

Supplier Quality Requirements Manual

REVISION HISTORY

Revision	Date	Description of Change
1	3/13/2025	Introduction
2	5/9/2025	Updated to fix NCR's from initial audit.
3	5/27/2025	Reworded Source Inspection to match the standard

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Approved By

Quality Department

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Management

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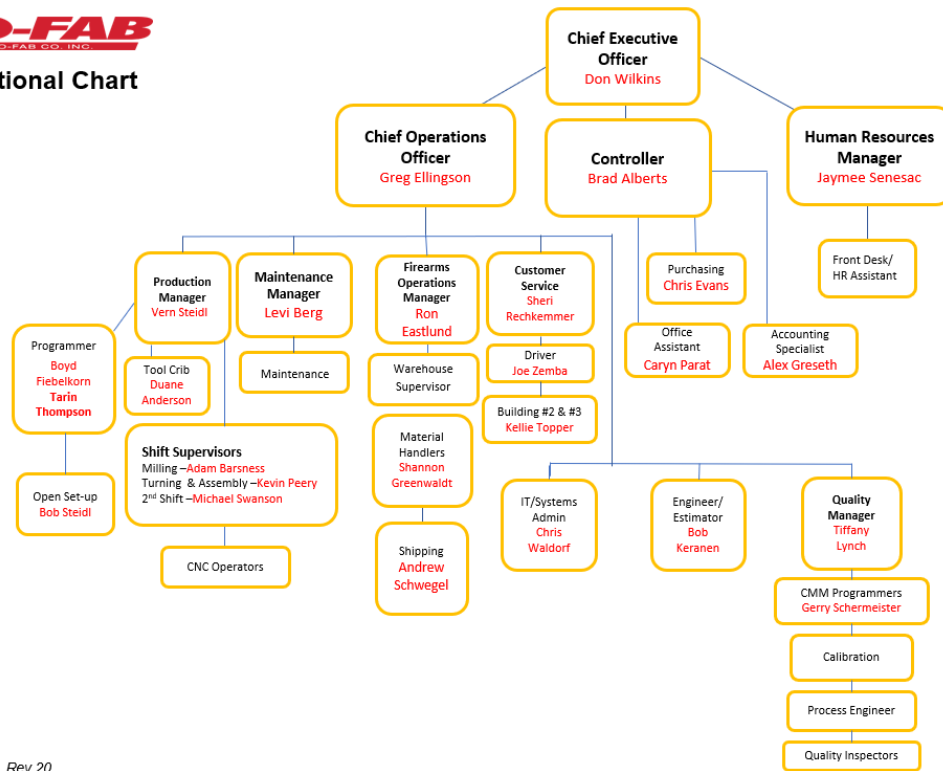
Corporate Overview

Alexandria Pro-Fab is the Midwest’s leading diversified manufacturer of OEM products, providing precision-engineered solutions for a wide variety of commercial and industrial partners.

Corporate Mission

Alexandria Pro-Fab is committed to providing our customers with premier customer service. This means meeting customer requirements for product quality, service, and on time delivery. Alexandria Pro-Fab aims to accomplish these objectives with strong leadership, a highly capable and empowered workforce, and partnering with best-in-class Suppliers.

Organization Structure



Revised 02/18/25, Rev 20

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• INTRODUCTION

Alexandria Pro-Fab recognizes the very important role our Suppliers have in the value we offer our customers. As an extension of our own operations, we rely on our Suppliers to provide material, products, and services which meet all the requirements of Alexandria Pro-Fab contracts, applicable specifications, and the quality management requirements outlined herein.

Alexandria Pro-Fab serves diverse market sectors, such as aerospace. The purpose of this manual is to inform Company Suppliers of the core expectations we have regarding the Suppliers' quality management systems, design requirements, and manufacturing process controls required for the purpose of doing business with Alexandria Pro-Fab. This manual describes what Alexandria Pro-Fab expects its Suppliers to do to ensure that all Alexandria Pro-Fab requirements and expectations are met.

Scope This manual applies to all Suppliers providing Alexandria Pro-Fab with materials, products, processing, and related services, including intra-company Suppliers, and when applicable, to Supplier sub-tier sources. The general requirements outlined herein do not supersede conflicting requirements in the Alexandria Pro-Fab contract, or drawing, including applicable engineering specifications and process specifications, or applicable long term agreement(s). This manual specifies ***additional requirements for Alexandria Pro-Fab Suppliers*** as shown in ***bold italics***.

Requirements In this manual, the terms "shall" and "must" mean that the described action is mandatory; "should" means that the described action is necessary and expected with some flexibility allowed in the method of compliance; and "may" means that the described action is permissible or discretionary.

Questions concerning this manual should be directed to your respective Alexandria Pro-Fab Buyer.

• SUPPLIER CODE OF CONDUCT

Suppliers shall ensure operations are being performed in a manner that is appropriate, as it applies to their ethical, legal, environmental, and social responsibilities. Below is a listing of the basic requirements:

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Compliance with Local Laws and Regulations

Suppliers must adhere to the laws and regulations in the locality in which they reside. This includes all local, state, and federal laws/regulations in the country of origin.

Compliance with Environmental, Health, and Safety Laws

The Supplier must maintain and operate its manufacturing/production facilities and processes in accordance with local, state, and federal laws/regulations in the country of origin. At no time shall any Alexandria Pro-Fab person be exposed to hazardous materials or unsafe conditions as a result of Supplier shipments to an Alexandria Pro-Fab location, or while visiting a Supplier's location. For items with inherent hazards, safety notices must be clearly visible. As applicable, documented safety handling and protection information must be provided.

Product Safety

In all instances where a product is manufactured to a new design, for a new system, or for a new application, it is important that Supplier and Alexandria Pro-Fab allocate responsibility for assuring that all performance, endurance, maintenance, safety, and warning requirements are met. It is preferred that this allocation of responsibility be in writing.

Non-Discrimination

Suppliers shall not discriminate against race, color, sex, religion, age, physical disability, political affiliation, or other defining characteristics as prohibited by local, state, and federal laws/regulations in the country of origin.

• Labor

Child Labor – Suppliers shall employ workers of minimum legal age in accordance with local, state, and federal laws/regulations in the country of origin. Child labor laws must be followed.

Forced/Indentured Labor – Suppliers shall not practice the use of forced or indentured labor.

Work Hours/Days – Suppliers shall not exceed the daily and weekly working hours as permitted by local, state, and federal laws/regulations in the country of origin.

Wages and Benefits – Suppliers shall compensate workers in accordance with local, state, and federal laws/regulations in the country of origin. This includes minimum legal wage, overtime wages, and benefits (required by law).

• Ethics

Evidence of corruption, bribes, improper advantage, or any other form of illegal practice by the Supplier or associated operations will terminate all relations with Alexandria Pro-Fab. Suppliers

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will conduct their business in a manner that meets the 'Code of Ethics' policy of Alexandria Pro-Fab. All of these documents may be obtained from the Alexandria Pro-Fab Buyer.

Code of Conduct and Policy Enforcement

This policy applies to Suppliers and their sub-tier sources. It is the responsibility of the Supplier to verify and monitor compliance of this code at their operations and sub-tier source operations.

Confidentiality

The Supplier shall ensure the confidentiality of Alexandria Pro-Fab contracted products and projects under development, and related product information, as well as intellectual property shared because of the working relationship.

1 • QUALITY SYSTEM REQUIREMENTS

Suppliers shall maintain a Quality Management System (QMS) suitable to the products and services provided to Alexandria Pro-Fab, that is certified by an accredited third-party certification body to the latest version of one or more of the following, as applicable:

- ISO 9001 - Quality Management System Requirements
- AS/EN/JISQ9100 - Quality Management System Requirements
- ISO/TS 16949 - Quality System Requirements
- ISO 13485 - Quality Management System Requirements

See the following sources for a listing of accredited certification bodies:

The U.S. accreditation body for management systems can be found at ANSI-ASQ National Accreditation Board, <http://www.anab.org>.

For a list of Accreditation Boards from other countries, refer to the International Accreditation Forum at <http://www.iaf.nu>. For AS9100, see SAE OASIS database at <http://www.sae.org/iaqg/> For ISO/TS 16949, see International Automotive Oversight Bureau at <http://www.iaob.org>

In the absence of third-party certification, depending on the product, its application, value, and criticality, the Alexandria Pro-Fab Buyer and Quality representative may authorize the acceptance of other evidence of compliance. This may include second-party (Alexandria Pro-

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Fab) audit or first-party (self) assessment to the applicable criteria above, or to a set of alternative basic quality requirements (such as those described in a 'Alexandria Pro-Fab Supplier Quality Assessment' checklist).

1.1 QUALITY MANUAL

Upon request, the Supplier shall furnish Alexandria Pro-Fab with a copy of the Supplier's Quality Management System Manual, which is to be current and approved by the Supplier's management, including or referring to related documents. The quality management system documentation shall include Supplier's statements of a quality policy and quality objectives. Top management shall define quality objectives and measurements which should address customer expectations and be achievable within a defined period. The Supplier shall promptly notify the Alexandria Pro-Fab Buyer of any substantive changes to the Supplier's quality management system or personnel.

2 • SUPPLIER APPROVAL PROCESS

Alexandria Pro-Fab requires all Suppliers to be approved prior to the issuance of contracts. All Suppliers must be approved by Alexandria Pro-Fab, regardless of approvals by customers or other entities.

2.1 SUPPLIER ASSESSMENT

The Supplier Approval Process may include the following:

a) Supplier Initial Assessment

Alexandria Pro-Fab may request the Supplier to provide a copy of its quality management system certificate and/or complete a self-assessment of its business and quality management system and capabilities (i.e., quality, delivery, technology, cost, and continual improvement objectives).

b) Documentation Audit

In those cases where a Supplier's quality management system has not been certified by an accredited certification body, Alexandria Pro-Fab may request a copy of the Supplier's Quality Manual and supporting procedures (and perhaps internal audit reports) to determine if the Supplier's quality management system meets Alexandria Pro-Fab requirements.

c) On-Site Assessment

Generally, when a Supplier is certified to a related standard by an accredited certification body,

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Alexandria Pro-Fab will not conduct an on-site assessment of the Supplier's quality management system against the same criteria. However, Alexandria Pro-Fab and/or its customers, due to product/process complexity or criticality, may elect to conduct on-site assessments of a Supplier's product or process capabilities. As a result, findings may be issued. These assessments could include:

Quality Management System (QMS) – If necessary, as a result of (or in conjunction with) product or process capability assessments, to determine whether the Supplier's quality management system meets one or more of the applicable standards, and is functioning effectively.

Business and Manufacturing Operations – to determine whether the Supplier has the financial resources, production capacity, and other business resources needed to fulfill Alexandria Pro-Fab volume production needs and continuity of supply.

Continual Improvement Initiative – to determine if the Supplier's culture, methods, and skills are present to actively pursue continual improvement.

Technology Assessment - to determine whether the Supplier has the needed technical resources, including production and inspection equipment, facilities, engineering resources, Alexandria Pro-Fab-specified computer-aided design language/format, electronic commerce capability, etc.

Sub-Tier Supplier Control – to evaluate the effectiveness of the Suppliers sub-tier management processes and ensure that products or services procured from sub-tier sources and delivered to Alexandria Pro-Fab conform to all applicable Alexandria Pro-Fab requirements.

3 • GENERAL REQUIREMENTS

The following set of general quality requirements applies to all Suppliers.

3.1 COMPLIANCE TO CONTRACTUAL REQUIREMENTS

Upon accepting an Alexandria Pro-Fab contract, the Supplier is responsible for compliance to all contract (e.g., engineering drawing, specification, purchase order) requirements. All documents, drawings, and specifications, regardless of origin, are applicable to the Supplier when specified in the contract or documents referenced in the contract, and are required to be used at all levels of the supply chain. Unless otherwise specified in the contract, the document revision in effect on the date of issue of the contract applies to the contract. Neither audit, surveillance, inspection, or tests made by Alexandria Pro-Fab, representatives of Alexandria Pro-Fab or its customer(s), at Supplier's facilities, at any sub-tier facilities, or upon receipt at

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Alexandria Pro-Fab, relieves the Supplier of the responsibility to furnish acceptable products or services that conform to all contract requirements; nor does it preclude subsequent rejection by Alexandria Pro-Fab or its customers.

3.2 ALEXANDRIA PRO-FAB DESIGNATED SOURCES

Where specified by contract, the Supplier shall purchase products, materials, or services from Alexandria Pro-Fab designated sources. However, the Supplier is responsible to ensure that items procured from such sources meet all applicable technical and quality requirements.

3.3 CONTROL OF SUB-TIER SUPPLIERS

The Supplier, as the recipient of the contract, is responsible for meeting all requirements, including work performed by the Supplier's sub-tier Suppliers (also known as Sub-Suppliers or subcontract Suppliers). When the Supplier uses sub-tier sources to perform work on products and/or services scheduled for delivery to Alexandria Pro-Fab, the Supplier shall include (flow-down) on contracts, to its sub-tier sources, all of the applicable technical and quality requirements contained in the Alexandria Pro-Fab contract, including quality system requirements, regulatory requirements, the use of Alexandria Pro-Fab designated sources, and the requirement to document and control 'key characteristics' and/or 'key processes,' and to furnish certifications and test reports as required. Alexandria Pro-Fab and its customers reserve the right of- entry to sub-tier facilities, subject to proprietary considerations.

a) Special Process Suppliers

For Alexandria Pro-Fab NPD Suppliers, unless otherwise specified by contract, the Supplier shall only use special process sources that are approved by Alexandria Pro-Fab and listed on the Alexandria Pro-Fab Approved Process Suppliers List (APSL). This requirement applies to Suppliers who perform special processing such as heat treating, plating, etc., as part of their internal operations. The Supplier shall flow-down this requirement to its sub-tier sources.

b) Risk Management

For Alexandria Pro-Fab NPD Suppliers, the Supplier shall establish a risk management program in accordance with the guidelines established by SAE ARP9134 (or equivalent) to effectively assess those elements from all aspects of the business that could affect the quality of the products and/or services scheduled for delivery to Alexandria Pro-Fab Supplier Quality. A copy of the Supplier's risk management program shall be furnished to the Alexandria Pro-Fab's Buyer upon request.

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3.4 CONTROL AND RELEASE OF ALEXANDRIA PRO-FAB FURNISHED DOCUMENTS

Documents furnished by Alexandria Pro-Fab to the Supplier are furnished solely for the purpose of doing business with Alexandria Pro-Fab. Proprietary documents may be furnished to the Supplier in hard copy, electronic or other media. The Supplier is responsible for controlling and maintaining such documents to preclude improper use, loss, damage, alteration and/or deterioration.

Unless authorized by the Alexandria Pro-Fab Buyer in writing, the Supplier may not transmit or furnish any Alexandria Pro-Fab furnished documents, or copies of such documents, to anyone outside the Supplier's business organization except to a sub-tier source used by the Supplier for performance of work on the Alexandria Pro-Fab contract. The Supplier shall return to Alexandria Pro-Fab, or purge electronic copies of, all proprietary documents with the last delivery of products or services on the contract. Alexandria Pro-Fab may request the Supplier to furnish objective evidence or certification that proprietary documents have been purged. The Supplier shall flow down this requirement to all sub-tier sources, when such sources will be in receipt of Alexandria Pro-Fab proprietary documents during performance of work for the Supplier.

3.5 E-BUSINESS REQUIREMENTS

Alexandria Pro-Fab currently uses and are continually expanding the use of electronic business tools to facilitate day-to-day activities using electronic linkages between Alexandria Pro-Fab internal operations as well as with Alexandria Pro-Fab Suppliers and customers. Contracts, delivery schedules, notification of product rejections, requests for corrective action, etc. may be transmitted to Suppliers electronically, and Alexandria Pro-Fab expects that Suppliers will adopt these tools to reduce errors and improve efficiency. For a list of e-business requirements and opportunities contact the Alexandria Pro-Fab Buyer.

3.6 ELECTRONIC DOCUMENTS

The accuracy and authenticity of electronic documents and forms submitted to Alexandria Pro-Fab is of highest importance. The following rules apply and may be subject to review by Alexandria Pro-Fab at Suppliers facilities:

- The issue of electronic documents and application of electronic signatures must be under the direct control of the individual whose name appears on the electronic document
- The electronic signatures may only be applied at the place where the individual is located and the individual must have direct access and responsibility for the products or services described in the electronic document
- The application of the electronic signature certifies that the signature (individual) represents an authorized Alexandria Pro-Fab official.

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For Alexandria Pro-Fab NPD Suppliers, the use of electronic forms and signatures must be described in and governed by Supplier's documented procedures.

- **Parts Manufacturer Approval (PMA) Certification**

When the contract requires the Supplier to furnish replacement or modification parts, such parts shall be manufactured and certified in accordance with Title 14 CFR Part 21, Subpart K, §21.303. The parts shall be marked in accordance with Title 14 CFR 45, Subpart B, § 45.15 and submitted to Alexandria Pro-Fab with Form 8130-3 executed in accordance with FAA Order 8130.21

3.8 BUSINESS CONTINUITY

The Supplier should have a business continuity plan which would allow for the safeguarding, storage and recovery of engineering drawings, electronic media, and production tooling in the event of damage or loss. This plan should also contain contingency plans to satisfy Alexandria Pro-Fab requirements in the event of significant utility interruptions, labor shortages, equipment failure and field returns.

3.9 PREVENT THE USE OF COUNTERFEIT PARTS

Suppliers shall establish and maintain a counterfeit parts prevention program in accordance with AS9100 requirements. This program must include risk mitigation processes throughout the supply chain to detect and prevent the use of counterfeit or suspect counterfeit parts.

3.10 Contribution to Product Safety

Suppliers must ensure that all employees involved in the production, inspection, testing, or handling of products understand their role and its impact on product safety. Training programs must include information on product safety, potential hazards, and the critical nature of their specific tasks.

4 • PRODUCT QUALIFICATION

This section defines the generic requirements for production part qualification and approval. The purpose is to determine if all Alexandria Pro-Fab design and specification requirements are properly understood by the Supplier and that the manufacturing processes have the capability to consistently meet these requirements.

In all instances where a product is manufactured to a new design, for a new system, or for a new application, it is important that Supplier and Alexandria Pro-Fab allocate responsibility for

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assuring that all performance, endurance, maintenance, safety, and warning requirements are met. It is preferred that this allocation of responsibility be in writing.

4.1 FIRST ARTICLE INSPECTION

As a minimum, a First Article Inspection (FAI) is required to initially qualify a part/process for Supplier approval, unless the PPAP process (below) is used instead. Furthermore, a new FAI may be requested if there is an extended gap of time since last production. The FAI requires that all features and characteristics on the design specification and control plan be inspected and verified prior to production. Actual measured values shall be recorded as opposed to general statements of conformance or other notations simply indicating acceptance.

For First Article Inspection guidance, see AIAG PPAP Manual (Appendix C, D, & E) – Production Part Approval Process (available from www.aiag.org). When submitting a First Article Inspection report, the Supplier should use the form provided by the Alexandria Pro-Fab Buyer. Otherwise, generic Form, or other convenient and equivalent may be used.

In addition to an FAI, Suppliers shall, as a minimum, develop a Control Plan by identifying special product and process characteristics that are key to achieving quality. The Supplier shall also include those special characteristics designated by Alexandria Pro-Fab in the drawing, specification, or contract. Alexandria Pro-Fab Control Plan or other convenient and equivalent version may be used.

For Alexandria Pro-Fab NPD Suppliers, a new FAI is required if there is a twenty-four (24) month gap of time since last production and excess stock from last production cannot be used to satisfy the FAI requirement. A delta FAI is required when new revision of the part number is released. Unless otherwise required by contract, all FAI's shall be documented in accordance with AS/EN/SJAC9102.

4.2 PRODUCTION PART APPROVAL PROCESS

When required by the Alexandria Pro-Fab contract, the Supplier shall submit to Alexandria Pro-Fab a more comprehensive Production Part Approval Process (PPAP) qualification package. The Supplier is responsible for obtaining the latest revision of the applicable AIAG core tool reference manuals and forms (see Applicable Documents section for where these references may be obtained).

The AIAG Core Tools Manuals are:

- Advanced Product Quality Planning (APQP) and Control Plan
- Production Part Approval Process (PPAP)
- Potential Failure Mode and Effects Analysis (FMEA)
- Measurement Systems Analysis (MSA)
- Statistical Process Control (SPC)

When PPAP is specified on the Alexandria Pro-Fab contract, the Supplier shall submit a “Level 3” PPAP package to the Alexandria Pro-Fab Buyer which consists of the following items, unless

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otherwise directed. See AIAG PPAP Manual, Table 4.2, for complete list of submission requirements for each level of PPAP. Also, see AIAG APQP Manual for related guidance on associated product and process design and development methodology and techniques.

A) Design Record, Change Documents, and Customer Approval

The Supplier shall have the design record for the saleable product/part and components; any authorized engineering change documents for those changes not yet recorded in the design record but incorporated in the product, part, or tooling; and evidence of Alexandria Pro-Fab engineering approval. See AIAG PPAP Manual.

B) Process Flow Diagram

The Supplier shall have a visual diagram of the proposed or current process. This diagram shall clearly describe the production process steps and sequence, and meet the specified Alexandria Pro-Fab needs, requirements, and expectations. See AIAG PPAP Manual.

C) Failure Mode and Effects Analysis

Suppliers with product design responsibility shall develop a Design FMEA in accordance with, and compliant to, Alexandria Pro-Fab-specified requirements. A single Design FMEA may be applied to a family of similar parts or materials. Suppliers shall develop a Process FMEA in accordance with, and compliant to, Alexandria Pro-Fab-specified requirements. A single Process FMEA may be applied to a process manufacturing a family of similar parts or materials if reviewed for commonality by the Supplier. See AIAG FMEA Manual.

D) Measurement Systems Analysis

The Supplier must develop or obtain gages and standards to control their processes and to determine product conformance to specifications. Variable gages and measurements are preferred. Alternative methods, gages or standards may be used at Alexandria Pro-Fab to verify the Supplier's inspection results. Alexandria Pro-Fab may request the Supplier to participate in a correlation study to compare Supplier measurement results against results obtained by Alexandria Pro-Fab gages and methods. The Supplier shall perform Measurement Systems Analysis (MSA) studies, e.g., gage repeatability & reproducibility, bias, linearity, stability, for all new or modified gages, measurement, and test equipment. See AIAG MSA Manual.

E) Control Plan

The Supplier shall have a Control Plan that considers the output from the FMEA and defines all methods used for process monitoring and control of special product/process characteristics. The control plan covers three distinct phases: prototype, pre-launch, and production. A single control plan may apply to a group or family of products that are produced by the same process at the same source. See AIAG APQP Manual.

F) Process Capability Study

Process Capability Index (Cpk) is a comparison of the inherent variability of a process output to specification limits under statistically stable conditions. Most methods for estimating capability

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require that the characteristic being evaluated is approximately normally distributed, and in statistical control. The distribution should be determined prior to estimating capability. If the process is not in statistical control, all assignable causes must first be identified and removed. Special techniques are available for calculating capability when inherent assignable causes, such as tool wear, are present. Definitions and calculations for Cpk and Ppk indices are found in AIAG PPAP and SPC Manuals. Unless otherwise approved by Alexandria Pro-Fab, the Supplier shall use the following as acceptance criteria for evaluating initial process study results of special characteristics for processes that appear stable:

Results Interpretation

Index > 1.67 The process currently meets acceptance criteria.

$1.33 \leq \text{Index} \leq 1.67$ The process is marginally acceptable.

Index < 1.33 The process is not acceptable.

G) Certification and Test Reports

The Supplier shall provide evidence that the following verifications required by the design record and control plan have been completed and that results indicate compliance with specified requirements:

- Dimensional Results – for each unique manufacturing process, e.g., cells, lines, molds, patterns, a record of actual results of all characteristics.
- Material and Performance Test Results – for all parts and product materials with chemical, physical, metallurgical, and functional performance requirements.
- Qualified Laboratory Documentation – documentation showing laboratory results of the qualifications for the type of measurements or tests conducted and the standards used.
- Sample Product – actual samples as required by the applicable specification or Alexandria Pro-Fab contract.
- Master Sample – retain a master sample, when required by the Buyer, and make available upon request.
- Checking Aids – if requested by the Buyer, submit part-specific assembly or component checking aids.
- Records of Compliance – copies of records showing compliance to all applicable Alexandria Pro-Fab –specific requirements.

See AIAG PPAP Manual for applicable forms and instructions.

H) Part Submission Warrant

Upon completion of all PPAP requirements, the Supplier shall complete the Part Submission Warrant (PSW). A separate PSW shall be completed for each Alexandria Pro-Fab part number unless otherwise specified by the Alexandria Pro-Fab contract. Upon receipt, Alexandria Pro-Fab will review and either approve, reject, or provide interim approval. See AIAG PPAP Manual for forms and instructions.

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5 • PROCESS CONTROL

This section defines the basic necessities for Suppliers to control their manufacturing processes.

5.1 SPECIAL CHARACTERISTICS

The Supplier shall demonstrate conformity to those special characteristics designated by Alexandria Pro-Fab through means of documentation and appropriate control methods. In addition to any special characteristics identified by Alexandria Pro-Fab, the Supplier shall also review, identify, document, and control other product and process characteristics that are key to achieving quality.

5.2 ERROR-PROOFING

The Supplier should use error-proofing devices and techniques as a form of process control; especially for repetitive functions, difficult tasks prone to mistakes, or where the cost of error is high.

5.3 WORK INSTRUCTIONS

The Supplier shall prepare documented work instructions, as necessary, for all employees having responsibilities for the operation of processes that impact product quality. These instructions shall be maintained current and accessible for use at the work station.

5.4 CONTROL OF MONITORING AND MEASURING DEVICES

The Supplier shall determine the monitoring and measurement to be undertaken and the monitoring and measuring devices needed to provide evidence of conformity of product to determined requirements. As a minimum, where necessary to ensure valid results, measuring equipment shall:

- A. be calibrated or verified at specified intervals, or prior to use, against measurement standards traceable to international or national measurement standards; where no such standards exist, the basis used for calibration or verification shall be recorded; and
- B. be identified to enable the calibration status to be determined.

For Alexandria Pro-Fab NPD Suppliers, unless otherwise specified by contract, the Supplier shall establish procedures to control Measuring and Test Equipment (M&TE) that are in compliance with the requirements of ANSI/NCSL Z540-1 or ISO 10012.

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5.5 STATISTICAL PROCESS CONTROL

Where specified in the Control Plan, the Supplier is required to apply effective statistical process controls. Suppliers should consult the Statistical Process Control (SPC) manual published by AIAG for guidance, methods, examples, and related reference information.

5.6 PREVENTIVE MAINTENANCE

The Supplier should identify key process equipment and provide resources for machine/equipment maintenance activities and develop an effective planned total preventive maintenance system.

5.7 SOURCE INSPECTION

Alexandria Pro-Fab's suppliers will give the right of access by Alexandria Pro-Fab, their customers, and regulatory authorities to the applicable areas of facilities and to applicable documented information, at any level of the supply chain. The Supplier shall provide the necessary access, equipment, and resources required to effectively accomplish the source inspection.

5.8 SHELF-LIFE CONTROL

1. Materials - With each delivery of materials or products that have a limited or specified shelf life, the Supplier shall furnish data that shows (a) the cure or manufacture date, (b) expiration date or shelf life, (c) lot or batch number, and when applicable any special handling or storage requirements. Unless otherwise specified by contract, for all shelf-life limited materials or products delivered to Alexandria Pro-Fab, the remaining shelf life shall be a minimum of 75% of the total shelf life for the material.

5.9 SAMPLING INSPECTION

The Supplier is responsible for 100% verified quality for all items delivered to Alexandria Pro-Fab. For

Alexandria Pro-Fab NPD Suppliers, when the Supplier elects to use statistical methods for the acceptance of products or processes, such methods shall be in compliance with the requirements established by SAE ARP9013, 9013/1, 9013/2, 9013/3 and 9013/4 as applicable, except that in all cases the sample sizes shall be AQL 4.0 or higher (i.e., AQL 1.0, .65, etc.) and the criteria for lot acceptance as zero (i.e., C=0). A copy of Suppliers statistical process control plan shall be furnished to Alexandria Pro-Fab upon request.

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5.10 OPERATOR SELF-VERIFICATION

Alexandria Pro-Fab NPD Suppliers may delegate inspection authority and product/process inspection and acceptance to production operators. In such cases, the Supplier's operator self-verification program shall comply with the requirements of SAE ARP9162. Prior to implementation of the program on products/processes scheduled for delivery to Alexandria Pro-Fab, the Supplier shall request and obtain approval from Alexandria Pro-Fab in writing.

5.11 RAW MATERIAL LOT CONTROL

For Alexandria Pro-Fab, in those cases where the Supplier elects to use more than one lot of raw material, the Supplier shall ensure, document, and furnish positive traceability of each individual product to the raw material certification/test report that represents the raw material from which each of the products was manufactured. Traceability shall be provided by identifying the raw material heat, lot, batch or melt number from the certification/test report on the product and/or on packaging (when used), or the products segregated and identified.

6 • CHANGE CONTROL

The Supplier is responsible for controlling changes and notifying the Alexandria Pro-Fab Buyer of all changes to the approved part design, manufacturing process, or site.

6.1 CHANGE CONTROL PROCESS

The Supplier shall have a process to ensure that relevant versions of applicable documents furnished by Alexandria Pro-Fab (as well as those specified of external origin) are available at points of use.

The Supplier is responsible for the timely review, distribution and implementation of all Alexandria Pro-Fab engineering standards/specifications and changes in accordance with the schedule required by Alexandria Pro-Fab. Timely review should be as soon as possible, and shall not exceed two working weeks. The Supplier shall maintain a record of the date on which each change is implemented in production. Implementation shall include updated documents.

6.2 SUPPLIER CHANGE REQUESTS

Suppliers shall not make changes to their processes, location, facilities, equipment, material, product design (or any change which may affect product design or function) without written approval from the Alexandria Pro-Fab Buyer for:

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- Correction of a discrepancy on a previously submitted part;
- Product modified by an engineering change to design records, specifications, or materials; or
- Any planned changes by the Supplier to the design, process, or manufacturing location, such as:
 - A. Use of other material than was used in previously approved part or product
 - B. Production from new, additional, replacement or modified tools, dies, molds, patterns, etc.
 - C. Production following upgrade or rearrangement of existing tooling or equipment
 - D. Production from tooling and equipment transferred to a different plant site or from an additional plant
 - E. Change of sub-tier Supplier for parts, nonequivalent materials, or services (e.g. heat treating, plating, etc.)
 - F. Product produced after tooling has been inactive for production for 12 months or more
 - G. Change to test/inspection method – new technique (no effect on acceptance criteria)
 - H. For bulk materials: new source of raw material from new or existing Supplier, or change in product appearance attributes, etc.
 - I. Use of any non-conventional manufacturing methods such as electro-discharge machining (EDM), electro-chemical machining (ECM), laser or abrasive water jet metal cutting, flame spray coatings, etc.

Before submitting to Alexandria Pro-Fab a request for a permanent change to a Supplier-controlled design, the Supplier shall review the FMEA and Control Plan, as applicable, to ensure that all process-related issues have been addressed and resolved. Alexandria Pro-Fab may require the Supplier to submit an updated FMEA and Control Plan prior to approval of such permanent changes. Alexandria Pro-Fab may also require other portions, or all, of the related qualification process to be repeated. In some cases, Alexandria Pro-Fab may elect to review Supplier proposed permanent changes at the Supplier's facility.

To request a permanent engineering change, the Supplier shall use the Part/Process Change Notification form, or other equivalent form of notification acceptable to the Alexandria Pro-Fab Buyer.

To request a one-time or temporary deviation, Suppliers shall use Alexandria Pro-Fab's Supplier Deviation

Request, or other equivalent form acceptable to the Alexandria Pro-Fab Buyer.

For Alexandria Pro-Fab NPD Suppliers, unless the Supplier is specifically granted material review and disposition authority by the contract, the Supplier shall document all nonconforming conditions in accordance with the requirements of AS/EN/SJAC9131 and submit them to Alexandria Pro-Fab Material Review Board (MRB) for disposition.

7 • CONTROL OF NONCONFORMING MATERIAL

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For nonconforming products supplied to Alexandria Pro-Fab, including those that reach an Alexandria Pro-Fab customer, the Supplier must cover all costs to correct the nonconformance.

7.1 SUPPLIER REQUEST FOR NONCONFORMANCE DEVIATION

A Supplier shall not knowingly ship product that deviates from the drawing, specification limits, or design intent without prior written authorization from the Alexandria Pro-Fab Buyer. If such a condition exists, the Supplier may petition the Alexandria Pro-Fab Buyer, in writing, to allow shipment of the product under a written nonconformance deviation. The Supplier shall use Alexandria Pro-Fab's Supplier Deviation Request, or equivalent, unless otherwise directed. If requested by the Alexandria Pro-Fab Buyer, the Supplier must send samples of such nonconforming items to Alexandria Pro-Fab for evaluation. The cost of shipping, inspection, and testing to determine the potential acceptability of such product will be charged to the Supplier. Alexandria Pro-Fab approval of a deviation is specific to the products for which it has been submitted and approved and shall not be construed as a permanent engineering change. The Supplier must begin work immediately on corrective action. In all cases, the Supplier shall fully contain all product suspected of being nonconforming. In addition, nonconforming product may be returned to the Supplier at Supplier expense, or the Supplier may be required to sort any suspect product already shipped to Alexandria Pro-Fab sites or be charged back for the cost of sorting by Alexandria Pro-Fab. Any parts shipped to Alexandria Pro-Fab that have been approved for deviation shall be clearly identified as such externally on the box, container, or other packaging and on shipping documentation. Inside of each box shall contain a copy of the Alexandria Pro-Fab -approved deviation document.

For Alexandria Pro-Fab NPD Suppliers, the Supplier shall document all nonconforming conditions in accordance with the requirements of AS/EN/SJAC9131 and submit them to the Alexandria Pro-Fab Buyer for review.

7.2 CONTROL OF REWORKED PRODUCT

Rework is defined as additional operations that are not part of the basic production process flow, which will bring product in full compliance with applicable drawings and specifications. Instructions for rework, including re-inspection requirements, shall be accessible to and utilized by the Suppliers appropriate personnel. All rework shall be documented and accepted by quality. On the other hand, *repair* is defined as using alternative manufacturing techniques, methods, materials, or processes which *may not* bring product into full compliance with applicable drawings and specifications. Repairs are not allowed without written approval from Alexandria Pro-Fab.

7.3 SUPPLIER CONTAINMENT

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For product quality problems reported by Alexandria Pro-Fab to the Supplier, until formal corrective action has been taken and approved, the Supplier shall provide documented evidence with subsequent shipments that such product has been inspected for the identified nonconformance and meets all applicable requirements.

8 • PACKAGING, LABELING, DELIVERY & RECORD RETENTION

Preservation, packaging, labeling, and shipping methods must comply with common industry practices and Alexandria Pro-Fab requirements specified on the contract.

8.1 PRESERVATION

In order to detect deterioration, the condition of product in stock should be assessed at appropriate planned intervals. The Supplier should use an inventory management system to optimize inventory turns over time and should assure stock rotation, such as “first-in-first-out” (FIFO).

8.2 PACKAGING

The Supplier must adequately plan for packaging designed to prevent product contamination, deterioration or loss and to eliminate shipping damage. Suppliers should provide expendable packaging or returnable containers, where appropriate, that provide for sufficient density and protection from any likely damage that may occur. Expendable materials and packaging must meet local and national standards for safe disposal and/or recycling.

8.3 LABELING

Labeling and bar code requirements may vary among Alexandria Pro-Fab divisions. The Alexandria Pro-Fab Buyer may provide the Supplier with the necessary specifications.

8.4 DELIVERY

The Supplier should systematically inform Alexandria Pro-Fab of any delay in delivering product and provide a new dispatch date. The Supplier is responsible for additional transport costs due to delays.

Certificates of Conformance (CoC)

A signed CoC by the Suppliers head of quality or Alexandria Pro-Fab officer (or their authorized delegate) attesting that all products and/or services delivered are in compliance with all contract requirements shall be furnished with each shipment to Alexandria Pro-Fab,

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All CoC's must be in the English language and may be in electronic format with electronic signatures. All signatures or signature blocks must clearly show title of the signatory. The CoC shall include:

- a) Supplier Name*
- b) Part number*
- c) Drawing/specification revision*
- d) Alexandria Pro-Fab contract number (PO Number)*
- e) Line/release number (when applicable)*
- f) Quantity delivered*
- g) Packing list/shipper number (when applicable)*

When additional certifications/test reports are required for special processing, raw material, etc. the requirements will be specified on the contract.

8.5 RECORD RETENTION

The Supplier shall retain quality records for a time period specified by the Alexandria Pro-Fab contract or related reference documents. Upon request, the Supplier shall be capable of retrieving and delivering required records to Alexandria Pro-Fab within forty-eight hours from time of request by Alexandria Pro-Fab.

Unless otherwise specified by Alexandria Pro-Fab NPD, the Supplier shall maintain all records that provide objective evidence of compliance to Alexandria Pro-Fab contract requirements for a minimum of five (5) years after the last delivery of products and/or services on the contract. Prior to discarding, transferring to another organization, or destruction of such records, the Supplier shall notify the Alexandria Pro-Fab Buyer in writing and give Alexandria Pro-Fab the opportunity to gain possession of the records. These requirements are applicable to records generated by Supplier's sub-tier sources.

9 • CONTINUAL IMPROVEMENT

Suppliers should define a process for continual improvement. Recommend ISO 9004, including Annex B. A copy of the Supplier's continual improvement program shall be furnished to Alexandria Pro-Fab upon request.

9.1 PROBLEM SOLVING PROCESS

Suppliers should use a closed-loop corrective action process whenever a problem is encountered internally or upon notification from Alexandria Pro-Fab. For example:

- i. Describe the Problem

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- State what the problem “Is,” and “Is Not” with respect to what, where, when, who, how, and how many. Use quantitative terms.
- ii. Use a Team Approach
 - Consult and coordinate with relevant stakeholders.
- iii. Apply Containment Immediately
 - Contain any suspect product to protect Alexandria Pro-Fab and its customers.
- iv. Root Cause Analysis Identify
 - potential causes, analyze causes for failure mode, validate root cause(s), and identify solutions.
- v. Implement Permanent Corrective Action
 - Implement solution. Update applicable FMEA, control plan and work instructions.
- vi. Verify Effectiveness of Corrective Action
 - Use check sheets, auditing, sampling, and/or control plans to monitor process performance for effectiveness and sustained improvement.
- vii. Implement Preventive Action
 - Implement changes to prevent the same type of error from occurring in similar products/processes. Update applicable documents.
- viii. Management Support
 - Review, approve, and support. Provide resources and team recognition.

For additional guidance on problem solving methods, tools, training, and related references, refer to AIAG document CQI-10.

9.2 CORRECTIVE ACTION REPORT

Alexandria Pro-Fab may issue a request for a Corrective Action Report (CAR) to the Supplier when nonconforming material, components, or assemblies are found. When a formal reply is requested (whether hard copy or electronic media), the Supplier should use Corrective Action Report, or other convenient media of equivalent content.

When documenting the root cause, the Supplier shall include the underlying reasons:

- A. why the specific nonconforming condition or incident occurred,
- B. why it was not detected by the Suppliers quality controls, and
- C. why the related process, from a systemic viewpoint, allowed the nonconformance (and potentially others like it) to occur.

The Supplier should apply the following criteria to determine whether the underlying root cause has been identified:

- I. It initiates and causes the event you are seeking to explain.
- II. It is directly controllable.
- III. The elimination of that root cause will result in the elimination or reduction of the problem.

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Statements from the Supplier indicating that the corrective action is to alert or retrain the operator, and/or increase inspection, alone, are NOT acceptable corrective actions. These kinds of actions would be considered insufficient and not address the real underlying root cause(s) of why the Supplier's policy, instructions, process, procedure, and/or system allowed the problem to develop and occur and not be detected by quality controls.

Unless otherwise requested by Alexandria Pro-Fab when notified, the Supplier shall respond to a request for corrective action as follows:

Required Action Timeline (from initial notification by Alexandria Pro-Fab)

The Supplier shall promptly acknowledge receipt of notification and communicate to Alexandria Pro-Fab the immediate containment actions to be taken.

Within 24 hours

The Supplier shall provide an update of the containment plan to protect Alexandria Pro-Fab during the interim period. This update must include:

- Confirmation that the Supplier has identified all suspect product in process, in stock, in transit, and potentially at any Alexandria Pro-Fab site by lot number, Alexandria Pro-Fab contract number, and quantity.
- Additional specific containment actions needed to be taken by the Supplier and/or Alexandria Pro-Fab.

Within 72 hours

The Supplier must submit the completed Corrective Action Report indicating the permanent actions taken, or to be taken, to prevent recurrence of the same problem, to prevent the occurrence of similar problems and the applicable effectivity dates.

Within 10 business days

10 • DOCK-TO-STOCK PROGRAM

Alexandria Pro-Fab expects to receive products from Suppliers with zero defects allowing products to move directly from dock to stock, or to the point of use, without incurring additional costs associated with receiving inspection. Alexandria Pro-Fab may charge Suppliers for costs to sort, evaluate, and return products that do not meet requirements. Where allowed, Alexandria Pro-Fab's respective divisions will administer a Dock-to-Stock program on the basis of individual part numbers, product families, or overall Supplier performance. Where implemented, Dock-to-Stock applies to material and components released for production that ship to a particular Alexandria Pro-Fab location. However, Alexandria Pro-Fab reserves the right to inspect any product upon receipt or at any other time, due to criticality or any other factor, or cancel the program at any time. Dock-to-Stock typically does not include pre-released parts, samples, prototypes, pilot fabrication runs, first articles for new tooling or processes, and other low-volume applications.

10.1 DOCK-TO-STOCK REQUIREMENTS

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To be considered for Dock-to-Stock, the product must meet the following requirements:

- Must be from an approved Alexandria Pro-Fab Supplier
- The Supplier must meet requirements for a certain number of consecutive lots of the same part number being accepted by the same Alexandria Pro-Fab location
- The Supplier must not be rated as having unacceptable product quality performance
- No open and delinquent corrective action requests for the part number (or products from the same family)

10.2 DOCK-TO-STOCK SUSPENSION

The Supplier's Dock-to-Stock privilege can be suspended when any of the following conditions occur:

- A part number is detected as non-conforming
- The Alexandria Pro-Fab Buyer is made aware that the Supplier has a major non-conformance related to a second or third-party quality management system audit
- When results or audit evidence show the Supplier is not following their approved Control Plan or related work instructions

Generally, the suspension process is as follows:

- A. Alexandria Pro-Fab Buyer will notify the Supplier that their Dock-to-Stock privilege has been suspended.
- B. Alexandria Pro-Fab will issue a request for corrective action to the Supplier.
- C. The suspension should end when the Supplier satisfies the conditions outlined in the section above.

If the Supplier is put on suspension repeatedly, the Alexandria Pro-Fab Buyer may place the Supplier on new business hold and/or divert the business to an alternate Supplier.

11 • SUPPLIER PERFORMANCE

Alexandria Pro-Fab's evaluation system uses a number of factors, such as Quality, Delivery, and Process Continuous Improvement (PCI) to develop an overall Supplier performance rating. This rating serves as an objective measure to determine whether Alexandria Pro-Fab expectations are being met. Alexandria Pro-Fab's delivery mechanism for the Supplier performance rating is "Supplier Metrics."

Alexandria Pro-Fab Supplier Metrics is the primary performance rating used by Alexandria Pro-Fab.

At Alexandria Pro-Fab's discretion, the Alexandria Pro-Fab Buyer may determine that to address the Suppliers performance deficiencies, a meeting with Supplier's management is necessary and a Supplier documented corrective action and improvement plan is required.

Supplier Quality Requirements Manual

11.1 PERFORMANCE MEASURES

QUALITY

This metric defines the Rejected Parts Per Million (RPPM) shipped using the following formula. The definition of “rejected parts” is the total number of parts returned to the Supplier for any valid quality reason (including those caused by shipping and administrative errors):

Number of Parts Rejected

RPPM =

Number of Parts Received

x 1,000,000

Based on Alexandria Pro-Fab’s current expectations, the following table describes the resulting actions for varying RPPM performance levels:

Premiere Meets requirement set by Alexandria Pro-Fab

Preferred Satisfactory; no action required

Marginal Systemic corrective action may be required

Unacceptable Systemic corrective action is required and may require Supplier to meet with Alexandria Pro-Fab management representatives.

DELIVERY

This metric defines the delivery performance rating using the following formula:

“On time” is based on the contract date, or *kanban* signal

Number of Parts Received On Time Delivery = Number of Parts Received x 100

Based on Alexandria Pro-Fab’s current expectations, the following table describes the resulting actions for varying delivery performance levels:

Approved; Meets requirement set by Alexandria Pro-Fab

Conditional; Marginal systemic corrective action may be required

Disapproved; Remove from approved supplier list

Not Longer Used; Deactivated

11.2 SUPPLIER DEVELOPMENT PROGRAM

Alexandria Pro-Fab’s Supplier Development Program is designed to improve the Supplier operations in all aspects of their business, which includes new product development, engineering, quality, communication, performance, delivery, and cost through the implementation of a Lean Enterprise Program in conjunction with appropriate quality tools. For further information, you may contact your Alexandria Pro-Fab Buyer.

APPLICABLE DOCUMENTS

Supplier Quality Requirements Manual

The following documents are referenced within this manual and may be applicable to the extent specified by Alexandria Pro-Fab in the contract and applicable reference documents. Copies may be obtained from the sources shown. It is the Suppliers responsibility to obtain applicable documents and to ensure that current revisions are maintained and available to its operations, as required.

Document Title Available From

ISO 9001 Quality Management System Requirements

www.ansi.org www.iso.ch

AS/EN/JISQ9100 Quality Management System Requirements

www.sae.org www.asd-stan.org

AS9003 Inspection and Test Quality System

www.sae.org

ISO/TS 16949 Quality Management System Requirements

www.ansi.org www.aiag.org

ISO 13485 Quality Management System Requirements

www.ansi.org www.iso.ch

APQP Advanced Product Quality Planning & Control Plan Manual

www.ansi.org www.aiag.org

PPAP Production Part Approval Process Manual

www.ansi.org www.aiag.org

SPC Statistical Process Control Manual

www.ansi.org www.aiag.org

MSA Measurement System Analysis Manual

www.ansi.org www.aiag.org

FMEA Potential Failure Mode & Effects Analysis Manual

www.ansi.org www.aiag.org

CQI-10 Effective Problem Solving Guideline

www.ansi.org www.aiag.org

ISO 9004 Quality Management Systems - Guidelines for Performance Improvements

www.ansi.org www.iso.ch

• FORMS AND EXHIBITS

Many of the required forms are available in the respective AIAG core tools manuals and other reference documents. Certain unique Alexandria Pro-Fab forms are exhibited herein*.

Electronic versions of these and other Alexandria Pro-Fab forms (including those considered equivalent to the AIAG forms) supplier may be obtained from your Alexandria Pro-Fab Buyer.

Form Number Form Title Available From

CFG-1001 Part Submission Warrant See PPAP Manual

THE-1001 Part Submission Warrant See PPAP Manual

CFG-1003 PPAP-Dimensional Results See PPAP Manual

Supplier Quality Requirements Manual

CFG-1004 PPAP-Material Test Results See PPAP Manual

CFG-1005 PPAP-Performance Test Results See PPAP Manual

ALEXANDRIA PRO-FAB-CAR Corrective Action Report * Alexandria Pro-Fab Buyer

ALEXANDRIA PRO-FAB-CPLAN Control Plan * Alexandria Pro-Fab Buyer

ALEXANDRIA PRO-FAB-FAI First Article Inspection Report * Alexandria Pro-Fab Buyer

ALEXANDRIA PRO-FAB-FMEA Failure Mode and Effects Analysis Alexandria Pro-Fab Buyer

ALEXANDRIA PRO-FAB-PPCN Product/Process Change Notification * Alexandria Pro-Fab Buyer

ALEXANDRIA PRO-FAB-SDR Supplier Deviation Request * Alexandria Pro-Fab Buyer

ALEXANDRIA PRO-FAB-SQA Supplier Quality Assessment Alexandria Pro-Fab Buyer

ALEXANDRIA PRO-FAB-ISO 9001 ISO 9001 Quality Management System Audit Alexandria Pro-Fab Buyer