



TALLAHASSEE OPERATIONS QUALITY CLAUSES

NO. DEFINITION

01 Deleted

02 STATEMENT OF WORK (SOW): A SOW applies to this order. The SOW identifies requirements that may or may not be invoked in any other part of the purchase order. The identification number of the applicable SOW is denoted within the body of the purchase order.

03 FIRST ARTICLE INSPECTION (FAI): An FAI sample and report must be submitted, and approved by ESA Material Quality Assurance before the first shipment of material. The supplier shall perform FAI and record the variables data on the supplier's format, for each characteristic of the specification. Each characteristic on the drawing (dimension/note) should be identified with a unique number. This number should also appear on the applicable entry of the FAI report. The FAI must also include material certifications, stating that all materials comply with drawing and AVL requirements.

04 QUALIFICATION TESTING: Qualification testing is to be performed as a requirement of this contract. A Qualification Test Procedure (QTP) must be submitted for ESA review and approval before qualification testing. The supplier shall notify the ESA Buyer a minimum of five (5) working days before qualification tests for scheduling of test witness.

05 CHEMICAL/PHYSICAL TEST REPORTS: The supplier shall submit actual chemical/physical analysis to show that the supplied material complies with the applicable drawing/specification. In addition the analysis documentation shall address as a minimum:

- a. ESA Purchase Order number.
- b. Applicable test specification(s) and revision(s).

When this analysis requires non-destructive test (NDT) the report must list the test(s) performed. The report shall be dated and signed by a representative of the activity performing the analysis.

06 CERTIFICATE OF CONFORMANCE (C of C): A Certificate of Conformance shall accompany material supplied on this contract. This certificate shall address:

- a. Original Manufacturer's name.
- b. Drawing and/or specification number.
- c. Drawing and/or specification revision.
- d. Supplier's name (if other than manufacturer) & address.
- e. Lot number(s)/serial number(s)/date code(s) as applicable.
- f. ESA purchase order number.
- g. Quantity of parts shipped.
- h. Location of original inspection/test data, if other than Supplier.



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If the drawing notes specify material or process requirements, these must be referenced individually and explicitly in the C of C.

The certificate shall be signed and dated by an officer of the supplier, as evidenced by title.

07 TEST/INSPECTION DATA: Test/Inspection data demonstrating conformance to the lot acceptance requirements specified in the drawing/specification shall accompany each shipment of material. Unless otherwise specified, parametric data is not required provided attributes data specifies, as a minimum, all screening/tests/inspection performed and their methods, conditions, and applicable limits. Test/Inspection data must additionally exhibit the following information (if not specifically addressed by an attached Certification of Conformance):

- a. Manufacturer's company name.
- b. ESA purchase order number.
- c. ESA part number and revision.
- d. Quantity of parts tested.
- e. Date Code/Lot Number/Serial Numbers (as applicable).
- f. Date of test/inspection.
- g. Acceptance stamp or signature of authorized manufacturer representative.

08 SHELF LIFE CERTIFICATE: A Shelf Life Certificate shall accompany material supplied against this order. If a Certification of Conformance (C of C) is required by this order, the shelf life information may be placed on the C of C, in lieu of supplying two certificates. As a minimum, the certificate shall include:

- a. Part number and revision.
- b. Material specification.
- c. Original manufacturer's name.
- d. Date of manufacture.
- e. Guaranteed shelf life.

All material shall be received with 75% of specification life remaining, or within one year from the date of manufacture when the life exceeds 48 months.

09 QUALIFICATION CHANGES: Any major plant rearrangement, plant relocation, changes in materials, procedures, processes or design after initial qualification approval shall require that ESA be notified. ESA reserves the right to request a new First Article Inspection report be submitted.

10 Deleted

11 QUALITY ASSURANCE SYSTEM (9001): The supplier shall maintain a Quality Assurance System in accordance with ISO 9001.

12 Deleted

QMF-0902, Quality Clauses, Revision A, 10/17/2009

PROPRIETARY INFORMATION

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14 **RIGHT TO AUDIT:** ESA reserves the right to perform Quality audits to verify conformance to contractual requirements.

15 **APPROVED PROCESSES:** Certain processes invoked by this design are considered critical to the end use of the material being procured. A list of the controlled processes and suggested processors is provided with the purchase order. The seller may use another sub-contractor provided a First Article Inspection report is provided to ESA for approval. If the seller's sub-contractor is under-performing, ESA reserves the right to require that one of their suggested sources be contracted to perform those critical processes for work done under this contract.

16 **RIGHT TO SOURCE INSPECTION:** ESA reserves the right to invoke Source Inspection or Government Source Inspection at any time while this purchase order is in effect.

17 **ESA SOURCE INSPECTION:** Inspection by ESA personnel is required at the supplier's facility. The supplier shall contact the ESA Material Quality Assurance office upon receipt of this order to allow appropriate inspection planning. The supplier shall furnish, at no cost to ESA, the necessary facilities, equipment, documentation, and personnel in support of this activity. The supplier shall notify the ESA buyer a minimum of five (5) working days in advance of material being processed at any identified inspection point, which may include in-process or finished materials. Acceptance by the ESA representative does not relieve the contractor from responsibility. Final acceptance shall be ESA Receiving Inspection.

Note: ESA reserves the right to waive Source Inspection, on an individual lot/shipment basis, by written notification from the ESA Buyer.

18 **GOVERNMENT SOURCE INSPECTION (GSI):** Inspection by government personnel is required prior to shipment from the supplier's facility. Upon receipt of this order, promptly notify the government representative who normally services your facility so that appropriate inspection planning can be accomplished. Acceptance by the Government representative does not relieve the contractor from responsibility. Final acceptance shall be ESA Receiving Inspection.

19 **TEST SPECIMENS:** The material supplied on this order requires test specimens to be processed in the same manner as the other material.

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22 **QUALITY DOCUMENTS IDENTIFICATION:** When multiple cartons are utilized, the carton containing quality documentation shall be clearly identified.



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23 **ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESDS):** Devices supplied under this contract shall be handled, packaged, and marked in accordance with a system developed per the requirements of IPC-A-610.

24 **Deleted**

25 **ACCEPTANCE TEST PROCEDURE (ATP):** The contractor shall develop and submit an ATP for ESA review and approval no later than 45 days before acceptance testing. The ATP shall detail all testing/screening/inspection required for acceptance of the procured material. As a minimum, the ATP shall identify:

- a. Condition(s) and parameter(s) under which each test is conducted.
- b. Sequence of tests/inspections performed.
- c. Method of test/inspection performance.
- d. Tooling and equipment utilized during testing/inspection.
- e. Acceptance/Rejection criteria and confirming data sheets.

NOTE: A previously approved plan need not be resubmitted unless revisions/updates occur (a letter certifying "No Changes" from previously approved plan shall be submitted).

26 **Deleted**

27 **TERMINATION / LEAD PREPARATION:** A tinning process shall be used to remove 95% or more of gold plating from all surface mount components and those through-hole components with gold plating thickness exceeding 2.5 micrometers.

28 **SPECIAL PROCESSING / PACKAGING REQUIREMENTS:** Special packaging or processing of material supplied against this order is required in accordance with the drawing or purchase order.

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31 **Deleted**

32 **LOT IDENTIFICATION CODES:** There shall be no more than one date code in individual reels or tubes for material shipped for this order.



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33 **MATERIAL SAFETY DATA SHEET (MSDS):** A copy of the MSDS sheet in accordance with the Hazard Communication Standard CFR 29 part 1910.1200 must be provided with the first shipment of this order. If there are revisions to the MSDS prior to completion of this order, the updated version shall also be provided.

34 **MAXIMUM CARTON WEIGHT:** Individual cartons must not be more than 30 pounds.

35 **NO QUALITY CLAUSES APPLY TO THIS ORDER**

36 **TEST REQUIREMENT/DATA:** Harnesses/cables must be 100% tested for continuity and insulation resistance per drawing referenced specifications. In the absence of referenced specifications, MIL-HDBK-83575 (circuit resistance and insulation resistance) tests shall apply. Test data demonstrating conformance to this requirement is required to be sent with each shipment. Unless otherwise specified, parametric data is not required provided attributes data specifies, as a minimum, all tests performed and their methods, conditions and applicable limits. Test data must exhibit the following information:

- a. Manufacturer's name.
- b. ESA purchase order number.
- c. ESA part number and revision (if applicable).
- d. Quantity of parts tested.
- e. Date code/lot number/ serial number (if applicable).
- f. Date of test.
- g. Acceptance stamp or signature of authorized manufacturer representative.

37 **Deleted**

38 **Deleted**

39 **PRINTED WIRING BOARD PANEL X-OUT's:**

X-outs in panelized boards shall:

- Not exceed 1 per panel with panels of 4 or less boards.
- Not exceed 20% on panels with more than 4 boards.
- Not exceed 5% of the total number of boards in the lot.

X-out's shall be clearly marked on the component side of the board and packaged separately.

40 **FIRST ARTICLE (SAE AS9102A):**

A complete first article must be performed in accordance with SAE AS9102A. The first article must be recorded and submitted on the form specified in the specification.



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First article should also include material certifications for all materials specified on the drawing. Additionally, a balloon drawing should be included with unique numbers corresponding to the characteristics measured and recorded on form 2.

This document and forms are available from SAE International.

41 VARIATION MANAGEMENT OF KEY CHARACTERISTICS (SAE AS9103):

The supplier shall control key characteristics (as defined by ESA) in accordance with SAE AS9103. This document is available from SAE International.

42 IPC/WHMA-A-620 (Requirements and Acceptance for Cable and Wire Harness Assemblies):

Workmanship shall be in accordance with IPC/WHMA-A-620, Class 3

43 MATERIAL REVIEW AUTHORITY:

Material review authority shall not extend to "repair" or "use as is" for customer specified requirements without prior documented approval from ESA Quality Assurance. Supplier shall submit to the Buyer all requests for variance from the contract, PO, specification and drawing requirements.

44 TEST COUPONS:

PWB cross section and report shall be delivered with each shipment of material. This shall include evidence of compliance to the drawing and specification requirements.

45 SPECIAL PROCESSES:

Suppliers providing products that require special processes or suppliers performing special processes as a service (painting, chromate conversion, plating, heat treating) are required to be audited by ESA for these processes. In lieu of performing an audit ESA will accept National Aerospace Defense Contractors Accreditation Program (NADCAP) certification.

46 COUNTERFEIT ELECTRONIC PARTS PREVENTION:

Electronic components may be procured only from the Original Equipment Manufacturer (OEM) or their franchised distributor. The OEM or franchised distributor must provide a manufacturer's C of C that matches the date/lot code of the parts supplied. In the event that the components must be procured from a non franchised distributor (broker), the broker must provide a manufacturer's C of C that matches the date/lot code of the parts supplied, as well as a broker's C of C stating that the components have not been refurbished or reworked. Under no conditions are reworked, refurbished or used parts acceptable. When the supplier is unable to provide the manufacturer's C of C, additional testing/verification of the parts may be required.

47 QUALITY MANAGEMENT SYSTEM (AS9100):

QMF-0902, Quality Clauses, Revision A, 10/17/2009

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The seller shall comply with all elements of AS9100 (Aerospace model for Quality Assurance in Design, Development, Production, Installation and Servicing).

48 QUALITY MANAGEMENT SYSTEM (AS9120):

The seller shall comply with all elements of AS9120 (Quality Management Systems – Aerospace- Requirements for Stockist Distributors)

49 QUALITY MANAGEMENT SYSTEM (AS9003):

The seller shall comply with all elements of AS9003 (Aerospace – Inspection and Test Quality System).

50 TEST COVERAGE ANALYSIS:

The supplier shall provide a report detailing the coverage for the following processes (as applicable): ICT, Flying Probe, AOI and X-ray. This report will require a listing of all reference designators tested by each of the methods utilized.

51 AUTOMATIC OPTICAL INSPECTION (AOI):

All CCA's will be inspected on AOI equipment. Inspection should include: wrong/missing parts, polarity, solder joint quality.

52 X-RAY INSPECTION (CCA's):

CCA's shall be inspected using AXI (Automated X-ray) or X-ray for hidden solder joints (including BGA's) to ensure acceptable solder joints have been achieved.

53 RAW MATERIAL COUPON:

A raw material coupon of the material used for fabrication shall be delivered with each shipment. The coupon shall be identified with the finished component part number, date code, serial number (if applicable). The coupon must be of sufficient size for analysis.

54 PROCESS COUPON:

A coupon which has been processed (painted, plated, anodized...) in the same manner as the representative lot shall be delivered with each shipment. The coupon should be marked with the part number and date code of the parts represented by the coupon.

55 GUARANTEE OF ACCOUNTABILITY:

If suspect/counterfeit parts are furnished under this purchase order items shall be impounded by ESA. The seller shall promptly replace the items with items acceptable to ESA and the seller shall be liable for all expenses relating to the impoundment, removal and replacement. ESA may turn the parts over the appropriate authorities for investigation and reserves the right to withhold payment pending final resolution of the investigation.



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56 CONTAMINATION/FOREIGN OBJECT DEBRIS CONTROL:

The seller shall maintain a FOD prevention program which shall include the review of the design and manufacturing processes to identify and eliminate foreign object entrapment areas and potential path's through which foreign objects might migrate. The buyer reserves the right to perform audits at the supplier's facility to ensure program documentation and effectiveness.

57 RECORDS RETENTION:

Records and other objective evidence of inspection, testing and processing shall be retained by the supplier for a minimum of seven years after completion of the contract, unless otherwise specified. These records shall be identified and stored to enable them to be located and retrieved.

58 COMPONENTS MANUFACTURING DATES (Solderable components):

ESA-Tallahassee prefers components manufactured within the past 24 months. If components have date codes greater than 24 months, parts must be solderability tested (J-STD-002) prior to delivery to ESA-Tallahassee. The manufacturer's date code must appear on the seller's packing slip, certificate of compliance and test data (as applicable). Solderability tested parts should be bagged and tagged separate from the remainder of the lot and should accompany the reminder of the lot.

59 SOLDER PER J-STD-001:

All electrical assemblies shall be soldered per J-STD-001 (current revision). The seller shall flow this requirement to all sub-tier suppliers that perform soldering processes.

60 LITHIUM BATTERIES:

This material must be accompanied by the following: 1) Weight of the lithium battery
2) UN Number 3) Proper shipping name 4) Hazard Class

QCG GENERAL QUALITY REQUIREMENTS:

The following quality clauses apply to this order: 06, 09, 14, 16, 55, 57

Other quality clauses specified on the purchase order apply in addition to these listed.