

**CUSTOMER CONTRACT REQUIREMENTS**  
**(PAC 3 – FY 06)**  
**CUSTOMER CONTRACT 4300213637**

**CUSTOMER CONTRACT REQUIREMENTS**

The following customer contract requirements apply to this contract to the extent indicated below. If this contract is for the procurement of commercial items under a Government prime contract, as defined in FAR Part 2.101, see Section 3 below.

1. The following contract clauses are incorporated by reference from the Federal Acquisition Regulation and apply to the extent indicated. In all of the following clauses, "Contractor" and "Offeror" mean Seller.

52.203-6 Restrictions on Subcontractor Sales to the Government (JUL 1995). This clause applies only if this contract exceeds \$100,000.

52.203-11 Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (SEP 2005). By signing and returning its solicitation response, Seller is executing the certification included in this clause. The certification required by this clause applies only if this contract exceeds \$100,000.

52.203-12 Limitation on Payments to Influence Certain Federal Transactions (SEP 2005). This clause applies only if this Contract exceeds \$100,000. Paragraph (c)(4) is modified to read as follows: "(c)(4) Seller will promptly submit any disclosure required (with written notice to Boeing) directly to the PCO for the prime contract. Boeing will identify the cognizant Government PCO at Seller's request. Each subcontractor certification will be retained in the subcontract file of the awarding contractor.

52.204-2 Security Requirements (AUG 1996). "Changes clause" means the changes clause of this contract. This clause applies only if access to classified material is required.

52.211-5 Material Requirements (AUG 2000). Any notice will be given to Buyer rather than the Contracting Officer.

52.211-15 Defense Priority and Allocation Requirements (SEP 1990). This clause is applicable if a priority rating is noted in this contract.

52.215-2 Audit and Records - Negotiation (JUN 1999). This clause applies only if this contract exceeds \$100,000 and (i) is cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these types: (ii) Seller was required to provide cost or pricing data, or (iii) Seller is required to furnish reports as discussed in paragraph (e) of the referenced clause.

52.215-10 Price Reduction For Defective Cost or Pricing Data (OCT 1997). This clause applies only if this contract exceeds \$550,000 and is not otherwise exempt. In subparagraph (3) of paragraph (a), insert "of this contract" after "price or cost." In Paragraph (c), "Contracting Officer" shall mean "Contracting Officer or Buyer." In Paragraphs (c)(1), (c)(1)(ii), and (c)(2)(i), "Contracting Officer" shall mean "Contracting Officer or Buyer." In Subparagraph (c)(2)(i)(A), delete "to the Contracting Officer." In Subparagraph (c)(2)(ii)(B), "Government" shall mean "Government or Buyer." In Paragraph (d), "United States" shall mean "United States or Buyer."

52.215-12 Subcontractor Cost or Pricing Data (OCT 1997). This clause applies only if this contract exceeds \$550,000 and is not otherwise exempt. The certificate required by paragraph (b) of the referenced clause shall be modified as follows: delete "to the Contracting Officer or the Contracting Officer's representative" and substitute in lieu thereof "The Boeing Company or any of its wholly owned subsidiaries."

52.215-14 Integrity of Unit Prices (excluding subparagraph (b)) (OCT 1997). This clause applies except for contracts at or below \$100,000; construction or architect-engineer services under FAR Part 36; utility services under FAR Part 41; services where supplies are not required; commercial items; and petroleum products.

52.215-15 Pension Adjustments and Asset Reversions (OCT 2004). This Clause applies to this contract if it meets the requirements of FAR 15.408(g).

52.215-18 Reversion or Adjustment of Plans for Postretirement Benefits Other Than Pensions (PRB) (JUL 2005). This Clause applies to this contract if it meets the requirements of FAR 15.408(j).

52.215-19 Notification of Ownership Changes (OCT 1997). This Clause applies to this contract if it meets the requirements of FAR 15.408(k).

52.219-8 Utilization of Small Business Concerns (MAY 2004).

52.219-9 Small Business Subcontracting Plan (JUL 2005). In paragraph (c), "Contracting Officer" shall mean Buyer. This clause applies only if this contract exceeds \$500,000. and Seller is not a small business concern.

52.222-21 Prohibition of Segregated Facilities (FEB 1999).

52.222-26 Equal Opportunity (subparagraph (b)(1) through (11)) (APR 2002).

52.222-35 Equal Opportunity for Special Disabled, Veterans of the Vietnam Era, and Other Eligible Veterans (DEC 2001). This clause applies only if this contract exceeds \$25,000.

52.222-36 Affirmative Action for Workers With Disabilities (JUN 1998). This clause applies only if this contract exceeds \$ 10,000.

52.222-37 Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (DEC 2001). This clause applies only if this contract exceeds \$25,000.

52.222-39 Notification of Employee Rights Concerning Payment of Union Dues or Fees (DEC 2004). This clause applies only if this contract exceeds \$100,000.

52.223-3 Hazardous Material Identification and Material Safety Data (JAN 1997). This clause applies only if Seller delivers hazardous material under this contract.

52.223-11 Ozone Depleting Substances (MAR 2001).

52.223-13 Certification of Toxic Chemical Release Reporting (AUG 2003). Except for commercial items as defined in FAR Part 2, this clause applies to competitive procurements expected to exceed \$100,000 (including all options). If Seller is not subject to the Form R filing and reporting requirements, Seller shall inform Buyer which exemption or exemptions in subparagraph (b)(2) of this clause apply.

52.223-14 Toxic Chemical Release Reporting (excluding subparagraph (e)) (AUG 2003). This clause applies only if this contract is not for commercial items as defined in FAR Part 2, was competitively awarded, and exceeds \$100,000 (including all options).

52.225-1 Buy American Act — Balance of Payments - Supplies (JUN 2003). This clause does not apply if this contract is placed under a Department of Defense contract.

52.225-8 Duty-free Entry (FEB 2000). This clause applies only if this contract identifies supplies to be afforded duty-free entry or if foreign supplies in excess of \$10,000 may be imported into the customs territory of the United States. For the purposes of this clause, the blanks in paragraph (g)(3) are completed as follows: UNITED STATES GOVERNMENT, DEPARTMENT OF DEFENSE, Duty-free entry is claimed pursuant

Section XXII, Chapter 98, Subchapter VIII, Item No. 9808.00.30 of the Harmonized Tariff Schedule of the United States. Upon arrival of shipment at port of entry, the importer or authorized agent will notify Commander, Defense Contract Management Area Operations (DCMAO, New York, 201 Varick Street, New York, New York, 10014-4811, Attention DCRN-NCT) for execution of Customs Forms 7501, 7501-A, or 7506 and required duty free entry certificates.

52.225-13 Restrictions on Certain Foreign Purchases (FEB 2006).

52.227-1 Authorization and Consent (JUL 1995).

52.227-2 Notice and Assistance Regarding Patent and Copyright Infringement (AUG 1996). A copy of each notice sent to the Government will be sent to Buyer. "Contracting Officer" shall mean "Buyer". This clause applies only if this contract exceeds \$100,000.

52.227-11 Patent Rights - Retention by the Contractor (Short Form) (JUN 1997). This clause only applies if this Contract is for experimental, developmental, or research work and Seller is a small business firm or nonprofit organization.

52.227-12 Patent Rights - Retention by the Contractor (Long Form) (JAN 1997). This clause only applies if this Contract is for experimental, developmental, or research work and Seller is other than a small business firm or nonprofit organization.

52.227-14 Rights in Data — General (JUN 1987). This clause applies only if data will be produced, furnished or acquired under this contract.

52.228-5 Insurance - Work on a Government Installation (JAN 1997). Seller shall provide and maintain insurance as set forth in this contract.

52.230-6 Administration of Cost Accounting Standards (APR 2005). Add "Buyer and the" before "CFAO" in paragraph (m). This provision applies if Clause H001, H002 or H004 is included in Buyer's contract.

52.234-1 Industrial Resources Developed Under Defense Production Act Title III (DEC 1994).

52.242-15 Stop Work Order (AUG 1989). Change "90 days" and "30 days" to "100 days" and "20 days" respectively. The terms "Contracting Officer" and "Government" shall mean Buyer.

52.244-6 Subcontracts for Commercial Items (FEB 2006)

52.245-2 Government Property (Fixed Price Contracts) (MAY 2004). This clause is not applicable if this contract incorporates Form GP4. "Government" shall mean Government throughout except the first time it appears in paragraph (f) when "Government" shall mean the Government or the Buyer.

52.245-17 Special Tooling (MAY 2004). This clause applies only if tooling is acquired for or furnished by the Government and to be retained for use by the Seller.

52.245-18 Special Test Equipment (FEB 1993). Change "30 days" to "45 days" in paragraph (b) and (c). The notice of intent to procure special test equipment required by this clause shall be forwarded to the Buyer.

52.247-63 Preference for U.S.-Flag Air Carriers ( JUN 2003). This clause only applies if this contract involves international air transportation.

52.247-64 Preference for Privately-Owned U.S. Flag Commercial Vessels (FEB 2006), Alternate I (APR 2003). In paragraph (C)(2) "20" and "30" are changed to 10 and 20 respectively.

52.248-1 Value Engineering (excluding subparagraph (f)) (FEB 2000). The term "Contracting Officer" means Buyer. This clause applies only if this contract is for \$100,000 or more. If Value Engineering Change Proposal is accepted by the Government, Seller's share will be 50% of the instant, concurrent and future contract net acquisition savings and collateral savings that Buyer receives from the Government. Seller's negotiated share of the net acquisition savings and collateral savings shall not reduce the Government's share of concurrent or future savings or collateral savings. Buyer's payments to Seller under this clause are conditioned upon Buyer's receipt of authorization for such payments from the Government.

- 2. DoD Contracts. If this Contract is placed under a Department of Defense Contract, the following contract clauses are incorporated by reference from the Department of Defense Federal Acquisition Regulation Supplement and apply to the extent indicated. In all of the following clauses, "Contractor" and "Offeror" mean Seller except as otherwise noted. Unless otherwise provided, the clauses are those in effect as of the date of this contract.

252.203-7001 Prohibition on Persons Convicted of Fraud or Other Defense-Contract Related Felonies (excluding paragraph (g)) (DEC 2004). This clause applies only if this contract exceeds \$100,000 and does not apply to the purchase of commercial items or commercial components. "Contractor" and "contract" are not changed in paragraphs (a) and (b). In paragraph (e), "Government" shall mean Government or Buyer. In paragraph (f), "through the Buyer" is inserted after "Contracting Officer".

252.204-7000 Disclosure of Information (DEC 1991). Seller will submit requests for authorization to release through Buyer.

252.208-7000 Intent to Furnish Precious Metals as Government-Furnished Material (Dec 1991). The term "Offeror" shall mean Seller. This clause applies only if this contract exceeds \$100,000 and if an item being purchased contains precious metal.

252.209-7000 Acquisition From Subcontractors Subject to On-site Inspection Under the Intermediate-Range Nuclear Forces Treaty (NOV 1995). This clause applies only if this contract exceeds \$100,000 and does not apply to the purchase of commercial items or commercial components.

252.211-7000 Acquisition Streamlining (DEC 1991). This clause applies only if this contract exceeds \$1 million.

252.211-7003 Item Identification and Valuation (JUN 2005). Seller shall comply with the unique item identification requirements of this clause for those subassemblies, components, and parts specified elsewhere in this contract. Such identification and marking shall be a high-capacity 2D machine readable code to comply with MIL-STD-130 L. The code may include, as space is available, linear bar code and human readable characters. Unless otherwise specified in Boeing product drawings or specifications, the seller may use either Construct #1 or Construct #2. The Seller shall not be required to furnish item valuations as set forth in this clause.

252.215-7000 Pricing Adjustments (DEC 1991). This clause applies only if this contract exceeds \$500,000.

252.223-7001 Hazard Warning Labels (DEC 1991). This clause applies only if Seller delivers hazardous material under this contract.

252.225-7009 Duty-free Entry — Qualifying Country Supplies (End Products and Components) (AUG 2000).

252.225-7010 Duty-free Entry — Additional Provisions (AUG 2000). This clause applies in addition to FAR 52.225-10.

ACO	_____
Activity Address	DCMC Boeing _____
	_____

Activity Address Number	_____
Prime Contractor	_____
Prime Contractor's Address	The Boeing Company
	_____
Cage Code	_____
Prime Contract Number	_____
Prime Contract Dollar Value	\$ _____

252.225-7012 Preference for Certain Domestic Commodities (JUN 2004).

252.225-7013 Duty-Free Entry (JUN 2005). This clause applies if this contract is for (i) qualifying country components or (ii) nonqualifying country components for which the U.S. duty is estimated to exceed \$200 per unit. Seller shall include the prime contract number on all shipping documents submitted to Customs for supplies for which duty-free entry is claimed pursuant to this clause.

ACO	_____
Activity Address	DCMC Boeing _____
	_____
Activity Address Number	_____
Prime Contractor	The Boeing Company
Prime Contractor's Address	_____
	_____
Cage Code	_____
Prime Contract Number	_____
Prime Contract Dollar Value	\$ _____

252.225-7014 Preference for Domestic Specialty Metals (JUN 2005), Alternate I (APR 2003).

252.225-7016 Restriction on Acquisition of Ball and Roller Bearings (MAR 2006). This clause does not apply to the purchase of commercial items other than ball or roller bearings or to items which contain no ball or roller bearings.

252.225-7025 Restriction on Acquisition of Forgings (JUN 2005). This clause applies only if this contract is for goods that contain restricted forging items per paragraphs (a) and (b) of the referenced clause.

252.225-7026 Reporting of Contract Performance Outside the United States (JUN 2000). This clause applies only if this contract exceeds \$500,000 and is not for commercial items, construction, ores, natural gases, utilities, petroleum products and crudes, timber (logs), or subsistence.

252.226-7001 Utilization of Indian Organizations and Indian-Owned Economic Enterprises – DoD Contracts (SEP 2004). This clause applies if this contract exceeds \$100,000 and does not apply to the acquisition of commercial items/services as defined in FAR 2.101.

252.227-7013 Rights in Technical Data - Noncommercial Items (NOV 1995). This clause applies only if the delivery of data is required for noncommercial items under this contract.

252.227-7016 Rights in Bid or Proposal Information (JUN 1995).

252.227-7019 Validation of Asserted Restrictions - Computer Software (JUN 1995). This clause applies only if computer software may be originated, developed, or delivered under this contract.

252.227-7030 Technical Data - Withholding of Payment (MAR 2000). In this clause, "Government" and "Contracting Officer" shall mean Buyer. This clause applies only if the delivery of technical data is required under this contract.

252.227-7036 Declaration of Technical Data Conformity (JAN 1997). This clause applies only if the delivery of data is required by this contract.

252.227-7037 Validation of Restrictive Markings on Technical Data (SEP 1999). This clause applies only if the delivery of data is required by this contract.

252.228-7005 Accident Reporting and Investigation Involving Aircraft, Missiles, and Space Launch Vehicles (DEC 1991).

252.231-7000 Supplemental Cost Principles (DEC 1991)

252.245-7001 Reports of Government Property (MAY 1994). Seller will provide information that the Buyer may require to complete Buyer's annual report.

252.247-7023 Transportation of Supplies by Sea (MAY 2002). This clause applies only if the supplies are of a type described in paragraph (b)(2) of this clause. In paragraph (d), "45 days" is changed to "60 days." In paragraph (g) "Government" means Buyer. If this contract is at or below \$100,000, paragraphs (f) and (g) are excluded.

252.247-7024 Notification of Transportation of Supplies by Sea (MAR 2000). "Contracting Officer" and, in the first sentence of paragraph (a), "Contractor" mean Buyer. This clause applies only if the supplies being transported are noncommercial items or commercial items that (i) Seller is reselling or distributing to the Government without adding value (generally, Seller does not add value to items that it contracts for f.o.b. destination shipment); (ii) are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or (iii) are commissary or exchange cargoes transported outside the Defense Transportation System in accordance with 10 U.S.C. 2643.

252.249-7002 Notification of Anticipated Contract Terminations or Reduction (DEC 1996). This clause applies only if this contract is \$500,000 or more. Seller will comply with the notice and flowdown requirements of paragraph (d)(2) of the referenced clause.

3. If goods or services being procured under this contract are commercial items and Clause H203 is set forth in the purchase order, the foregoing Government clauses in Sections 1 and 2 above are deleted and the following FAR/DFARS clauses are inserted in lieu thereof:

52.219-8 Utilization of Small Business Concerns (OCT 2000). Include in all subcontracts that offer further subcontracting opportunities. If a subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), Seller and any lower tier subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

52.222-26 Equal Opportunity (subparagraph (b)(1) through (11)) (APR 2002).

52.222-35 Affirmative Action for Special Disabled and Vietnam Era Veterans (Dec 2001). This clause applies only if this contract exceeds \$25,000.

52.222-36 Affirmative Action for Handicapped Workers (JUN 1998). This clause applies only if this contract exceeds \$10,000.

52.222-39 Notification of Employee Rights Concerning Payment of Union Dues or Fees (DEC 2004). This clause applies only if this contract exceeds \$100,000.

52.247-64 Preference for Privately Owned U.S.-Flag Commercial Vessels (APR 2003). This clause only applies if this contract is (i) a contract or agreement for ocean transportation services; or a construction contract; or (ii) the supplies being transported are (a) Items the Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to the items when it subcontracts items for f.o.b. destination shipment); or (b) shipped in direct support of U.S. military (1) contingency operations; (2) exercises; or (3) forces deployed in connection with United Nations or North Atlantic Treaty Organization humanitarian or peacekeeping operations.

252.225-7014, Preference for Domestic Specialty Metals (JUN 2005), Alternate I (APR 2003).

252.247-7023 Transportation of Supplies by Sea (MAY 2002). This clause applies only if the supplies are of a type described in paragraph (b)(2) of this clause. In paragraph (d), "45 days" is changed to "60 days." In paragraph (g) "Government" means Buyer. If this contract is at or below \$100,000, paragraphs (f) and (g) are excluded.

252.247-7024 Notification of Transportation of Supplies by Sea (MAR 2000). "Contracting Officer" and, in the first sentence of paragraph (a), "Contractor" mean Buyer. This clause applies only if the supplies being transported are noncommercial items or commercial items that (i) Seller is reselling or distributing to the Government without adding value (generally, Seller does not add value to items that it contracts for f.o.b. destination shipment); (ii) are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or (iii) are commissary or exchange cargoes transported outside the Defense Transportation System in accordance with 10 U.S.C. 2643.

#### 4. Cost Accounting Standards

(1) (Applicable if this contract incorporates clause H001). The version of FAR 52.230-2, Cost Accounting Standards, incorporated by clause H001 is the version dated April 1998.

(2) (Applicable if this contract incorporates clause H002). The version of FAR 52.230-3, Disclosure and Consistency of Cost Accounting Practices, incorporated by clause H002 is the version dated April 1998.

#### 5. The following prime contract special provisions apply to this purchase order:

##### A. NOTIFICATION OF DEBARMENT/SUSPENSION STATUS

Seller shall provide immediate notice to Buyer in the event of being debarred suspended, or proposed for debarment by any Federal Agency during the performance of this Contract.

##### B. EXPORT CONTROLLED DATA RESTRICTIONS

(1) For the purpose of this clause,

(A) Foreign person is any person who is not a citizen of the U.S. or lawfully admitted to the U.S. for permanent residence under the Immigration and Nationality Act, and includes foreign corporations, foreign organizations, and foreign governments;

(B) Foreign representative is anyone, regardless of nationality or citizenship, acting as an agent, representative, official, or employee of a foreign government, a foreign-owned or influenced firm, corporation, or person; and

(C) Foreign sources are those sources (vendors, subcontractors, and suppliers) owned and controlled by a foreign person.

(2) Seller shall place a clause in subcontracts containing appropriate export control restrictions, set forth in this clause.

(3) Nothing in this clause waives any requirement imposed by any other U.S. Government agency with respect to employment of foreign nationals or export-controlled data and information.

(4) Equipment and technical data generated or delivered in the performance of this contract are controlled by the International Traffic in Arms Regulation (ITAR), 22 CFR Sections 121 through 128. An export license is required before assigning any foreign source to perform work under this contract or before granting access to foreign persons to any equipment and technical data generated or delivered during performance (see 22 CFR Section 125). Seller shall notify Buyer and obtain the written approval of Buyer prior to assigning or granting access to any work, equipment, or technical data generated or delivered in the performance of this contract to foreign persons or their representatives. This notification shall include the name and country of origin of the foreign person or representative, the specific work, equipment, or data to which the person will have access, and whether the foreign person is cleared to have access to technical data (DoD 5220.22-M, National Industrial Security Program Operating Manual (NISPOM)).

#### C. NON-COMPLIANT PARTS, PROCESSES & MATERIAL

The Seller shall request Boeing approval for the use and/or delivery of hardware consisting of or containing any of the Non-compliant, parts, materials and processes identified in paragraphs 1 through 4 herein. Paragraph 3 Item “y” is especially important because Boeing intends to scan samples of all incoming hardware deliverable under this PAC-3 Purchase Order. If the deliverable hardware contains pure tin and you have not obtained Boeing approval in advance, as required above, your hardware will be considered non-compliant and shall be rejected and returned at seller’s expense.

##### **(1) Non-Compliant Parts**

- a. Silver case wet slug tantalum and aluminum electrolytic capacitors. Non-hermetic sealed plastic film capacitors.
- b. Relays not hermetically sealed, relays not solid state, and reed relays.
- c. Variable capacitors, resistors, and magnetic devices.
- d. Passive components with failure rate level over 0.1% per 1000 hours.
- e. Non-hermetic microcircuits and semiconductors.
- f. Selenium rectifiers and thermal compression diodes.
- g. Discrete diodes not of metallurgical bonded double plug construction or that contain point contact whisker/wire conductors or plate silver button contacts..
- h. Discrete semiconductors not equivalent to or better than JANTX or AEC-Q101 and microcircuits not equivalent to or better than QML/SMD, class M, B, Q, H, or AEC-Q100.
- i. Open type transformers not environmentally protected.
- j. Wire with single polytetrafluoroethene insulation.
- k. Silver plated copper wire that fails deterioration control tests per ASTM B 298.
- l. Bare hookup wire.
- m. Polyimide insulated copper wire.
- n. Sockets and socketed devices.
- o. Circuit protection fuses.
- p. Vacuum tubes except cathode-ray tubes.
- q. Parts and materials used outside manufacturer specifications without prior customer agreement.
- r. Mechanized switches.
- s. Electronic, electrical, or electromechanical, (EEE) components with internal or external unalloyed tin or commercially pure tin.
- t. Fiber inserts, sheet spring nuts, and sheet spring washers as locking devices.



**(2) Non-Compliant Design Practices for Electronic and Related Equipment**

- a. Traps or crevices susceptible to moisture collection.
- b. Unsealed permanent fasteners (recommend installing with wet primer of polysulfide sealant).
- c. Galvanic metal couples with over 100 mv potential difference.
- d. Ineffective gasket, lid, or enclosure seals in moisture-tight housing designs.
- e. Unprotected bearings.
- f. Untested adhesively bonded designs (recommend stress and humidity tests be performed).
- g. Hardware requiring field maintenance for corrosion control.
- h. Inadequate consideration for acid fumes in battery locations.
- i. Over current protective device connected in series with any conductor which is grounded at the power source unless the device simultaneously opens all load conductors in the circuit and no pole operates independently, or as otherwise allowed by the National Electrical Code, NFPA 70.
- j. Moisture absorbent materials, such as open-celled foam, used to fill moisture pockets.
- k. Printed wiring assemblies (Paws) without conformal coatings.
- l. PWAs with piggybacked mounted components or components/leads using other components/leads for support or attachment.
- m. Jumper wires not detailed on the engineering drawing.
- n. Glass bodied components not protected by buffer material when epoxy coatings are used.
- o. Metal-bodied components or bare wires mounted over circuit paths without insulation.
- p. Parts or components overhanging the edge of a PWA.
- q. Through-hole components mounted on both sides of a PWA.
- r. Large-bodied components mounted without adequate support.
- s. High heat-dissipation components mounted without adequate heat sinks.
- t. Multiple leads or wires mounted in a single plated through hole.
- u. Surface mounted components utilizing butt joint connections.

**(3) Non-Compliant Materials**

- a. Aluminum alloys 2024-T3 or T4 (use T8 or 5000/6000 series).
- b. Aluminum alloys 7001-T6, 7278-T6 and 7075-T6 (use T73 temper or 7050-T73).
- c. Magnesium.
- d. Precipitation hardening stainless steels in the H900, H950, or H1000 tempers (use H1025 or higher temper).
- e. Lubricants and greases which contain graphite.
- f. PVC and PVF plastics and PVC electrical insulation.
  - g. Adhesives and sealants which emit corrosive vapors such as acetic acid during cure (RTVs). Adhesives and sealants that are susceptible to reversion.
- h. Rubber that is susceptible to ozone damage.
- i. Chromate conversion coating on aluminum which fails 168 hours salt spray exposure per ASTM B117.
- j. Cadmium or zinc plating without supplementary treatment.
- k. Electrical contacts without undercoating.
- l. Silver plated electrical contacts.
- m. Gold connector contacts with less than 50 micro inches of gold outer plating.
- n. Potting and foam materials that are reversion prone.
- o. Bare corrodible metal surfaces.
- p. Materials not environmentally resistant to moisture, fungus, temperature, reversion, and ozone. Materials not inherently moisture and fungus resistant.
- q. Nickel plated aluminum construction.
- r. Polyimide insulated copper and copper alloy wire.
- s. Class 1 ozone depleting chemicals(ODCs). Those materials not previously listed herein which can be found in the Emergency Planning and Community Right-to-know Act (EPCRA) 313 Toxic Chemicals list and EPCRA 302 Extremely Hazardous Substances list"
- t. Desiccants, organic or polymeric materials, such as lacquers, varnishes, coatings, adhesives, or greases inside hermetic microcircuit and semiconductor packages.

- u. Materials used in the end item configuration that may demonstrate unintended flammable properties in item specified worst case environments. Test methods and degrees of flammability are defined in UL 94.
- v. Cotton and linen as filler material in any electrical insulator without vacuum impregnation of varnish.
- w. Radioisotopes/radioactive materials except as allowed by AR-11-9.
- x. Pentachlorophenol, commonly referred to as "Penta" or "PCP" as a wood product preservative. Use 2 percent copper naphtheate, 3 percent zinc naphthenate, or 1.8 percent copper 8 quinolinolate.
- y. Unalloyed or commercially pure tin or tin coatings inside electrical, electronic, or electro-mechanical (EEE) parts or as a final finish on EEE or associated mounting hardware, with the exception of tin coating on wire.
- z. Fabric or textile sensitive (adhesive or friction) types of electrical tape.

**(4) Protective Finishes and Coatings**

Finishes and coatings shall be applied as necessary to provide corrosion/deterioration protection. MIL-STD-186 shall be used as reference for application and quality control of paints and finishes.