

Suppliers must provide evidence of their F.O.D. prevention program to Valcor upon request.



## 6 Supplier Quality Processes & Expectations

### 6.1 Becoming a Valcor Supplier

Potential *new* suppliers must submit the following to Valcor's Supplier Development Group ([SupplierDevelopment@Valcor.com](mailto:SupplierDevelopment@Valcor.com)) for further consideration:

- Valcor **Supplier Quality Survey Form (Form# F-SC-0004)**
- Copies of relevant **Quality Management System (QMS) Certificates** (Reference section 6.2)
- Copy of **Supplier Quality Manual** (if supplier is not accredited)

Valcor's Supplier Development Manager and Supply Chain Manager will evaluate the Supplier Quality Survey and QMS certificates, as well as the supplier's technical capabilities, to assess the supplier's ability to meet all Valcor requirements. Suppliers that pass this evaluation phase will be requested to submit the following additional documentation:

- Fully executed **Non-Disclosure Agreement (NDA)**
- Current **Form W-9**, Request for Taxpayer Identification Number and Certification

Valcor will review all documentation and provide final approval. Upon final approval, the Supplier Development Group will communicate to the supplier, designate the supplier as "Approved" in Valcor's business system, and add the supplier to Valcor's Approved Supplier List.

### 6.2 Quality Management System (QMS)

Suppliers must develop, document, implement, and maintain a quality management system (QMS) that ensures compliance with all Valcor purchasing requirements. The QMS must comply with the most current revision of AS9100, ISO9001, or another comparable quality system. Suppliers holding QMS certifications must provide updated certificates to Valcor upon request.

Suppliers providing "special processing" services to Valcor (i.e., welding, plating, heat treatment, etc.) should maintain NADCAP certification for the relevant processes. Suppliers must provide updated certificates to Valcor upon request.

In the absence of QMS certifications (AS, ISO, or NADCAP), suppliers may submit a written QMS to Valcor for approval. Uncertified quality management systems will be subject to further evaluation by Valcor personnel. Suppliers may also be required to re-submit the **Valcor Supplier Quality Survey Form (Form# F-SC-0004)** upon request, typically on a 3-year cycle.



### 6.3 QMS Audits by Valcor Personnel

A supplier's QMS is subject to an audit (either on-site or remote) by Valcor personnel at any time, with a minimum of 24 hours' notice. A member of Valcor's Supplier Development Group will typically lead the audit.

Valcor may require a QMS audit in the following instances:

- Approval of suppliers that do not maintain formal QMS certifications (as noted in section 6.2)
- Qualification of suppliers of critical or high-risk Valcor products (at the discretion of the Supplier Development Group)
- Qualification of suppliers to participate in PPAP, source inspection, or delegated self-release programs
- Verification of corrective & preventative actions in response to Supplier Corrective Action Requests (SCARs) or other significant supplier quality issues
- Other instances, at the discretion of the Supplier Development Group

Valcor's Supplier Development Group typically schedules and completes audits, communicates audit results to suppliers, executes Supplier Corrective Action Requests (SCARs) in response to audit findings, and works with suppliers to comply with all audit and SCAR requirements. A follow-up audit may be required to confirm the resolution of any findings from the initial audit.

### 6.4 Maintaining Approval Status

Continued status as an approved Valcor supplier is contingent upon the following:

- Maintenance of initially approved QMS (Reference sections 6.1 and 6.2)
- Acceptable supplier quality performance (Reference section 6.5)

Valcor typically re-evaluates suppliers on a three (3) year cycle. When formal QMS certifications were used for initial approval but have since expired, the supplier must submit current copies to Valcor upon request. When standard QMS certifications are not available, Valcor's Supplier Development Group will otherwise coordinate and conduct an auxiliary evaluation of the supplier.



## 6.5 Supplier Rating System

Valcor expects suppliers to make every reasonable effort to achieve and maintain acceptable quality and delivery performance. Valcor’s Supplier Development Group manages and maintains quality and delivery data for all suppliers, including supplier scorecards.

Supplier scorecards summarize a supplier’s recent quality and delivery performance, as well as top contributions to each score. These scorecards are communicated quarterly to the supplier (at a minimum) and are available at any time upon request.

Supplier quality performance is calculated as:

$$\text{Supplier Quality Score} = \frac{\text{Total Lots Received} - \sum(\text{Lots Rejected}) \times (\text{DMR Charge})}{\text{Total Lots Received}} \times 100\%$$

- NOTE: A DMR Charge is assigned for each MRR/DMR (see section 6.6) by the Supplier Development Group. The possible charges are 0%, 25%, 50%, 75%, or 100%, based on the severity of the nonconformance and the party at fault for the nonconformance.

Supplier delivery performance is calculated as:

$$\text{Supplier Delivery Score} = \frac{\text{Lots On Time} + \text{Lots Early}}{\text{Total Lots Received}} \times 100\%$$

- NOTE: “On Time,” “Early,” and “Late” lines are measured relative to the supplier’s promised receipt date.

Table 1 summarizes Valcor’s rating scale for measuring supplier quality and delivery performance.

**Table 1: Valcor Supplier Quality and Delivery Rating Scale**

Level	% Range	Grade
Preferred	95% - 100%	A
Acceptable	85% - 94%	B
Improvement Required	75% - 84%	C
Unacceptable	< 75%	F



Suppliers that fail to achieve “Acceptable” quality performance for two consecutive quarters will be expected to implement an immediate improvement plan. Valcor’s Supplier Development Group may issue a Supplier Corrective Action Request (SCAR – reference section 6.7) to facilitate the improvement plan. Exceptions may be made for special cases (i.e., lower volume or infrequently used suppliers).

Suppliers that continuously fail to achieve “Acceptable” quality performance will not receive additional Valcor business and will be at risk of removal from Valcor’s Approved Supplier List.

## 6.6 Material Rejection Report (MRR) / Discrepant Material Report (DMR)

Valcor generates MRRs/DMRs to document material nonconformances. A nonconformance is defined as any discrepancy to the part or PO requirements related to packaging, documentation, and/or quality (defects in form/fit/function). Valcor’s Material Review Board (MRB) will evaluate the nonconformance(s) and determine the disposition type and location. Potential dispositions include:

- Use As Is
- Rework at Supplier
- Rework at Valcor\*
- Scrap at Supplier for Credit
- Scrap at Valcor

\* Valcor reserves the right to debit suppliers for labor costs for internal rework.

If a nonconformance is determined to be the fault of a supplier, the MRRs/DMRs will reduce the supplier’s quality score based on the severity of the nonconformance (see section 6.5).

Severe and/or repeat MRRs/DMRs may result in a Supplier Corrective Action Request (SCAR – see section 6.7). Note that even in the absence of a SCAR, suppliers are still expected to act in response to all MRRs/DMRs (e.g., remediation, containment, and/or correction activities, as necessary). Suppliers must provide evidence of such activities to Valcor upon request.

## 6.7 Supplier Corrective Action Request (SCAR)

A Supplier Corrective Action Request (SCAR) may be issued in response to severe or repeat nonconformances, at the discretion of the Supplier Development Group.

When a SCAR is issued, Valcor expects suppliers to:

- Complete containment activities within 72 hours of the SCAR notification.



- Provide a written response to the SCAR within 21 days of SCAR notification by completing the **Supplier Corrective Action Request Form (Form# SF1018A)**.

Suppliers that fail to provide timely support and responsiveness to SCARs will be at risk of losing future Valcor business. If assistance is required to complete a SCAR, the supplier is responsible for requesting that assistance from the Supplier Development Group.

The written response must include a detailed root cause analysis and corrective action plan that demonstrates a systematic problem-solving approach:

- The root cause should be determined by using analytical tools such as 5 Whys, Pareto Analysis, Cause & Effect Analysis, “Fishbone” Diagrams, etc.
- Corrective actions should effectively eliminate the root cause and prevent the nonconformance from reoccurring. “Operator training” alone will not be considered an acceptable corrective action plan.

Suppliers are expected to complete all corrective actions by the assigned due dates on the SCAR record and must communicate any issues with meeting the assigned due dates to Valcor. Extensions will be approved in limited circumstances where the supplier has demonstrated progress toward completing the SCAR. Generally, all corrective actions should be completed within 90 days of the initiation of the SCAR; however, circumstances for some SCARs may dictate longer or shorter timelines.

SCARs will not be formally closed without successful verification. Suppliers must submit objective evidence (pictures, work instructions, procedures, manufacturing routers, etc.) as proof of corrective action implementation. Objective evidence may also be obtained via an on-site assessment by Supplier Development personnel. SCAR verification may also include successful inspection of follow-up shipments of parts impacted by the SCAR.



## 6.8 Deviation & Change Requests (DCR)

When suppliers have identified nonconforming parts or processes before shipment to Valcor, the supplier must complete and submit a formal *Deviation/Change Request Form* (Form# F-SC-0017) to Valcor for disposition (approval or rejection). The form is available on Valcor.com under the “Suppliers” section.

Suppliers *cannot* conduct Material Review Board activities or Use-As-Is dispositions on Valcor material unless given written authority via the *Deviation/Change Request Form*. Additionally, suppliers should *never* knowingly ship nonconforming material to Valcor without receiving written approval from Valcor via the *Deviation/Change Request Form*.

The *Deviation/Change Request Form* may also be used when suppliers would like to propose a change to plans, drawings, designs, product definitions, specifications, or processes associated with Valcor parts.

The following sections on the Deviation/Change Request Form (F-SC-0017) must be completed:

- Supplier / Part Information
- Deviation / Change Information
- Request Information

Suppliers must send completed forms, along with photographs, inspection data, or any other pertinent information that will assist Valcor in dispositioning the material, to the Supplier Development Group.

DCRs are then reviewed and dispositioned by Valcor Engineering and Quality Assurance personnel. If the DCR is approved, the Supplier Development Group will inform the supplier of the disposition. The supplier should indicate the DCR number on their Certificate of Conformance and include an approved copy of the *Deviation/Change Request Form* with the parts. Suppliers must clearly identify and segregate any nonconforming material if requested by Valcor for the DCR disposition.

If the DCR is rejected, the Supplier Development Group will inform the supplier of the disposition and return the DCR form (including written justification from Valcor). The discrepant material and/or parts may not be shipped to Valcor unless noted on the completed *Deviation/Change Request Form*. The supplier is responsible for reworking or replacing the nonconforming parts to meet all Valcor specifications.



## 6.9 Certificate of Conformance (CoC)

Suppliers shall provide a Certificate of Conformance (CoC) with every shipment delivered to Valcor. The CoC shall be a formal certification that all products, materials, and processes used in the manufacture of the item(s) conform to all applicable purchase order requirements, specifications, and referenced documents. CoCs must be legible, traceable, and issued by an authorized quality representative of the supplier.

At a minimum, each CoC shall include the following information:

- Supplier name, physical address, and contact information
- Manufacturer name (if different from the supplier)
- Valcor purchase order number
- Valcor part number and part revision
- Quantity shipped
- Lot number, batch ID, or other unique traceability identifier
- Description of any special processes or procedures performed
- All applicable standards, specifications, and drawing requirements
- Raw material description and lot number (when supplied by Valcor)
- Printed name, title, and signature of the authorized quality representative
- Date of certification

Suppliers are responsible for ensuring that CoCs are obtained from all sub-tier suppliers involved in the manufacture, processing, or supply of the product. Sub-tier CoCs shall contain sufficient detail to establish clear chain of custody from the sub-tier to the direct Valcor supplier. All sub-tier certifications must be retained as part of the supplier's quality records and made available to Valcor upon request.



## 6.10 Material / Mill Test Report (MTR)

Suppliers shall provide a Material / Mill Test Report (MTR) with each shipment of raw material or material-controlled product delivered to Valcor. The MTR shall certify full conformance to all applicable material specifications, Valcor purchase order requirements, and drawing requirements. All reports must be legible, in English, and must clearly demonstrate material pedigree and complete traceability from the original melt through final processing.

Each MTR shall include, at a minimum, the following information:

- Name and physical address of the raw material manufacturer
- Description of the material, including form and condition
- Applicable material standards/specifications (e.g., ASME, ASTM, AMS, etc.)
- Material dimensions (e.g., size, thickness, diameter, etc.)
- Heat number or other unique melt/ingot identifier
- Chemical composition test results
- Mechanical test properties as required by the specification
- Details of all thermo-mechanical processing performed (e.g., forging, rolling, drawing, extrusion) when required by the applicable specification or PO
- Details of heat treatment and any chemical processing when required
- Printed name, title, and signature of the authorized representative of the material manufacturer
- Date of certification

The MTR and supporting certifications must clearly document the traceability path from the ingot/melt source through all intermediate manufacturing steps and inspections, as required by the applicable raw material specifications and purchase order. Suppliers shall not alter, obscure, rewrite, or remove any identifying data or supplier names provided on the original material documentation.

If the material is supplied through a distributor, the distributor shall provide a separate Certificate of Conformance (C of C) identifying the material manufacturer and the associated heat/lot information.

Distributor information shall not be added directly to the MTR; distributor certification must be provided as a standalone document.



## 6.11 Packaging

Suppliers are expected to package all products in a manner that protects the parts from damage and F.O.D. throughout the entire shipment process. Any damage to parts identified at Valcor (nicks, scratches, dents, etc.) will be cause for rejection.

Supplier packaging is, at a minimum, expected to:

- Package each item separately.
- Protect each item from contact and damage with other items.
- Secure each item from movement during shipment.
- Provide enough clearance between the item and the exterior packaging walls.
- Support the weight of all items and remain intact throughout shipment.
- Protect parts that are subject to corrosion (e.g., machined castings, forgings, etc.). Capping, anti-rust bagging/wrapping, and other coverings may be suitable for this purpose.

Bulk packaging is *only* acceptable for commercial-off-the-shelf (COTS) items (i.e., washers, nuts, screws, springs, helical inserts, etc.).

Appendix A specifies some examples of acceptable and unacceptable packaging practices.

The Valcor purchase order or engineering drawing may specify additional packaging requirements, such as a defined “Part Protection Level” (PPL). Appendix B contains an explanation of Part Protection Levels as well as some additional examples and guidelines on part packaging.

## 6.12 Labeling

Suppliers must identify all boxes, crates, or containers shipped to Valcor with an identification label. The identification label must contain the following information, at a minimum:

- Valcor purchase order number
- Supplier name
- Box *X* of *Y*, when the shipment consists of multiple containers

Any carrier shipping labels must reference the Valcor purchase order number.

The Valcor purchase order or engineering drawing may specify additional labeling requirements.



### 6.13 First Article Inspection (FAI) Reports

When specified on a Valcor purchase order, suppliers must prepare and submit a first article inspection (FAI) report. The SAE AS9102 format is highly recommended, but alternative formats are acceptable with prior Valcor approval, (unless the Valcor purchase order explicitly defines the AS9102 format).

An FAI report may be required when any of the following events apply:

- A new part number to the supplier
- A lapse in delivery of two years or greater
- A change in manufacturing source, process, location, tooling, or materials that may potentially affect form, fit, or function
- A change in revision that may affect form, fit, or function
- A result of a SCAR or other major quality issue
- Other instances, at the discretion of the Supplier Development Group

The Supplier Development Group is responsible for reviewing FAI reports and providing stamped/written approval. The supplier must not ship additional quantities of the item until the initial FAI report is approved unless Valcor provides written authorization to the contrary.

### 6.14 Production Part Approval Process (PPAP)

When specified on a Valcor purchase order, suppliers must prepare and submit a Production Part Approval Process (PPAP) package. The SAE AS9145 format is highly recommended, but other formats may be submitted for Valcor approval. The PPAP package will generally include a first article inspection (FAI) report per section 6.13.

A PPAP package may be required when any of the following events apply:

- A new part number to the supplier
- A lapse in delivery of two years or greater
- A change in manufacturing source, process, location, tooling, or materials that may potentially affect form, fit, or function
- A change in revision that may affect form, fit, or function
- A result of a SCAR or other major quality issue
- Other instances, at the discretion of the Supplier Development Group



The Supplier Development Group is responsible for defining PPAP deliverables, approving supplier PPAP packages, and providing stamped/written approval. The supplier must not ship additional quantities of that item until the PPAP package is approved unless Valcor provides written authorization to the contrary.

### 6.15 Quality Data Package

When specified on a Valcor purchase order and before shipment, suppliers must prepare and submit a quality data package for approval to Valcor via email to the Supplier Development Group.

The specific quality data package requirements will be defined by the purchase order. A complete quality data package may include the following documentation:

- a) Complete manufacturing traveler/routing/etc., detailing the manufacturing operations performed, each operator's acceptance signature and date, and inspection points (including related acceptance signatures and dates)
- b) In-process and final inspection records (recorded actual critical & major characteristics)
- c) Any other documentation required by the purchase order
- d) Supplier's Certificate of Conformance
- e) Purchaser's QA Work Release (if applicable)
- f) DCMA Release after GSI (if applicable)
- g) Weld Records (if applicable)
- h) Test Reports
- i) Material Test Report(s) (including weld filler materials, when applicable)
- j) Shelf-Life Item Identification (if applicable)
- k) Nondestructive Examination Reports (if applicable)
- l) Radiographic Film with Technique Sheets and Reports
- m) First article inspection report for dimensional and visual characteristics
- n) Special process certification(s) (Nondestructive Examination, heat treat, welding, etc.)
- o) Certificates of Calibration
- p) Any documentation substantiating the quality of the hardware

- q) Any documentation denoted as necessary by the Supplier Development Group

The Supplier Development Group is responsible for reviewing all quality data packages and providing stamped/written approval. The supplier must not ship the material until the quality data package is approved unless Valcor provides written authorization to the contrary.

### **6.16 Source Inspection**

The Supplier Development Group may require source inspection for suppliers. These conditions may include but are not limited to:

- An alternative to incoming inspection at Valcor
- A decline in supplier performance
- Monitoring of a new supplier
- Qualification of a new part number
- A highly critical part
- Other instances at the discretion of the Supplier Development Group.

Source inspections may be on-site (physical) or remote (virtual). The Supplier Development Group is responsible for completing the source inspection and for reviewing and accepting/rejecting quality data packages. The supplier may not ship parts without stamped/written approval from Valcor.

- For on-site source inspections, the Supplier Development Group will schedule a visit to the supplier's facility (with a minimum of 24 hours notice) to witness all relevant portions of the source inspection and provide stamped/written approval for the shipment.
- For remote source inspections, the supplier will submit a quality data package (per section 6.15) to the Supplier Development Group. The Supplier Development Group will review the data package and provide stamped/written approval for the shipment.

### **6.17 Receiving Inspection**

All direct material shipped to Valcor is subject to receiving inspection, unless a source inspection (per section 6.16) has been completed, or unless otherwise defined by the Supplier Development Group.



Valcor encourages all suppliers to participate in activities that ultimately reduce the need for incoming inspection at Valcor, such as source inspection (section 6.16) or Delegated Product Release Verification (DPRV) (section 6.19).

### 6.18 Inspection Sampling Plan

When the supplier's inspection processes are used in place of incoming inspection at Valcor (e.g., remote source inspection or delegated self-release), and unless otherwise specified by Valcor, the supplier's sampling plans must meet the following requirements:

- Dimensional data must be collected per a sampling plan that meets or exceeds the **Critical** sampling plan (e.g., the **Z1 or Zero Acceptance Number Sampling Plan**) listed in **Valcor S1503**. This applies to all dimensional features.
- Attribute data must be collected on the visual inspection of the entire lot for gross deficiencies (e.g., burrs, scratches, surface finish violations, part damage, etc.).

### 6.19 Delegated Product Release Verification (DPRV)

Suppliers demonstrating a history of exceptional quality performance may qualify for full Delegated Product Release Verification (DPRV), with no incoming inspection at Valcor. The Supplier Development Group will notify suppliers that qualify under this program and provide further instructions.


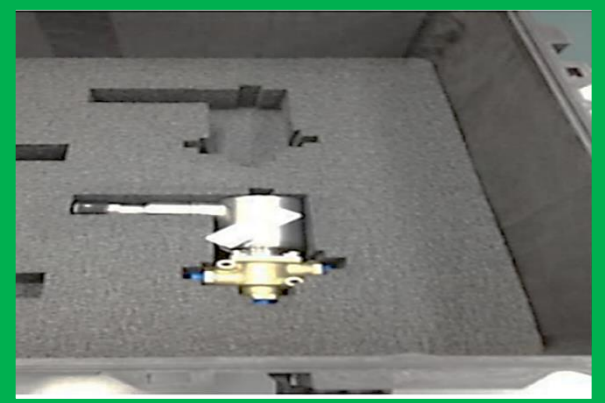



## 7 References

<b>Form F-SC-0004</b>	Valcor Supplier Quality Survey
<b>Form F-SC-0017</b>	Valcor Deviation/Change Request Form
<b>Form SF1018A</b>	Valcor Supplier Corrective Action Request Form
<b>ASTM 2872</b>	Standard Guide for Measurement System Analysis
<b>ISO 9001</b>	Quality Management Systems - Requirements
<b>NAS-412</b>	Foreign Object Damage / Foreign Object Debris (FOD) Prevention
<b>SAE AS6174</b>	Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel
<b>SAE AS9100</b>	Quality Management Systems – Requirements for Aviation, Space & Defense Organizations
<b>SAE AS9102</b>	First Article Inspection
<b>SAE AS9103</b>	Variation Management of Key Characteristics
<b>SAE AS9145</b>	Requirements for Advanced Product Quality Planning and Production Part Approval Process
<b>SAE AS9146</b>	Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space, and Defense Organizations
<b>SAE J1739</b>	Potential Failure Mode and Effects Analysis (pFMEA, dFMEA)

## Appendix A – Acceptable and Unacceptable Packaging Examples

**NOTE:** The following table provides examples of good packaging practices; however, inclusion in this section does not guarantee the suitability of packaging for all Valcor applications. Valcor recommends that suppliers confirm packaging plans before the first shipment of a particular part.

	<p><b>ACCEPTABLE</b> – Parts individually packaged, cushioned from each other to prevent damage</p>
	<p><b>ACCEPTABLE</b> – Sub-assembly/valves protected and cushioned from other components and external packaging walls</p>
	<p><b>ACCEPTABLE</b> – Parts packaged in anti-corrosive bags</p>

	<p><b>ACCEPTABLE</b> – Threaded part capped (to prevent internal threads and passageways from F.O.D. penetration), and individually bagged</p>
	<p><b>UNACCEPTABLE</b> – Parts loosely boxed; not protected from damage from other parts or F.O.D. penetration; no clearance between parts and external packaging walls</p>
	<p><b>UNACCEPTABLE</b> – Parts loosely boxed; not protected from damage from other parts or F.O.D. penetration</p>
	<p><b>UNACCEPTABLE</b> – Parts not protected from corrosion/rust</p>

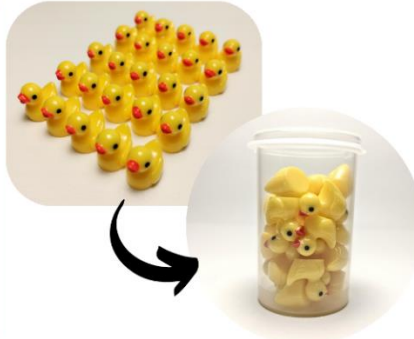
## Appendix B – Part Protection Levels (PPLs)

### Part Protection Levels (PPL)

The following are the levels of protection for parts/subassemblies/assemblies that must be adhered to both internally and externally.

**LEVEL 0  
BULK**

- Parts packed together with no additional protection in an appropriate sealable container.
  - Acceptable sealable containers include bags, vials, jewelry cases, cardboard boxes, etc.
- Separation from other part numbers required, but separation from same part number not required.
- Part-on-part contact allowed between same part numbers.
- Parts that fall into this category may include COTS nuts, bolts, screws, o-rings, other soft goods, etc.



**NOTE 1:** The final shipping configuration for the assembly will not be covered by this document; that can typically be found in the relevant Cleaning Procedure (CP), or the shipping configuration sheet of the top-level drawing.

**NOTE 2:** For external transportation via courier or Valcor's van, bins with dividers are acceptable. For all other methods (UPS, FedEx, etc.), boxes or Pelican cases shall be used.

**LEVEL 1  
ONE FORM OF PROTECTION**

- Parts to be individually separated with one form of separation.
  - Acceptable methods of separation include bubble bags, dividers, plastic trays, etc.
- No part-on-part contact allowed.
- Parts that fall into this category may include bodies, plungers, etc.



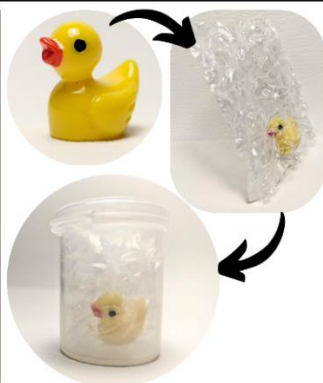
**LEVEL 1+  
ONE FORM OF PROTECTION WITH ADDITIONAL REQUIREMENTS**

- Parts to be individually separated per Part Protection Level 1, with the addition of any special packaging requirements.
  - Special packaging requirements to be documented in job comment/router/MoM, and/or blueprint, and must be adhered to.
- No part-on-part contact allowed.
- Parts that fall into this category may include Aircraft subassemblies and finished goods with connectors, etc.



**LEVEL 2  
TWO FORMS OF PROTECTION**

- Parts to be individually separated with two forms of separation.
  - 1st form of separation must be of a soft material, e.g. plastic sleeve webbing, bubble bags, foam in place, custom foam, etc.
  - 2nd form of separation must be of a rigid material, e.g. vials, jewelry cases, plastic trays, boxes, bins with dividers, Pelican cases, etc.
- No part-on-part contact allowed.
- Stored in individual packaging.
- Parts that fall into this category may have one or more critical surfaces, and/or surfaces with finish requirements, etc.



**LEVEL 2+  
TWO FORMS OF PROTECTION WITH ADDITIONAL REQUIREMENTS**

- Parts to be individually separated per Part Protection Level 2, with the addition of any special packaging requirements.
  - Special packaging requirements to be documented in job comment/router/MoM, and/or blueprint, and must be adhered to.
- No part-on-part contact allowed.
- Stored in individual packaging.
- Parts that fall into this category may have one or more critical surfaces, and/or surfaces with finish requirements, etc.



**LEVEL 3  
PART PROTECTION PROCEDURE (3P) DOCUMENT**

- Parts to be packed, transported, and stored whilst adhering to the specific requirements of any relevant 3P documents.
- No part-on-part contact allowed.
- Stored in individual packaging.
- Parts that fall into this category may have one or more critical surfaces, and/or surfaces with finish requirements, etc.

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**PART PROTECTION PROCEDURE  
RUBBER DUCKS**

ALL DUPLICATIONS OF THIS DOCUMENT MUST BE PRINTED IN COLOR

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## Revision History

**NOTICE: This document shall be uploaded to the “Suppliers” section of Valcor.com upon revision.**

Rev	Change Description	Date	Approval
A	Initial release; complete rewrite of SQM-001. This document supersedes SQM-001.	9/29/2021	N. Heath L. Fabiano C. Lewis J. Phillips
B	Modified Section 6.10 to clarify requirements for Supplier Deviation and Change Request (DCR) process.	5/9/2023	N. Heath L. Fabiano C. Lewis J. Phillips
C	Added Section 5.8 to address nonconforming material shipment and notice of quality escape Minor modifications to Section 5.4 and 5.10 (was 5.9) Renamed Section 5.11 (was 5.10) and added language regarding false, fictitious, or fraudulent statements Modified Section 6.19 and 6.21 to use formal DPRV terminology	1/6/2025	B. Kaiser N. Heath R. Fanders A. Bandy L. Fabiano M. Swirad
D	Moved revision history to end of document and added revision notice Renamed Section 5 (was Introduction) Revised Quality Policy (Section 5.1); added reporting requirements for counterfeit material (Section 5.7); revised nonconformance reporting requirements (Section 5.8) Moved Sections 6.6 and 6.7 - now Sections 5.14 and 5.15 Rewrote Sections 6.9 (CoCs) and 6.10 (MTRs) (were sections 6.11 and 6.12)	12/11/2025	Nicholas Heath Mike Swirad Roy Fanders Piotr Turon