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KCB SOLUTIONS QUALITY REQUIREMENTS FOR PURCHASED MATERIALS

GENERAL QUALITY REQUIREMENTS: THE GENERAL QUALITY REQUIREMENTS DESCRIBED BELOW (pages 1 thru 3) ALONG WITH THE PACKING AND PACKAGING REQUIREMENTS SHOWN ON THE KCB SOURCE CONTROL DRAWING ARE AN INTEGRAL AND REQUIRED PART OF **EVERY** KCB SOLUTIONS (Here forth mentioned as "**KCB**") PURCHASE ORDER.

SPECIFIC QUALITY REQUIREMENTS: DESCRIBED IN DETAIL WITHIN (pages 4 thru 6), THE SPECIFIC QUALITY REQUIREMENTS, WHEN CALLED FOR BY REFERENCE NUMBER ON THE PURCHASE ORDER IN THE "SPECIFIC QUALITY PROVISIONS" BLOCK, BECOME AN ESSENTIAL PART OF EACH KCB PURCHASE ORDER, IN ADDITION TO ALL OTHER REQUIREMENTS, CLAUSES, PROVISIONS, INSTRUCTIONS AND TERMS AND CONDITIONS OF PURCHASE, AND ARE A PART OF THE CONTRACT REQUIREMENTS THEREOF BY REFERENCE. MATERIALS RECEIVED WHICH DO NOT CONFORM TO ALL REQUIREMENTS WILL BE SUBJECT TO REJECTION, OR SUCH OTHER MEASURES AS MAY BE DEEMED NECESSARY BY KCB.

KCB GENERAL QUALITY REQUIREMENTS

QUALITY PROGRAM AND SYSTEM REQUIREMENTS

Either the supplier has AS9100, ISO9001 or another relevant certification. If this is not the case then the supplier is conditionally approved pending successful site audit.

Quality Surveys

KCB reserves the right to perform periodic surveys at the supplier facility or to request completion of a supplier survey by mail to the supplier to verify supplier capabilities and conformance to requirements. KCB shall provide notification prior to conducting on-site surveys.

Control of Sub-Tier Suppliers

Supplier is responsible for verifying that their sub-tier suppliers meet the full requirements of the KCB purchase order.

Inspection

Items supplied on all KCB purchase orders may be subject to test and/or inspection at KCB. Items that do not meet purchase order requirements, part specifications, and all requirements relevant to certifications, test data, quality systems and associated documentation will not be accepted.

Control of Nonconforming Material / Corrective Action

The supplier shall provide and maintain an effective system for the control of nonconforming material including procedures for its identification, segregation and disposition. Such nonconforming material shall be identified to prevent use, shipment or commingling with conforming supplies. For material manufactured to a KCB-specific drawing, the supplier is required to notify KCB if any product is reworked, if the manufacturing process is changed, or if the manufacturing location is changed. If the supplier is not authorized in writing by KCB to hold an authorized Materials Review on nonconforming material, the supplier shall request disposition from KCB. The supplier cannot conduct Materials Review action unless requested of and approved in writing by KCB. The supplier will return the preventive/corrective action report (PCAR) to KCB within 5 business days (for a critical PCAR), or the most achievable expedited timeframe. Part of the PCAR will include a plan for replacing the non-conforming material.

Notice of Previous Rejection

When the Seller submits material which has been previously rejected, the Seller's shipping document shall contain, or have attached to it, the statement "Resubmitted Lot", and shall reference the completed KCB PCAR document number.

Product and Process Control and Quality Record Retention

The supplier 's product, process control and quality records shall be retained at the supplier's location a minimum of ten years, unless a longer retention period is specified on the Purchase Order. The records shall be adequate to ascertain the quality level of production processes. This includes chemical and physical test results of raw material used in the manufacture of the item on the order. Quality records shall be provided upon request from KCB.

Material Revisions / Documentation

Material is to be supplied to the revision level required on the original purchase order. The supplier shall assure proper revision of the required drawing used by matching to the revision on the purchase order. The supplier shall only accept changes in the revision status of any drawings by means of a duly-executed purchase CHANGE order. The supplier shall not accept changes by verbal or E mail direction from anyone other than the KCB buyer who placed

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the original order.

Material or Process Changes

Written notification and approval from KCB is required for any proposed changes in design and/or processing methods that effect form, fit or function of material.

Supplier's Acceptance

Each shipment against a KCB Purchase Order shall include documentary evidence of product acceptance by the supplier's inspection organization. Objective evidence of inspection and acceptance shall be directly traceable to the supplier's responsible inspection organization. This evidence shall be one of the following:

- (A) A Certificate of Conformance containing a statement that material shipped conforms in all respects to applicable specifications and/or standards. The certificate must relate specifically to the part number being purchased and contain lot or batch number, and be dated and signed by of an officer of the supplier's company. Data supporting the C of C must be available to KCB for a period no less than 10 years from delivery date. or
- (B) A signed (or stamped) and dated indication of acceptance by supplier's inspection organization on the shipping document, or
- (C) A copy of supplier's inspection report indicating supplier's acceptance inspection findings for items under this order.

Restricted Materials

Metals

- Zinc (electroplated or galvanized) coatings
- Cadmium coatings (including olive drab, black, and yellow chromate cadmium finishes)
- Tin (>97% purity). Mitigation plans detailing how pure tin components will not be integrated into hardware will be audited. Procurement controls (i.e., purchase order notes, procurement drawing prohibitions), receiving inspection, tests, DPA, descriptions of equipment used, and sampling plans employed are expected.
- Mercury or compounds of mercury
- MIL-DTL-16878 wire (all types)
- Alloys with a stress corrosion threshold in any grain direction less than 25 ksi
- Aluminum alloys 5083-H32, 5083-H38, 5086-H34, 5086-H38, 5456-H32, and 5456-H38, where temperatures will be greater than 150 F.
- Beryllium Oxide
- Brazing of materials not listed in MIL-B-7883
- Radioactive materials
- Lockwashers and similar locking approaches shall not be used. Lock washers include star washers, split washers, wave washers, or any other washer that use a spring force to generate preload or have the potential to generate FOD.
- Selenium, except internal to hermetically sealed devices or used as an alloying metal
- Graphite as a filler for lubricants and greases
- All honeycomb, metallic or nonmetallic, not perforated or otherwise vented
- Silver-plated copper wire with less than 40 micro inches of silver plating
- Gold plating over silver without a nickel-plated barrier coating
- Solder flux Type RA (M1 per J-STD-001) or water-soluble flux containing organic acid
- The use of hydrochloric acid, cadmium, chlorinated cutting oils and solvents, halogenated solvents, methyl alcohol, mercury, and silver in contact with titanium alloys
- Separable flared fittings
- Magnesium - The use of magnesium alloys shall be minimized. Magnesium alloys shall not be used for primary structural applications. The use of magnesium alloys is restricted to secondary structural applications where distinct advantages can be shown and adequate corrosion protection can be attained. The use of magnesium alloys for such applications as box enclosures shall also consider the protection against corrosion where grounding requirements dictate metal-to-metal contact.

Nonmetals

- Silicone sealants, adhesives, or coatings that evolve acetic acid during cure. Non-corrosive Room Temperature Vulcanizing (RTV) silicone compounds may be used if they meet the requirements of MIL-A-46146.
- Parylene (paraxylene) coatings containing chlorine
- Polyvinylchloride
- Polyvinylchloride (PVC) or vinylchloride wire insulation
- Silicone greases in applications where migration can occur

Soldering/Solderability Requirements:

- (A) Soldering must comply with IPC J-STD-001D
- (B) Component lead/Termination solderability must comply with IPC/EIA-J-STD-002

MSDS

Where applicable, a copy of the current Material Safety Data Sheet is required.

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Sensitive Material

Notice of any material sensitivity to temperature, humidity or light must be attached to packing slip of each lot and/or delivery of material.

Material Traceability

Each shipment must be identified by lot number, batch number or date code, part type, part number, specification and/or revision level (as applicable) and records of acceptance (i.e. test reports, inspection records, or verifiable documentation of quality indicating conformance to applicable specifications) shall be maintained by the supplier and shall be available for review by KCB and/or Government. Proof of traceability must be available at supplier facility and shall be retained for a period of 10 years after final shipment unless otherwise specified in the Purchase Order/Contract.

- (A) If more than one lot of material is used to satisfy one line item on order, keep lots segregated and labeled by lot number.
- (B) Date code not to exceed one year old (except by written waiver from KCB)

SPECIAL PROCESS CONTROL REQUIREMENTS

For all special processes, including but not limited to soldering, welding, brazing, heat treating, painting, workmanship, radiography, cleaning, plating/electroplating or outside service items on this Purchase Order, where applicable, supplier or outside source must be certified to applicable military specifications, with certification documentation available for KCB review for a minimum of 10 years.

Calibration for Inspection and/or Production Test Equipment and Tooling

The Supplier is held responsible for the protection, current calibration, and care (other than normal wear) of all production and inspection tooling and test equipment owned or rented by supplier or supplied by KCB for use in performance of Purchase Order requirements. Supplier must have current updated calibration data on file with standards traceable to NIST and so stated on test reports. All tooling shall be subject to KCB surveillance and/or inspection upon notice. KCB Tooling or equipment, or replacement tooling of equal quality, shall be returned in an acceptable condition upon demand or notice.

Marking Permanency

Marking must be permanent and able to withstand normal manufacturing processes such as per MIL-STD-130.

After testing for marking permanency per specification requirements, there shall be no deterioration or discoloration of the markings such that legibility is impaired, and there shall be no deleterious mechanical or electrical damage or deterioration of the material or finishes as a result of the markings.

Qualified Products List (QPL) Verification

Sellers (including Distributors) providing QPL parts shall supply the prime manufacturer's name and QPL number, and corresponding QPL test report number with each shipment.

Packaging, General

All shipments require packaging to avoid damage in transit. Improperly packaged parts are subject to rejection at KCB incoming inspection.

Microcircuit Packaging

- (A) Microcircuits supplied to this purchase order shall be packed in protective carriers. Microcircuits, including diodes, transistors, flatpacks, etc., shall be packaged so as to maintain lead integrity. Leads shall be free of twists or bends.
- (B) **Electrostatic Discharge Control Requirements:** Packaging for all static-sensitive material will be clearly identified as "ESD-sensitive". This includes all levels of packaging, from waffle to static shielding bags to boxes to outside packing boxes, etc. For electrical and electronic parts, assemblies, and equipment susceptible to damage from Electrostatic Discharge (ESD), the supplier is responsible for establishing and implementing an ESD Control Program compliant with the latest revision of ANSI S2020. The seller shall take the necessary precautions to ensure that static-susceptible devices are adequately protected from ESD damage during manufacturing, test, inspection, packaging and shipping. Packaging shall be marked with an ESD cautionary note or symbol. Areas in which ESD items are handled shall be equipped with humidity monitoring devices. When the relative humidity drops below the permitted lower limit of 30%, all work on ESDS items shall cease until either. The relative humidity increases to at least the lower limit or, Ionization equipment utilized at the ESD workstation is turned on and properly positioned with respect to the product and operated in accordance with the manufacturer's operating instructions

Shelf Life

Material with a limited shelf life shall reflect the Manufacturing storage life, date of manufacture, and expiration date on the container (e.g., epoxies, paints, etc.), as applicable. Material/parts that have a limited shelf life shall have, at the time of receipt at KCB, a minimum of 75 percent of the shelf life remaining unless authorized by KCB. For items too small for part number application, the part number with appropriate cure date shall be applied to the individual bag/container using suitable stick-on type labels. Bags shall be sealed when required by the detail or material specification.

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KCB SPECIFIC QUALITY REQUIREMENTS

Q1. FIRST ARTICLE INSPECTION

Unless arranged by KCB to select in person, the supplier shall evaluate first piece from production lot to be submitted against this order. The supplier shall record all drawing/specification parameters and the actual inspection results obtained on First Article Inspection. The item inspected shall be so identified and shall be accompanied by the completed inspection form when received at KCB's facility.

Q2. SPECIMEN FOR SET-UP

One specimen must be supplied for use by KCB in test set-up. Specimen must be identified by Purchase Order number and traceable lot or batch number and must have been manufactured at the same time using the same process and materials as the supplied lot.

Q3. SOURCE INSPECTION

All items on a Purchase Order are subject to surveillance and inspection by KCB or KCB customer inspection at the point of manufacture unless the supplier receives a waiver in writing from KCB. This inspection will include surveillance of the products and supplier's systems, procedures, and facilities. The supplier shall furnish the necessary facilities and equipment and perform tests to demonstrate conformance to KCB's drawings, requirements and/or specifications at no cost to KCB. The supplier shall provide evidence that KCB's Source Inspection was performed with each shipment. This requirement does not relieve the supplier of the responsibility for final inspection and/or test, nor does it constitute final acceptance by KCB.

Q4. GOVERNMENT SOURCE INSPECTION AT SUPPLIER

Government Inspection is required prior to shipment from your plant. Upon receipt of this order, promptly notify the Government Representative who normally services your plant so that appropriate planning for Government Inspection can be accomplished or, if none please contact the nearest Army, Navy, Air Force, or Defense Supply Agency inspection office. In the event that the representative or office cannot be located, KCB should be notified immediately.

Q5. SPECIAL PROCESSING REPORT

Reports of all special processes and inspection methods such as welding, heat rating, brazing, plating, painting, magnetic particle inspection, fluorescent penetrant inspection, etc. demonstrating compliance with all applicable specifications as referenced by the drawing and/or purchase order shall be submitted with each shipment. KCB will specify exactly which special process requires reporting as part of the purchase order.

Q6. IN-PROCESS INSPECTION

All items covered by this Purchase Order are subject to in-process inspection by the KCB's Quality Representative. The supplier shall provide evidence of in-process inspection performed with each shipment. KCB's shall designate the required in-process source inspection points on the supplier's flow plan, upon receipt and prior to manufacturing.

Q7. RADIOGRAPHIC INSPECTION

The material on this Purchase Order requires radiographic inspection by a laboratory certified to MIL-STD-453 and approved by the KCB. The radiographs shall be interpreted and evaluated to specifications and standards by the certified laboratory as required by the drawing and/or the purchase order. The radiographs and a copy of the laboratory X-ray report must accompany the material delivered to KCB.

Q8. PHYSICAL AND CHEMICAL ANALYSIS

- (A) Manufactured Articles - Raw Material Test Reports: The Supplier shall maintain on file, and assure availability for KCB's review upon request, results of chemical and/or physical tests required to satisfy specification requirements for the raw materials used in the manufacture of articles delivered under this order.
- (B) Raw Material - Chemical and Physical Test Reports: Each shipment of raw material must be accompanied by two legible and reproducible copies of the applicable chemical and physical test results required by and identifiable to the material specifications identified in this order. Test reports furnished shall contain the signature of an authorized representative of the agency performing the tests and evidence of conformance to specification requirements.
- (C) Mill or foundry physical and chemical test reports or a true copy thereof (either carbon or photographic) which demonstrates conformance to all applicable specifications for all metals used in the fabrication of the ordered material shall be supplied with each shipment.

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Q9. CERTIFIED TEST DATA

Certified test data (or a true copy thereof) of applicable electronic or physical measurements printed on stationery of the organization performing the testing shall be supplied with each shipment: (this shall include items purchased from Distributors).

- (A) Actual (Variable) readings taken from measuring instrumentation on required test quantity and test parameters.
- (B) Summary (Attribute) data. Quantity accepted and/or rejected or required test quantity and a list of the parameters tested.

Q10. WORKMANSHIP STANDARD

The material and workmanship shall conform to the latest revision of one of the following:

- (A) Electronic Equipment, Aircraft, MIL-E-5400.
- (B) Test Equipment for use with Electronic and Fire Control Systems, MIL-T-21200 or MIL-T-28800.
- (C) Electronic Equipment, Naval, Ship & Shore, MIL-E-16400.
- (D) Electronic Equipment, Ground, General Requirements, MIL-E-4158.
- (E) Ground Electronic and Associated equipment, MIL-W-27076 (USAF).
- (F) Materials, Parts and Processes used in Military Electronic Equipment, SCL-6200 (USAECOM).
- (G) Standard General Requirements for Electronic equipment, MIL-STD-454.
- (H) Parts, Materials and Processes used in Electronic Communication Equipment, MIL-P-11268.

Q11. IDENTIFICATION

- (A) All material, parts, assemblies, subassemblies or assembly material shall be identified with KCB's specification and drawing revision level as referenced on the applicable purchase order. Examples include:

KCBXXX Rev. X
82XXX Rev. X
81XXX Rev. X

- (B) The part number with the appropriate revision shall be applied to the individual packaging of the item, using suitable stick-on type labels (not applied directly to the item).
- (C) Fabricated detailed machined parts shall include the Seller's name or logo adjacent to the part number and revision level marking.

Q12. INSPECTION AND TEST PLAN

The quality conformance of items deliverable under the KCB order shall be verified in accordance with an inspection and test plan which shall consist, at a minimum, of one of the following:

- (A) A parts list or configuration log
- (B) A material flow chart which identifies points of inspection/test, the type of inspection/test performed and the criteria utilized to determine acceptability at each inspection/test point
- (C) An inspection and test plan prepared by the supplier and approved by KCB prior to shipment of the first item deliverable hereunder; however, resubmission of a plan previously approved by KCB for like items is not required unless the supplier has changed the plan that was previously approved by KCB.

Q13. MANUFACTURER'S SPECIFICATION

Shipment against this order shall contain a copy of the manufacturer's specification suitable for Receiving Inspection purposes. A proprietary specification is exempted; in this case a copy of the published description shall be furnished.

Q14. Mercury-free Certification

Each shipment must be accompanied by certification that materials supplied contain no mercury (metallic or compounds).

Q15. Die Map

Provide a die map, with pad functions identified, to KCB with each die shipment

Q16. Drawing

Provide a detailed drawing with dimensions to KCB with each shipment.

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Q17. Single Lot

- (A) All material must be supplied from one production lot.
- (B) All material must be supplied from one diffusion lot.
- (C) All assembled devices for a single line item on order must have the same date code (except by written waiver from KCB)