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Marvin Engineering / Marvin Land Systems

PRODUCT ASSURANCE PROVISIONS

Applicable to Orders referencing Material Code: MG117

INSPECTION OF SUPPLIES (PAP 1)

The Supplier and their Sub-Tier Suppliers shall establish and maintain an inspection system acceptable to Marvin Engineering Company (MEC) and/or Marvin Land Systems (MLS). Government contracts for standard inspection require FAR 52.246-2 and when applicable PAP 2 and/or 3 is required for Higher-Level Contract Quality Requirement of inspection in accordance with FAR 52.246-11. The inspection system shall be appropriate to the size and nature of its operation, but of sufficient scope to assure that supplies delivered under this order will comply with all the applicable drawings, specifications, and other purchase order requirements. Supplier shall respond to all Corrective Action Requests.

QUALITY PROGRAM (PAP 2)

The Supplier shall have a Quality System certified to ISO 9001 Quality Program Requirements.

QUALITY SYSTEM (PAP 3)

The Supplier shall have a Quality System certified to AS9100 Quality Program Requirements.

a. Upon request, suppliers shall permit MEC access to all data in OASIS databases including registration documentation, certification, audit reports, findings, corrective actions, etc. MEC reserves the right to input significant and/or frequent escape data and major audit findings regarding suppliers into the relevant OASIS data base records for those Suppliers.
b. The supplier is responsible to provide MEC Purchasing with written notification of any changes in the certification / registration / accreditation or major audit findings within two (2) business days of receiving notification of the change or finding. Examples of changes in registration include new certification, suspension, or expiration.

CALIBRATION SYSTEM (PAP 4)

The suppler and their sub-tier suppliers shall be responsible for providing and ascertaining the correctness of tools, gages, and test equipment. The calibration system shall comply with ANSI/NCSLZ540-3-2006 or ISO 10012. Records of calibration shall be available for review upon request.

RIGHT OF ACCESS (PAP 6)

During the performance of this order, your Quality Control or Inspection and Manufacturing processes are subject to review, verification, and analysis by an authorized MEC or MLS, Government and/or customer representative(s).

CERTIFIED PROCESSES (PAP 15)

Suppliers and their sub-tier suppliers performing processes and/or testing shall provide certifications with each shipment. Certifications shall include:

1) Supplier name
2) P.O. No.
3) Part No.
4) Part Revision
5) Quantity
6) Indication of the process or test being performed and revision
7) Indication of heat and/or MEC or MLS lot no.

In addition, NDI/NDT certifications shall include:

7a) Number of items inspected/accepted/rejected
7b) list of acceptance criteria
7c) identification by name or stamp the individual performing the accept/reject process and level of proficiency.

Note: When raw material is supplied by MEC or MLS, heat lot data information will be forwarded to supplier via MEC memo shipper accompanying the raw material shipment or, in the case of drop shipments, by e-mail from the MEC Receiving Department representative or by the respective buyer.

CERTIFICATION (COC) (PAP 16)

Certificate of Conformance or Certificate of Compliance, as applicable, must accompany each shipment of materials. Certificates must include:

1) Supplier name,
2) MEC or MLS Purchase Order (PO)
3) Part Number annotated on PO (note: for suppliers who have a COTS item number cross-referenced with an MEC or MLS Part Number, both the COTS number and the MEC/MLS Part Number must be documented on all Certifications)
4) Part Revision
5) Quantity
6) Indication of heat and/or lot no. Certifications must contain the signature and title of the authorized Supplier representative responsible for certifications. The certification must contain a statement that the supplier has on file and available for examination, evidence of conformance to the applicable specifications.
   MEC or MLS Quality Assurance reserves the right to request data supporting the Certifications. When requested, Supplier shall forward this data to MEC or MLS within five (5) working days.

Note: When raw material is supplied by MEC or MLS, lot data information will be forwarded to supplier via MEC memo shipper accompanying the raw material shipment or, in the case of drop shipments, by e-mail from the MEC Receiving Department representative or by the respective buyer.

TEST REPORTS (PAP 18)

Supplier and their sub-tier suppliers shall furnish performance test data for tests conducted on, and identifiable to the article(s) submitted (by serial number), when applicable. Performance test reports

must contain the signature and title of the person (or traceable inspector stamp) responsible for the tests. Particular emphasis shall be given to characteristics that cannot be verified at MEC or MLS facility. Traceability to MEC or MLS purchase order is required.

NOTE: Unless otherwise specified in the body of the Purchase Order, this requirement is not applicable to "Standard Catalog Hardware" (i.e., part or material that conforms to an established industry or national authority published specification, having all characteristics identified by text description, national/military standard drawing or catalog item).

RAW MATERIAL CERTIFICATION (PAP 19)

Supplier and their sub-tier suppliers shall include a copy of the Raw Material Original Mill Certification bearing the company name, signature and title of an authorized representative of the company. Material must meet any contractual requirements as stated in the Purchase Order (PO), and any applicable DFARs. Traceability to MEC or MLS purchase order is required. In addition:

For Aluminum: The Raw Material Certification shall include heat or lot number, type, grade, and applicable specification of the raw material(s) used to manufacture the purchased item.

For Steel and Specialty Metals: The Raw Material Original Mill Certification shall include the chemical analysis and physical test reports and any required secondary independent test laboratory certification(s) with each shipment. Reports must include heat or lot number, the applicable specification of the raw material, and actual results of the test.

All raw materials, i.e. forgings, castings, extrusions, bar and/or plate stock, etc., must be physically identified with the heat lot number. Rubber stamping is acceptable. If a product/parts are furnished in multiple heat lots, supplier must always keep segregated, to avoid loss of traceability.

NONCONFORMING MATERIAL (NCM) CONTROL) (PAP 21)

Nonconforming material must be identified and documented, segregated or bonded, pending disposition when found, to prevent its unintended release or use, and evaluated to determine the actions necessary to contain its effect on other processes or products.

Disposition Authority

Suppliers do not have Material Review Board (MRB) authority for Marvin Engineering/Marvin Land or any of its customer's designed items unless specifically authorized in writing.

The supplier MRB shall not perform any disposition on any nonconformance to MEC, MLS or customer requirements that affect form, fit, function, weight, interchangeability, maintainability, reliability, unique key characteristics or safety. These nonconformances shall be submitted to MEC or MLS on the specified nonconforming material control document. Suppliers have no authority to proceed with processing as it pertains to the nonconformance until full written and approved final disposition has been given addressing the nonconforming issue.

The supplier's disposition authority of nonconformances is limited to rework to specification, return to supplier and scrap. These terms are defined as follows:

1) **Rework** - Restore material to specification compliance in accordance with required process(s) and addressed by governing process specification(s). Parts subject to subsequent processing not

authorized by specification shall be submitted to MEC/MLS Material Review Board (MRB) for disposition. Specific rework instructions shall be provided with Rework dispositions.

2) **Return To Supplier** - Return of subcontractor product found to be discrepant for subsequent rework or replacement.

3) **Scrap** - Permanent removal from production and destruction of product found to be unfit for use. Scrapped product shall be segregated or bonded, and controlled until destroyed.

Marking Requirements for Rejections
The supplier shall mark discrepant material with the nonconformance document number for tracking purposes.

Acceptance will depend upon verification of discrepancy and final approval at MEC or MLS.

DOCUMENTATION CHANGE CONTROL (PAP 22)
Supplier and their sub-tier suppliers shall maintain adequate control to assure drawing revision that are incorporated through purchase order changes are implemented in a timely manner. Items that are affected shall be identified, segregated, and packed separately at established points. Further, the supplier shall notify and obtain approval from MEC or MLS for proposed changes in the design or processes of the products.

FIRST ARTICLE INSPECTION (PAP 24)
On the first initial production run/part, First Article Inspection (FAI) shall be performed in accordance with the requirements of AS9102 ("Aerospace First Article Inspection Requirement"), per the revision level established at time of purchase order issuance. First Article Inspection shall be performed prior to product acceptance and/or shipment to MEC or MLS. A new/ Delta First Article Inspection shall be required if:

- A change in the design characteristics affecting fit, form, or function of the part.
- A change in manufacturing source(s), process(es), inspection method(s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function.
- A change in numerical control program or translation to another media that can potentially affect fit, form, or function.
- A natural or man-made event, which may adversely affect the manufacturing process.
- An implementation of corrective action required to complete a previous FAI, as described in 4.4. of AS9102 ("Aerospace First Article Inspection Requirement").
- A lapse in production for two years shall require an update for any characteristics that may be impacted by the inactivity. This lapse is from the completion of last production operation to the actual restart of production.

Please note: **Supplier shall not commence production of units beyond the first article when MEC supplies material unless written authorization is given by MEC. All hardware produced beyond the first production lot without MEC approval shall be at the sole risk of the Supplier.**

The following Items shall not require FAI, unless otherwise directed by Buyer:

- Standard hardware and standard electronic parts (AN, MS standard hardware, JSF, etc.);
- Commercial Off-the-Shelf ("COTS") Items;

- Metallic (plate, bar, rod, etc.) and non-metallic (paints, sealants, adhesives, etc.) raw materials;
- Items that have been returned by Buyer for repair.

The supplier's AS9102 report shall provide, as a minimum: Purchase Order (PO) number, part number, revision level, part name, Supplier's name, drawing requirements (including tolerances**)** & Heat Lot Number, method used to obtain results and actual results of each measurement. Part(s) used for the inspection shall be identified when shipped to MEC or MLS as "first article inspection sample". All required and optional fields on FAI Report Forms shall be completed. In addition, any FAI report form generated shall not contain open fields. To ensure each field of the FAI has been reviewed, the supplier shall mark all Non Applicable fields as "N/A" and shall give a brief explanation for each. First article data, in accordance with the requirements of AS9102 first article inspection report form, shall accompany the first shipment to be delivered and an additional copy sent to MEC or MLS, Attention: Quality Control Receiving Inspection Department, 261 W. Beach Avenue, Inglewood, CA 90302. If the part requires functional testing, in addition to the actual test results, the supplier shall furnish a diagram of the test set-up, the test equipment that was used, the tolerances of the test equipment, and the calibration date of the test equipment used. AS9102 forms can be found on the Society of Automotive Engineers website located at the following address: http://www.sae.org/aaqg/publications. If the above link does not open, copy and paste the address to your web-browser window.

HARDNESS TEST CERTIFICATION (PAP 27)
Supplier and their sub-tier suppliers shall submit results of hardness test performed on material furnished. Hardness data must be kept in appropriate scale, provide case depth data if required, and bear the signature and title of an authorized representative of the organization performing the test. Traceability to MEC or MLS purchase order is required.

CONDUCTIVITY TEST CERTIFICATION (PAP 27.1)
Supplier and their sub-tier suppliers shall submit results of Conductivity Test results when required by specification for aluminum alloys.

QUALIFIED PRODUCTS LIST (QPL) (PAP 30)
Suppliers and their sub-tier suppliers of products such as electronic components, primers, enamels, oil, welding rod, switches, regulators, etc., direct to MEC or MLS are responsible to furnish these products as listed on the applicable Qualified Products List (QPL) or evidence that they have been approved for inclusion on such list. They must substantiate the qualification by listing the product, the name of manufacturer, the QPL number, revision and date of applicable QPL on the certification for components or sub-assemblies. If there is a shelf life for the product, the expiration date must be noted on the certification and/or the product. Supplier and their sub-tier suppliers accomplishing final surface finish operations such as painting or installation of components or sub-assemblies using QPL products as outlined above, must substantiate the qualification as described above.

PPP&M REQUIREMENTS (PAP 31)
Supplier and their sub-tier suppliers shall deliver purchased items meeting the requirements of best commercial practices. In addition, all parts shall be provided with adequate protection from damage

including corrosion and/or contamination, as applicable. Bare metal-to-metal contact is not allowed except for Commercial Off-the-Shelf (COTS) and "Bag and Tag" items.

CURRENT REVISION (PAP 43)
Unless otherwise stated, reference specifications and the item supplied shall be certified to the current revision at the time or newer. The current specification revision shall be located at the following webpage: http://marvingroup.com/suppliers/. In the event that the supplier possesses a later revision than what is specified on the webpage, the supplier shall contact the MEC Data Management representative.

FOREIGN OBJECT DEBRIS (PAP 45)
General workmanship practices and standard term for the prevention of FOD to products apply.

a. Foreign Object Debris (FOD): A substance, debris or article alien to the part/item(s), which would potentially cause damage
b. Foreign Object Damage (FOD): Any damage attributed to a foreign object that can be expressed in physical or economic terms that may or may not degrade the product's required safety and/or performance characteristics

SUPPLIERS AND THEIR SUB-TIER SUPPLIERS (PAP 47)
Suppliers must flow-down MEC or MLS Product Assurance Provisions (PAP Clauses) to their Sub-Tier Suppliers the applicable requirements listed in this purchase order including key characteristics and special processes when applicable.

OZONE DEPLETING CHEMICALS (PAP 49)
Class 1ozone depleting chemicals are not to be used nor incorporated in any items to be delivered under this order. This prohibition supersedes all specification requirements but does not alleviate any production requirements. Substitute chemicals must be submitted for approval unless they are authorized by the specification requirements.

RECORD RETENTION (PAP 52)
MEC or MLS Suppliers and their Sub-tier Suppliers shall retain and maintain Quality Records associated with MEC or MLS product from deterioration for a minimum of seven (7) years unless otherwise specified by purchase order or customer. No Quality Record associated with MEC or MLS may be stored, either temporarily or permanently, in an area where the potential for damage, deterioration, or loss exists. Quality Records associated with MEC or MLS maintained for this period may be disposed of only after obtaining authorization from MEC or MLS Quality Assurance in writing. Prior to disposal, records shall be defaced to illegibility.

DOMESTIC SPECIALTY METALS (PAP 53)
Material identified on this purchase order shall be melted in the United States or a qualifying country. Specialty metals are defined in the Defense Federal acquisition regulation Supplement Clauses 252.225-7008, Preference for Domestic Specialty Metals and 252.225-7009; Restriction on Acquisition of Certain Articles Containing Specialty Metals. Qualifying countries are listed in 252.225-7002. These DFAR clauses may be found at the following webpage:

http://www.acq.osd.mil/dpap/dars/dfars/html/current/252225.htm. Exceptions must have written approval by MEC or MLS as applicable, and their customer.

INSPECTION SAMPLING PLAN (PAP 54)
Sample Inspection reports shall be submitted with the certification package (Cert Package) in accordance with AS9102 latest revision format. Unless otherwise specified Inspections shall be conducted utilizing ANSI Z1.4 General Inspection Level II at an Acceptance Quality Level (AQL) of 1.0 in accordance with Sampling Procedure and Tables for Inspection by Attributes, normal level II. Lots acceptance shall be at zero (0), rejections shall be at one (1). All features as defined below shall be inspected 100% on all lots:

a. Any feature identified with a total tolerance less than .001 inches;
b. Any Surface finishes having a 16 RMS value or less;
c. Any geometric feature control requirement with a total tolerance range of .002 inches or less;
d. Angular tolerances with a total range less than 1 degree;
e. Threads specified to class 3 or greater;
f. Any characteristic deemed as critical by the engineering support activity (ESA);
g. All CSI, CAI or KC features identified on the released engineering drawing or purchase order.

NOTE: The features defined in this clause are also applicable to PAP 67 (Data Requirements for Turnkey parts/Machining POs) for features identified in a-g.

SUPPLIER PROCESS CHANGE CONTROL (PAP 59)
Supplier manufacturing process changes shall be reported to MEC or MLS for evaluation and disposition. This requirement does not apply to commercial off-the- shelf (COTS) items. The supplier understands that a First Article or Inspection to the extent necessitated by the change may be imposed to validate the new process even when there is no change to configuration, form, fit, or function. A manufacturing process change includes but is not limited to:

a. moving the location of manufacture within a production facility or to a new facility;
b. changing manufacture or process sources or methodology, or
c. changing machinery, equipment, tooling, or programming (not inclusive of replacement of same item).

A documented process shall be in place to review, identify and submit a request for change to the MEC or MLS Procurement Representative. Changes shall be submitted to MEC or MLS 30-days prior to planned implementation.

EXECUTIVE ORDER 13496 (PAP 60)
Notice Of Employee Rights Under Federal Labor Laws
(http://www.dol.gov/olms/regs/compliance/EO13496.htm)

EXECUTIVE ORDER 13465 (PAP 60.1)
Amending Executive Order 12989, as Amended (https://www.gpo.gov/fdsys/pkg/FR-2008-06-11/pdf/08-1348.pdf)

COUNTERFEIT PARTS (DFAR 252.246-7007) (PAP 62)

Supplier shall develop and implement a counterfeit parts control plan that documents its processes for risk mitigation, disposition and reporting of counterfeit parts. Reference guide SAE AS5553 *Counterfeit Electronic Parts, Avoidance, Detection, Mitigation and Disposition* and/or SAE AS6174 *Counterfeit Materiel, Assuring Acquisition of Authentic and Conforming Materiel*.

All electrical, electronic, electro-mechanical and electro- optical component parts delivered and/or used in the manufacture of deliverable products shall be from the Original Component Manufacturer (OCM) / Original Equipment Manufacturer (OEM) or franchised distributors or Authorized Aftermarket Manufacturer (AAM).

If counterfeit parts are furnished under this purchase agreement, such items shall be impounded. The Supplier or when applicable, their Sub-Tier Supplier shall promptly replace such items with genuine parts conforming to the requirements of this Contract at no increase in price, cost or fee to MEC or MLS. If the delivery of counterfeit parts is the result of Supplier's intentional or fraudulent acts, Supplier shall also be liable for the cost of impoundment and removal of counterfeit parts. MEC or MLS may turn such items over to US Governmental authorities (Office of Inspector General, Defense Criminal Investigative Service, Federal Bureau of Investigation, etc.) for investigation and reserves the right to withhold payment for the suspect items pending the results of the investigation.

PURCHASE ORDER LOT INCREASES (PAP 64)

When raw material or parts are provided to a supplier, any excess material or parts shall be returned to MEC or MLS If the raw material yields a higher quantity than specified on the purchase order, the MEC Purchasing Agent must approve the quantity adjustment prior to work being performed. MEC or MLS will not accept quantity increases from special processing operations such as heat treat, Penetrant inspection, anodize, plating, chem film, Pyrometry, prime/paint, radiographic inspection, and Passivate. All MEC or MLS material or parts must be traceable to MEC's or MLS's purchase order and (or) heat lot number.

INTERNATIONAL TRAFFIC IN ARMS REGULATIONS (ITAR) (PAP 65)

Technical Data (includes drawings, specifications, models, software, other documentation)Supplier acknowledges that MEC or MLS may provide technical data subject to Export Control laws and any such Technical Data will be indicated as "ITAR- controlled." This technical data (as well as components) may not be disclosed to any foreign persons or foreign commercial entities, including employees, consultants, subcontractors, vendors or suppliers. The technical data will only be utilized for the manufacture of articles required by the purchase order. The supplier will convey the same requirements to their sub-tier suppliers. The supplier also agrees to destroy or return all such technical data upon completion of the purchase order.

MEC SUPPLIED TOOLING (PAP 66)

When MEC or MLS furnishes inspection aids, gauges and tooling fixtures which fall under the Quality Assurance calibration requirements of ISO 10012, then it will be mandatory for the suppliers to maintain the condition of the loaned gauges and tooling. Suppliers will be notified if a gauge is due for calibration and request for return to MEC or MLS. Suppliers to be aware, that no product manufactured with an un-calibrated gauge and/or tool will be accepted and may be suspect. Suppliers to be aware, that they will

have the sole responsibility of maintaining this loaned tooling. Suppliers will be held accountable for any scrap or damaged tooling and will be debited accordingly. It will be mandatory upon receipt of final shipment of said contract, that supplier returns loaned tooling to MEC or MLS.

DATA REQUIREMENTS FOR TURNKEY PARTS/ MACHINING POs (PAP 67)

The following data shall be included with turnkey product and machining Purchase Orders (POs), at a minimum, when returned to MEC or MLS. MEC or MLS defines turnkey as a part that is built complete (including all required machining and processing) and compliant to drawing(s), drawing note(s), and applicable specification(s). For suppliers furnishing castings and forgings, the supplier shall provide inspection records for all lower level details:

First Article Inspection Report (FAIR):

- A completed AS9102 data package. Include with FAIR, but not limited to - Production Order/Job Traveler, Material Certifications with Material Heat Lot Number (one heat lot number per job traveler/production order), Processing Certifications.
- See PAP 24 for more information on First Article Inspection (FAI).
- Provide inspection records for all lower level details (i.e. castings, forgings):
- 100% recorded actuals for drawings and or models that identify Critical Dimensions/ Characteristics or Key Characteristics (where applicable) are flagged on the face of the drawings.

Production Run Parts:

- Material Certifications with Material Heat Lot Number (one heat lot number per job traveler/ production order), and Processing Certifications.
- 100% recording of actuals for Critical Dimensions/ Characteristics or Key Characteristics (where applicable).
- Refer to PAP 54 (Inspection Sampling Plan) for additional features to be inspected 100% on all lots.
- Recorded range from low to high.- Provide inspection records for all lower level details including castings and forgings.
- Use Acceptable Quality Level (AQL) of 1.0 (unless another sampling plan is specified by MEC or MLS) to define sample size of entire lot and perform 100% dimensional inspection of the sample size quantity. Segregate non-compliant parts, contact MEC or MLS for further direction. Reference PAP 21.
- Dimensional data shall be supplied in the same format as AS9102 Form 3.

RETURN MATERIAL AUTHORIZATION (RMA) REQUEST (PAP 72)

If a Return Material Authorization (RMA) is required by the supplier for return of discrepant product, the supplier will have 72 hours to respond with RMA number or statement of intention to dispute the QN (Quality Notification). If the supplier does not respond in writing within 72-hours, after verbal or written request is made by an MEC or MLS representative, discrepant items will be returned to supplier without RMA.

STANDARD WORKMANSHIP (PAP 73)

The supplier shall maintain written standards of workmanship directly applicable to the nature and level of work performed under the Purchase Order. A copy shall be supplied upon request. The buyer reserves the right to impose its own workmanship standard if he the seller's standards are considered unacceptable.

SUPPLIER DISCLOSURE OF DISCREPANT MATERIAL (PAP 77)

Supplier disclosing to MEC/MLS knowledge of a nonconformance created by the supplier shall complete the Supplier Disclosure of Discrepant Material F-826. Completing and submitting this form as directed, MEC/MLS shall make every effort to close-out the discrepancy without affecting your Supplier Scorecard. MEC/MLS Quality and Engineering departments shall review the Supplier Disclosure of Discrepant Material for the non-conformance submittal and provide disposition instructions.

Please note: The F-826 with instructions are accessible on the Marvin Group website at: http://www.marvingroup.com

The supplier cannot knowingly ship any discrepant material without an F-826 disposition and signed off by MEC/MLS Quality. A copy of the signed Supplier Disclosure of Discrepant Material (F-826) shall accompany the product for each affected shipment.

MONITOR EXTERNAL PROVIDERS PERFORMANCE (PAP 78)

Marvin Engineering/Marvin Land reserves the right to monitor our external provider's performance including:

a. Supplier Risk of product or service;
b. Quality of product or service delivered performance;
c. On-time delivery of product or service.

COMPETENCES, AWARENESS & COMMUNICATION (PAP 79)

External Providers shall ensure that its personnel and sub-tier supplier's personnel have the required competency and experience appropriate with the requirements necessary for the performance of this PO:

a. Their contribution to product or service conformity;
b. Their contribution to product safety;
c. The importance of ethical behavior.

PRODUCTION PROCESS VERIFICATION (PAP 80)

External Suppliers shall implement Production Process Verification activities to ensure the production process is able to produce products that meet requirements.

Marvin Engineering/Marvin Land reserves the right to review the evidence of the External Supplier's Production Process Verification which can include but not limited to risk assessments, capacity studies, capability studies, and control plans.