



## Pleora Supplier Quality Clauses

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## Revision History

Revision	Date	Author	Description
0.4	5/12/2021	L. McHenry	- Initial Revision
0.5	5/26/2021	L.McHenry	DICA requested alterations minor edits related to GIDEP reporting, CFE equipment, Pleora AVL safety obligations, NADCAP supplier clarification as not mandatory, Provision of Registrar NCR records requested. Pleora FAIR obligations correct drawings
1.0	Jan 2023	L. McHenry	Refresh ENV mandates
1.1	Dec 2023	L.McHenry	-PFAS advisory Q118, SCIP ECHA dossier's required on finished products bought by Pleora. Added reference to US EPA TSCA. Up revised to new arena format. Old legacy DCC cross reference EX018-000-0001



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## 1. Scope

Quality Clauses applicable to external suppliers. The purpose of this document is to identify quality clauses used on Purchase Orders (POs) by Pleora sites. The QC clauses shall be listed on the Pleora supplier website portal applicable by commodity and will be referred to on the Pleora Purchase Order Footers.

If detailed unique requests are made they will be listed on the Purchase order or Statement of works. Specific exemptions are listed please review and determine applicability. Additionally, supplier agreements may be in place that should be reviewed for exceptions to these clauses.

This procedure applies to all Pleora sites and their suppliers. It is intended to establish common language for supplier quality requirements related to Pleora Purchase Orders.

**Process Owner:** Pleora Quality Engineering and Supply Chain Manager

**Pleora responsibility:**

The Pleora QA/SCM and Design Development managers are responsible for the development and control of common supplier quality clauses.

**Supplier responsibility:**

The supplier shall review all identified quality clauses on the Pleora supplier portal and ensure compliance to the specified requirements (most current revision). In the event of confusions or conflict identified in clauses or other Pleora documentation, it is the supplier's responsibility to contact the Pleora Procurement Manager to resolve those issues prior to initiating work.

**Stakeholders:** The stakeholders are the Quality and Supply Chain personnel at each Pleora location who define these clauses as well as suppliers of service or products.

**Referenced Documents:** No specific revision numbers of documentation are called out in this document. The latest revision of the referenced document should be used.

**Quality Clause Structure:**

The Quality clauses are categorized into Q100, Q200, and series numbers. Quality Clauses shall be applicable to all Production POs. If a specific service P.O. requires unique deliverables a SOW will govern that. When a supplier accepts the Purchase Order, they are expected to pull the clauses from the Pleora supplier FTP and to comply with all of the Quality Clause requirements listed. If a supplier cannot meet the Quality clauses contact Pleora Buyers.

## 2. Background

Reference the relevant documents and standards.

Doc ID	Title	Comments
ANSI ESD 20.20	ESD Controls	Reference
ISO9001:2015	ISO 9001	Reference

ASTM D3951-10	Commercial packaging guidance	Reference
OP018-000-0001	Authenticity Testing Pleora	Reference
AS5553	Anti-Counterfeit	Reference
AS6081	Testing for Counterfeit	Reference
ISO17025	Test Lab Standards	Reference
GIDEP	Govt Industry Data Exchange Program	Reference
ISO 10012	Measurement Systems	Reference
IPC Various	See body too numerous to list	Reference
J-STD-033	See Body several JDEC standards are referred	Reference
NAS 412	FOD	Reference
AS9102	FAIR	Reference
IPC/EIA J STD 002 and 013 and 020	Solderability-MSL	Reference
ROHS REACH CMRT TSCA EU SCIP ECHA	See enclosed	Reference

Table 1: Related Documentation

### 3. Body

#### Acronyms and Definitions

ABL	As Built List
CCA	Circuit Card Assembly
C of A	Certificate of Analysis
C of C	Certificate of Conformance (or Compliance)
C of T	Certificate of Test
COTS	Commercially available Off-The-Shelf (as defined in FAR 2.101)
DSR	Designated Supplier Representative
ESD	Electrostatic Discharge
FAI	An AS9102 First Article
M&TE	Measuring and Test Equipment
MHP	Mandatory Hold Point
MRB	Material Review Board
PCB	Printed Circuit Board
PO	Purchase Order
PWB	Printed Wiring Board
QA	Quality Assurance
QMS	Quality Management System
QPL	Qualified Products List
RAB	Registrar Accreditation Board

SCAR	8D-Supplier Corrective Action Request
UID	Unique Identification
SCM	Supply Chain Management
CMRT	Conflict minerals reporting template.
TSCA	US EPA Toxic Substances Control Act.
EUSCIP	This is the European Unions mandated product declarations applicable to finished good products imported to the EU. If Pleora is exporting a sub assembly built by an OEM (i.e. Avermedia Processor) it must be EU SCIP ECHA listed.
PFAS	Referred to as forever chemicals see EPA for chemical declarations.

**Procedure for Using Clauses**

Clause requirement or feels that it is not applicable, they must contact Pleora SCM to ensure resolution on the Purchase Order.

**100-series clauses** are standard requirements for all Pleora Sites. Where there are site specific requirements beyond the basic Quality Clause, they are listed as subsets underneath that clause.

The **200-series clauses** are commodity specific.

**Quality Clauses**

**Q100 – Quality Management System:** The seller shall maintain a Quality Management System that complies with the requirements of AS9100, ISO 9001 or a Pleora approved Quality Management System (formal certification by an accredited registrar is preferred but not mandatory). The Seller shall notify the Buyer of any changes to the QMS, i.e. certification status, facility relocation. If the supplier is ISO/AS9100/AS9120 / accredited Pleora may request via access to the supplier's latest registrar audit nonconformity reports.

**Q 100.1 Product Safety:**

The organization shall ensure that persons doing work under the organization's control are aware of their contribution to product safety. The organization shall determine the requirements for the products and services including consideration of personal and product safety. The organization shall plan, implement, and control the processes needed to assure product safety during the entire product life cycle, as appropriate to the organization and the product. These processes include:  
Assessment of hazards and management of associated risks; management of safety critical items; analysis and reporting of occurred events affecting safety; communication of these events and training of persons. Addressing the impact of Human Factors on process, product or design process where applicable. Product Safety for issues for CEM and on Pleora designs is design specific and CEM's are requested to inform Pleora of observed safety issues.

**Q101 – Identification, Preservation, and Packing:** shall be in accordance with Standard Commercial Packaging Practice in order to protect the materials from damage in transit. Reference ASTM D3951-10 for **guidance**. Each packing list shall include, as a minimum,

the following information: Part number and revision when applicable; PO number; PO Line item (optional); Quantity; Supplier/Manufacturer's identification.

**Q102** – Source of Supply: See Pleora's General Purchase Order Terms and Conditions Section OP018-000-0001 testing authenticity requirement document for additional requirements regarding Counterfeit Electronic Parts.

Suppliers are responsible for ensuring compliance of materials used to manufacture parts supplied to Pleora:

Suppliers shall only purchase materials from Original Equipment Manufacturers (OEMs), Original Component Manufacturers (OCMs) or the OEM/OCM Authorized Distributors (i.e. all electrical, electronic, and electromechanical (EEE) parts that are currently in production or available in stock at an Authorized Source, shall be procured from an Authorized Source). Purchasing from Independent Distributors (i.e. Brokers) or other sources is not authorized unless the part is no longer in production and is not available in stock at an Authorized Source. In this case, the Supplier shall submit a Supplier Variation Request (SVR) to Pleora that will document that a non-Authorized Source is being considered, and to determine the required course of action prior to use or procurement. Pleora may issue Variation Deviation forms to suppliers if required. Approved Suppliers of electrical, electronic, and electromechanical (EEE) parts or assemblies containing EEE parts shall have an established Counterfeit Parts Control Plan in compliance with a recognized industry standard (e.g. SAE AS5553C, AS6496, SAE AS6081, etc.) All Authorized Franchised Distributors of EEE parts shall comply with SAE AS6496, Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition – Authorized/Franchised Distributors. An Authorized Distributor shall disclose to Pleora, prior to shipment if they are not authorized by the OCM/OEM to supply the EEE parts or assemblies containing the EEE parts. CEM's shall use Pleora Authenticity Labs sources for any Non Franchised Deives requested. (Currently Pleora Approves Abstract, SMT corp and Converge.

All Independent Distributors (Brokers) shall be equipped and accredited as an Authentication Lab of EEE parts, shall be approved by Pleora and shall comply with the QMS portions of SAE AS5553/AS6081, Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition – Distributors. Inspection and testing requirements contained within SAE AS6081 have been superseded by SAE AS6171A, Test Methods Standard; General Requirements, Suspect/Counterfeit, Electrical, Electronic, and Electromechanical Parts, including all applicable slash sheets. Pleora will specify the authenticity testing rules to be provided if Non Franchised parts are authorized and Pleora shall approve all such test reports. Authentication labs must possess ISO17025 accreditation and several other qualifications as per Pleora procedure for authentication QP-018-000-002 to an authorized registrar. Pleora must approved subject brokers.

The Counterfeit Parts Control Plan of both Franchised OEM and Independent Distributors (Brokers) shall be made available for review by Pleora upon request, and such plans can be shared with the Pleora customer and/or government agencies requesting such.

Any exceptions to the requirements of SAE AS6081 shall be made known to Pleora. Follow Pleora QP-018-000-002 for authenticity testing.



Franchised Distributors of electronic components shall certify that franchise agreements and/or written OEM/OCM reseller authorization is on file for all parts provided and available for single part audit upon pleora request. Every 3 years. Supplier shall notify Pleora Supply Chain Management when suspect counterfeit parts have been identified (reference Q110). The Supplier shall not deliver products that contain counterfeit parts, such as, but not limited to, software, material, and electrical/electronic/mechanical parts/assemblies. Any suspect or confirmed counterfeit parts delivered to Pleora are considered non-conforming material and shall be controlled per site requirements. Counterfeit parts shall not be returned to the Supplier and by Pleora and shall be reported through the GIDEP portal by the supplier and Pleora. Government - Industry Data Exchange Program (**GIDEP**) GIDEP access is limited to suppliers to the US Government, Canadian National Defense or Canadian Space Agency.

**Commented [LM1]:** See above Pleora responsibility for CEM AVL

**Q103 – Measuring & Test Equipment:** It is the seller's responsibility to ensure all equipment; including Customer Furnished Equipment (CFE), and Government Furnished Equipment (GFE), used to test and inspect Pleora supplied parts are maintained and traceable to the National Institute of Standards and Technology (NIST) or the requirements of the Canadian National Research Council (NRC). The calibration system used by the supplier shall be accredited in accordance with ISO 17025, General Requirements for the Competence of Testing and Calibration Laboratories and Z540.1, Requirements for the Calibration of Measuring and Test Equipment. Additionally, the supplier shall demonstrate compliance to ISO 10012 Measurement Management Systems – Requirements for Measurement Processes and Measuring Test Equipment.

**Exemption:**

Note: This requirement **does not apply to franchised distributors** of Original Component Manufacturers (OCM) selling unmodified commercial of the shelf components (e.g. capacitors, resistors, transistors etc. purchased to an OCM data sheet). Costs associated with Calibration of customer Furnished Equipment will be the responsibility of Pleora.

**Q104 – Control of Quality Records:** All records related to the manufacturing, testing and inspection of parts supplied to Pleora PO will be maintained for a minimum of seven (7) years from delivery and final payment, unless otherwise specified by Pleora. These records shall be accessible, upon request, to Pleora or to regulatory and statutory authorities. All records submitted are potentially subject to Pleora audit review and approval prior to acceptance.

**Exemption:**

This requirement **does not apply to franchised distributors** of Original Component Manufacturers parts (OCM) selling unmodified commercial of the shelf components (e.g. capacitors, resistors, transistors etc. purchased to an OCM data sheet). However, franchised distributors of COTS components are responsible for maintaining the receipt and lot quality records regarding the traceability of product back to the OCM/OEM as well as the records related to their response to the Pleora PO.

Pleora on an annual basis will pre-audit Purchase orders released to CEMs (contract Equipment Manufacturers) and or Franchised Distributors to submit two sample OEM

quality records. Pleora will request this from each franchised distributor through our CEM.

**Q105 – Supplier Material Review Board (MRB) Authority:** The Supplier does not have MRB authority to accept or repair nonconforming products relating to Buyer (Pleora) controlled drawings or specifications. Any nonconformance on such final deliverable product to the purchase order, buyer drawings, buyer specifications or applicable documents must be submitted to Pleora for approval prior to usage or shipment, unless otherwise documented on the Buyer's Purchase Order. PWB/CCA however may be repaired in compliance with IPC 7711/7721 process rework.

**Q106 – Shelf Life:** No materials will be shipped to Pleora with less than 80% of the full shelf-life as determined by the original manufacturer unless previously approved in writing by Pleora. The expiration dates shall be clearly recorded on the packaging and shipping documents. As a minimum, the material or documentation shall contain the following information:

Part Number  
Part Name  
Manufacturer Name  
Unit of Measure  
Lot/Batch Number  
Shelf Life Exp. Date  
Manufacture Date

Raw material suppliers or distributors used by CEM contracted by Pleora shall not deliver hardware or components older than 10 years without solderability testing conducted and approval from Pleora SCM and Quality Engineering. If materials fails Pleora Supply chain will provide disposition.

**Q107 – Moisture and Temperature Sensitive Material:** The Supplier must identify each shipment of temperature moisture sensitive material with the manufacture date, storage temperature and recommended shelf life. In addition to the normal identification requirements of name, type, size, lot/date code, and quantity identification, special handling conditions also must be recorded on the shipping document. MSL requirements shall conform with J-STD-033.

**Q108 and 109 reserved:**

**Q110 – Notification of Non-conformances Responsibility:** The Supplier shall inform Pleora immediately when there is a reason to suspect that products previously supplied may not be in accordance with the drawing(s), specification, or purchase order requirements. The Supplier shall promptly inform Pleora of any circumstance related to materials, manufacturing, processing, methods, design, etc. which may make a product susceptible to premature failure or otherwise place the safe operation of that product at risk. The notification shall describe the nature of the discovered anomaly, its applicability to Pleora part number(s), quantities affected and the probable impact to the proper function/performance of the item supplied. Supplier is responsible to notify Pleora if they

have received any corrective actions from the U.S. government or regulatory agencies (GIDEP) within 30 days.

**Q111 – Control of Lower-Tier Suppliers:** Supplier is responsible for the quality of all sub-tier products. The Supplier shall flow-down all applicable Pleora purchase order requirements, including, but not limited to Terms and Conditions and Quality Clauses and technical requirements to sub-tiers performing work involving this purchase order. Suppliers shall ensure robust Supply Chain with special process control and audits of supplier sub-tier special process such as Anodizing, Soldering and Painting at frequency risk established by the supplier internally. Frequently such special process suppliers issue certificates of compliance to a MIL spec or technical spec and the prime supplier to Pleora shall ensure those material and process specifications are compliant to standards based testing through audit plans. Any NADCAP approved special process supplier or lab that possesses ISO17025 or Calibration lab with ISO certification (See Cal section) requires no oversight or audits.

**Exemption:**

This requirement **does not apply to franchised distributors** of Original Component Manufacturers (OCM) selling unmodified commercial of the shelf components (e.g. capacitors, resistors, transistors etc. purchased to an OCM data sheet).

The supplier must notify Pleora in writing of their intention to use sub-tier suppliers for any processes that are considered "Special Processes". Pleora reserves the right to request at PO issuance to participate in the evaluation and qualification of the special process sub-tier supplier(s) and to inspect at the source any product or services not manufactured or performed within the primary supplier's facility.

The election to participate in these activities will be made by Pleora Supplier Quality and/or Quality Assurance.

**Exemption:**

This requirement **does not apply to franchised distributors** of Original Component Manufacturers (OCM) selling unmodified commercial of the shelf components (e.g. capacitors, resistors, transistors etc. purchased to an OCM data sheet).

**Q112 – Supplier Corrective Action Request:** A Supplier 8D Corrective Action Request (SCAR) shall be forwarded by Pleora to a Supplier when corrective action is required. Upon notification of the nonconformance, the supplier shall take immediate containment action and Pleora requests SCAR responses in 8D format. The supplier shall complete the analysis of cause and propose corrective action within ( 30) calendar days and shall immediately implement stock review and or containment to prevent similar deliveries of defective material to Pleora within 10 days. Suppliers may propose/negotiate a due date assigned to the SCAR and Pleora Quality shall revised as agreed. Failure to respond in a timely manner may result in the removal of the Supplier from the Approved Suppliers List. Upon notification of the nonconformance, shipments may be suspended until containment processes are enacted.

**Q113 – Certificate of Compliance, or Conformance (C of C):** Supplier shall submit with each shipment either on their packing list, or attachments, a certificate of conformance or certificate of compliance, which shall be dated and bear the signature



and title of an authorized Suppliers Quality Representative, stating that the materials and services furnished to Pleora are in conformance with the applicable requirements of the contract, drawings, and specifications.

Certification must include the following: The supplier or distributor full name and address; Pleora purchase order number; Pleora part number, revision as applicable, and as applicable, serial numbers; PO quantity; Quantity shipped; Lot / Date Code;

An example of an acceptable statement of Certificate of compliance/conformance is as follows: "This is to certify that all items noted are in conformance with the contract, drawings, specifications, and other applicable documentation, and that all process certifications, chemical and physical test reports are on file at this facility and are available for review by Pleora".

Unless specifically required per purchased order, the Supplier's lower-tier supplier/processor C of Cs shall be made available to Pleora for audit upon request. Franchised distributors are not required to furnish OEM certs but are responsible to ensure the materials are ROHS, REACH and conflict minerals compliant and meet JEDEC standards for EEE and mechanical parts.

However, the franchised distributor is still responsible for selling authentic conformant product for which they are franchised as well as maintaining the quality records related to product traceability back to the OCM. Declaration of conformity requires that Pleora provide the drawing, BOM, Standards and their applicable revision on the issued Purchase order.

**Approved Exemption:**

COTS Suppliers/distributors/OEM/OCM: The packing slip, as per JEDEC standards provided all packing slip requirements are followed, can be used in lieu of a C of C.

**Q114 – Parts Substitution:** The Seller shall not deliver substitute parts for the part specified on the purchase order line unless Pleora has approved the substitution in writing. For Buyer specified and controlled drawings and specifications, the Seller shall not use substitute or alternate component parts or subassemblies without receiving approval in writing. The supplier shall notify Pleora of any End of Life, Obsolescence or Form, Fit, or Function issues via a PCN framework.

**Q115 – Safety Data Sheet (SDS):** Operational Safety and Health Administration (OSHA) Global Harmonized System (GHS) (formerly MSDS and label requirements): Each purchased product shipment shall contain appropriate hazard and precautionary information using Safety Data Sheets (formerly MSDS), and labels shall be in accordance with GHS requirements.

**Q116 – Right of Access:** During the performance of the order, Pleora, its Customers, and/or a regulatory or statutory agency including Government Representatives, reserve the right to attend, review, and participate in audits of the Supplier's Quality System and associated manufacturing processes including inspection and testing of any work related to this contract. Pleora, its Customers, and/or regulatory or statutory authorities shall be afforded the right to verify at the supplier's premises (or Supplier's subcontracting

premises) that the supplier's product conforms to all specified requirements. Notice will be provided for access requests 2 weeks.

**Q117 – Mercury Prohibition/Asbestos:** The supplies furnished shall not contain functional mercury or Asbestos. External contamination by metallic mercury or mercury compounds shall be cause for rejection. The Supplier shall notify Pleora prior to proceeding with manufacturing or shipping, if the presence of mercury or mercury contamination is suspected. The Supplier shall perform a suitable test to verify the suspicion. The deliverable materials shall not come into direct contact with mercury containing devices employing only a single boundary of containment. A single boundary of containment is one which is not backed by a second seal or barrier to prevent contamination in the event of rupture of the primary seal or barrier. This requirement does not preclude the use of fluorescent lighting fixtures or fixtures employing mercury vapor lamps, which contain no more mercury per lumen than a comparable fluorescent lamp.

Where there is no suitable substitute material and performance, function, reliability, maintainability, life cycle or cost of the item would be adversely affected, the supplier shall notify Pleora in writing prior to production and identify the type, location and amount of material to be used, This notification shall include an evaluation of all alternatives considered.

**Q118 PFAS interim advisory/reporting: (NEW 2023)**

All component OEM's and raw material suppliers shall prepare to report \PFAS presence as an interim requirement. Pleora encourages OEM/suppliers to report all PFAS content via providers such as Silicon Experts, IHS or Source intelligence. Evolving EPA and EU and other global restrictions are proceeding to be established.

**Q119 – Pleora-Owned Tooling:** All tooling created against line items called out on this purchase order for Pleora custom part numbers or materials and services are the property of Pleora. Pleora requires all tooling creations/revisions to be submitted to Pleora for approval; unless authorized by Pleora, no modifications to tooling shall be made. In the event suppliers create their own custom tooling or manufacturing aids and jigs no approval is required. Pleora owned tooling at Seller's facility shall be controlled by a procedure, which, as a minimum, contains identification method, storage method, maintenance, and how tooling suggested changes are controlled.

The Seller shall take all reasonable steps necessary to perform regular maintenance on tooling as required. The Seller agrees to notify the Buyer immediately upon the discovery of any loss, damage or destruction of the tooling created.

**Q120 – Foreign Object Debris (FOD):** FOD prevention and Part Cleanliness: The Supplier shall conduct production processes appropriate to prevent, detect, and remove all FOD from product(s) during manufacture and provide parts clean and free of all FOD prior to shipment. FOD contamination will be cause for rejection of material. The Supplier shall conduct production processes appropriate to prevent, detect, and remove all FOD from product(s) during manufacture and provide parts clean and free of all FOD prior to shipment. FOD contamination will be cause for rejection of material. Suppliers are encouraged to use guidance for Foreign Object Damage (FOD) Prevention Programs using AS 9146, "Foreign Object Damage (FOD) Prevention Program –

Requirements for Aviation, Space, and Defense Organizations" or NAS 412, "Foreign Object Damage / Foreign Object Debris (FOD) Prevention" as a guideline. CEM are not required to run in a cleanroom environment, minor non-conductive dust and minor hair particles will not be considered FOD.

**Q121 – When requested on the P.O. by Pleora a First Article Inspection:** The Seller shall perform a First Article Inspection (FAI) on Buyer controlled drawings and specifications in accordance with AS9102 latest revision, if one of the following conditions apply: First time submission (part or new supplier); Revision change affecting form, fit, or function; A process change used to manufacture the part; Change in manufacturing location (facility); Subassemblies and/or detail parts where the seller has design authority shall have FAI requirements as defined on the statement of work or purchase order. If the purchase order line item specifies a buyer or seller designed product that has standard catalog commercial-off-the shelf hardware included at the subassembly levels, FAI is NOT required for the standard catalog or Commercial-Off-The-Shelf (COTS) parts/assemblies. Pleora may however request an AS9102 FAI and the supplier/OEM shall provide details regarding delivery to Pleora Supply chain. All first article inspections performed by the seller will be accompanied with a First Article Inspection Report (FAIR) AS9102 compliant and all other approved documentation and materials certs showing conformance to the contract, purchase order, drawing, or performance requirements specified by Pleora. Pleora will need to supply/update drawings to a format compatible with Industry recognized FAIR software tools (example DISCUS)

**Exemption:**

**Note: Unless specifically requested by Pleora this clause does not apply to purchase order lines that specify COTS Items.**

**Q122 – Notification of Changes:** The item(s) described on buyer drawing is the only configuration approved by Pleora. The seller shall provide written notification to the buyer prior to manufacturing of any changes from the following list: Manufacturing locations changes, Changes in key suppliers Quality Management System, Quality Management Personnel, Ownership & Executive Management Machines & Equipment changes.

**Exemption:**

**Note: This clause does not apply to purchase order lines that specify COTS Items. The JEDEC standards define and control COTS OEM/EEE parts suppliers and PCN change control.**

This includes but is not limited to supplier owned design items where design is created from buyer's specifications. The supplier is responsible to communicate this requirement to any and all sub-tiers. To submit change requests, contact Pleora SCM. Suppliers are encouraged to submit change requests to improve quality, reliability and process

capability, as well as reducing costs and lead- times. A documented request for change shall be submitted to the Pleora Buyer prior to plan implementation.

**Exemption:**

Note: This requirement does not apply to franchised distributors of Original Component Manufacturers (OCM) selling unmodified commercial of the shelf components (e.g. capacitors, resistors, transistors etc. purchased to an OCM data sheet).

However, the franchised distributor is requested to make available through his own methods OCM published change notices to ensure that Pleora is aware of product changes (PCN) that may affect fit, form, functions of the product. Additionally if the franchised distributor re-locates or encounters major Non conformances in quality management Pleora shall be informed within 10 days.

**Q123 – Rejection of product using Sample Inspections:** Pleora reserves the right to reject an entire lot if any workmanship defects or CEM deployed test methods should have detected the failures in a sample. Providing warranty provisions are not exceeded.

**Q124 – Drop-shipped Parts and Material:** When the seller is requested to drop-ship parts or material to a location, they will include a copy of the purchase order along with all required data and certifications specified by the purchase order's Quality Assurance Codes (QAC's / QC's). The seller will also send electronic copies of the packing slip and tracking information to the Pleora buyer at the time of shipment. The seller will ensure source inspection is performed or a waiver for such inspection is received from Pleora Quality prior to shipment if the purchase order contains a Quality Condition requiring source inspection.

The receiving organization of drop-shipped material will notify the Pleora buyer when parts and materials are received. The receiver will also verify the appropriate type and quantity of materials and ensure such materials are undamaged by handling and shipping. The receiver will immediately notify Pleora Buyer of any problems or concerns with received materials.

**Q201 – Solderability:** All parts that require soldering shall meet industry standards for hand and machine soldering. The supplier shall ensure compliance to IPC/EIA J-STD-002 Solderability Tests for Component Leads, Terminations, Lugs, Terminals and wires. Components that require tinning shall be tested and certified to IPC/EIA J-STD-002 Section 4.3.1 Test "E" Wetting Balance Test (Leaded Components); Section 4.3.2 Test "F" Wetting Balance Test (Leadless Components); and, IPC/EIA J-STD-013 Implementation of Ball Grid Array and Other High Density Technology Outlines for Ball Grid Arrays.

**Exemption:**

Note: This requirement does not apply to franchised distributors of Original Component Manufacturers (OCM) selling unmodified commercial of the shelf components (e.g. capacitors, resistors, transistors etc. purchased to an OCM data sheet).

However, franchised distributors shall ensure that adequate packaging in keeping with manufacturer and industry JEDEC standards protects the OCM's parts and their solderability (e.g. Electrostatic Discharge Control and Moisture Sensitive Device packaging controls).



**Q202 – Electrostatic Discharge (ESD) Control:** All electrostatic sensitive devices shall be packaged, marked and handled in compliance with ANSI/ESD S20.20 Protection of Electrical and Electronic Parts, Assemblies and Equipment.

**Q203 – Printed Wiring Boards (PWBs):** PWBs will comply with IPC-A-600 Acceptability of Printed Boards unless otherwise specified. Unless otherwise specified on the PO or drawing must meet J-STD-003 Solderability Test for PCBs. Tests for Printed Boards. PWBs shall be rejected if not all of the following are provided:  
Note: The supplier will default to IPC Class 2 requirements if the class is not otherwise specified on the PO or other Pleora supplied FAB notes and documentation.

**Exemption:**

All deliverables shall include traceability to date code/lot/number and panelization of the PWB manufactured. Boards to be individually MSL controlled and bagged, but NOT HEAT SEALED. Deliverable: Seller's written certification to applicable specification as stated on the drawing or Purchase Order, and applicable coupons.

One IPC coupon per lot is to be maintained by the supplier. (Reference Q104.) Individual PWBs, and its associated coupon, shall be marked and be traceable to the production lot which shall be marked with its own serial or production lot number as defined in the individual PWB drawing..

A copy of the lot inspection and acceptance data. A micro section report with the plated through hole copper thickness recorded for each inspection lot. Micro-section requirements are typically detailed in the FAB drawing by Pleora.

PWBs shipped to Pleora or their sub-tier CEM suppliers must be packaged with desiccant and a moisture indicator in Moisture Barrier Bags. Date codes on PWBs must not exceed 365 days before the date of shipment to Pleora or CEM suppliers.

Note: PWBs with date codes exceeding 365 days may be shipped to our sub-tier CEM with prior written approval. If the PWBs pass Solderability testing, the boards will be accepted.

The above requirements are subject to CEM modification.

**Interconnect Stress Test (IST) Requirement:** When applicable only Pleora shall include this requirement in the FAB notes drawings. Bare boards shall be tested according to IPC-TM-650, Method 2.6.26 from coupons as outlined in IPC-6012, and inspected to IPC-A-600. Test coupon design, will be specified by Pleora, and tested at the PWB supplier. PWB's shall not be shipped if IST fails.

**Exemption:**

Note: This clause does not apply to COTS third party CCA Items.

**Q204 – Third party OEM Circuit Card Assemblies (CCAs):** CCAs will comply with IPC-A-610 class II Acceptability of Electronic Assemblies unless otherwise specified. CCAs will comply with IPC-J-STD-001 Requirements for Soldered Electrical and Electronic assemblies unless otherwise specified. Note: The supplier will default to Class 2 requirements if the class is not otherwise specified on the drawing.

**Q205 – Wiring Harnesses:** Cables and wiring harnesses will comply with IPC/WHMA-A-620 Class II requirements and Acceptance for cable/Wire Harness Assemblies unless



otherwise specified. Cables and wiring harnesses must be 100% electrically tested per IPC/WHMA-A-620.

Note: The supplier will default to Class 2 requirements if the class is not otherwise specified on the PO or other Pleora supplied documents.

**Q206 – Rework/Repair Authorization of Circuit Card Assemblies:** Rework shall be in accordance with IPC-7711/7721 Rework, Modification and Repair of Electronic Assemblies. Repair shall be in accordance with IPC-7711/7721 Rework, Modification and Repair of Electronic Assemblies.

**Q207 – Moisture Sensitive Components:** The supplier shall ensure packaging and handling of all moisture sensitive components, as classified by, and in accordance with IPC/JEDEC J-STD-033 Standard for Handling, Packing, Shipping, and Use of Moisture/Re-flow Sensitive Surface Mount Devices and IPC/JEDEC J-STD-020 Moisture/Reflow Sensitivity Classification for Non-hermetic Solid State Surface Mount Devices, or other documented procedure.

**Q208 Q209 Reserved**

**Q210 – Special processes:** Are defined as any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered.

The Supplier shall ensure the associated equipment and laboratory used for these special processes is certified, as appropriate. It is highly recommended guidance to use only NADCAP approved special process suppliers although this is not mandatory. Process certifications are required for all special processes to be submitted to Pleora with the delivered item and shall be in accordance with C of C requirements, with the additional requirement of stating the process being certified. NADCAP certification is a nice to have and not mandatory. If the special process was outsourced, the cert shall originate from the contracting company.

The Supplier shall ensure that all personnel performing special processes such as welding, soldering, plating, non-destructive testing, etc. are certified to perform the special process in accordance with the requirements of the specification, the P.O., or any specifications referenced directly or indirectly therein. The Supplier shall ensure the associated equipment used for these processes is certified as appropriate. Supplier managed approval: The Seller shall establish a system to assure that special processes will be performed in accordance with the specification requirements, in adequate facilities, by competent personnel using proper procedures. When critical or special processes are performed outside the Seller's facility, it shall be the responsibility of the Seller to assure proper performance of all such processes, through surveys, certification, reviews and or testing, etc.

**Exemption:**

This flow-down is applicable to all sub-tier suppliers performing any special process with the exception COTS franchised distributors.

**Q211-220 reserved**

**Q221.2 – First Article Inspection – Source Inspection Required Upon request:**

Pleora QE team when required will contact the supplier with 10 calendar day advance notice to witness the 1st Article Inspection. The seller shall furnish, at no charge to Pleora all necessary facilities, personnel and equipment to perform tests as required by this order.

Note: This clause does not apply to COTS Items unless so quoted and requested.

**Q 221.3 Supplier Variance Requests:**

Product or Process supplier variance requests (SVR) may be requested by the supplier for any dimensional, specification, functional, or process related issues that cannot be mitigated and corrected prior to FAI submission or product shipments. Suppliers shall complete and submit an appropriate Supplier Variance Report to their respective Pleora Buyer for processing and disposition.

Supplier shall not ship product under an SVR without approval disposition unless notification is provided from the representative Pleora Buyer.

**Q308 – Calibration Sub-contractor Requirements:**

The item(s) on this purchase order shall be calibrated in accordance with the requirements of ANSI/NCSL Z540-3 Requirements for the Calibration of Measuring and Test Equipment or ISO 10012-1 Quality Assurance Requirements for Measuring Equipment and traceable to the National Institute of Standards and Technology (NIST) or Canadian National Research council or other nationally accredited standards facility. The subcontracting, assigning, or transferring of any activities covered by this purchase order to another supplier facility/location or sub-supplier shall be approved by Pleora site's Quality Department.

The following information is to be submitted Certification of Calibration and/ or Record of Calibration shall contain the following information:

Title of document. Supplier's name and address. Pleora name and address.

Description and unique identification of the item calibrated. Condition of the item calibrated if not operational. Date calibration performed. Identification of the procedure(s) used. Identification of the calibration service provider's equipment, standards used and last calibration date. Environmental conditions (temperature and humidity). Test Report detailing As-Found and As-Left conditions. Reference to any independent Out-Of-Tolerance Condition Report. Statement that supplier equipment and reference standards utilized to calibrate are traceable to NIST/NRCAN.

Attach the calibration sticker to the face area of any stackable equipment where the sticker will not impede visibility or functionality. Sticker must indicate the next calibration due date at a minimum. Calibration seals should be employed.

**Q309 – As-Built List (ABL):** This clause applies to third party CCA or system suppliers.

The Supplier shall track and record the as-built configuration by serial number including serialized lower level subassemblies. An ABL including the part number, serial number (when applicable), lot control numbers (when applicable), quantities, completion date and ship-to location shall be provided with the shipment.

**Q310 – Flow Plan: Manufacturing, Inspection, and Test:** (applicable to CEM suppliers only) The Supplier shall provide a flow plan (any format: diagram, traveler, etc.) which documents the sequence, location, and description of manufacturing processes,

inspections, and tests. The Flow Plan shall be submitted for Pleora approval within thirty (30) days prior to use when requested by Pleora.

**Exemptions:**

This clause does not apply to OEM/OCM or franchised distribution.

**Q311 – Circuit Card Assembly (Pleora Designed CCA) Test:** The Supplier shall perform IPC sampling functional or electrical testing on the CCAs as required by the manufacturing package to identify any manufacturing defects prior to delivery. Pass/fail results by lot and panel number as applicable shall be provided quarterly in DPMO formats and be available for audit upon request.

**Q312 – Data Deliverables:** General. When requested by Pleora the Supplier shall provide a copy of any data deliverable for each item in the supplier's format or as authorized by a representative by the supplier's Quality function with each shipment.

**Q312.1 – Data Deliverables:** ATP-Pleora when required shall request Acceptance Test Procedure/Test Data Sheets: This ATP and any subsequent changes must be submitted for approval thirty (30) days prior to testing deliverable end items.

**QC 313-318 reserved.**

**Q319 – Source Inspection at Seller's Facility:** When required Pleora will inform the supplier that parts and materials, software supplied to this PO require source inspection by Pleora or representative prior to shipment. This requirement must not be bypassed without written authorization from the Pleora buyer. The Supplier shall notify Pleora at least ten (10) days in advance of the date material is expected to be ready for inspection. Mandatory Hold Points (MHP) may be required. Pleora may designate MHP defining operations in the Supplier's manufacturing and/or inspection sequence that are required to be witnessed by Pleora or its Customer prior to completion by the Supplier. This activity shall be performed in such a manner to not disrupt normal processing and shall be conducted on a non- interference basis. If any inspection or test is made by Pleora, and/or Pleora customers, of a Supplier or a subcontractor, the Supplier without additional charge, shall provide a safe place to work and reasonable facilities and assistance for the convenience of Pleora, and/or its Customer(s) in the performance of their duties. If Pleora and/or Pleora Customer(s) requires that an inspection or test is made at a point other than at the premises of the Supplier or a subcontractor, it shall be at the expense of the Pleora except as otherwise provided in the PO; Provided that, in case of rejection, Pleora shall not be liable for any reduction in value of samples used in connection with such inspection or test

**Q320 – Machined Parts:** When the following parts, characteristics or processes are required by drawings, the supplier shall comply with the mechanical drawings or fabrication notes provided as following additional instructions:

**Q321-336 Reserved**

**Q337 – Supplier Process Control:** These requirements apply to suppliers, and to their sub-tier suppliers. The Contractor **should** utilize Statistical Process Control (SPC)

techniques as a preferred methodology to ensure production hardware quality and conformity. SPC should be used to measure, analyze, and eliminate sources of variations detrimental to product quality. SPC should be administered by the contractor in areas of highest potential benefit and/or on Critical Characteristics flowed down in drawings. The contractor should prepare a Process Control Plan which will be utilized during production of the articles ordered under this contract. The program should contain the following as a minimum: Process Flow Diagram: This is a schematic representation of the process flow and the sources of variations of equipment, materials, methods and people from the start to the end of the suppliers' process. The flow diagram should show the test and inspection points as well as those characteristics that are to be monitored and/or statistically controlled (SPC). Key Characteristics: Key characteristics are those product characteristics that are considered to have a significant impact on the form, fit or function of the part and/or influence customer perception of the end product. Key characteristics are those characteristics that are significantly impacted by the method of manufacture or have a significant impact on subsequent operations. Key characteristics should be identified on the Pleora drawing as features with symbol "Δ" with an accompanying notation that identifies the feature as a critical characteristic or with the symbol (CTQs based on Geometric Dimensioning & Tolerancing techniques).

**Q338 -Process Capability:** On key characteristics where Statistical Process Control has or will be applied, the supplier shall complete a process capability study for each key characteristic.

**Q339 – SPC: CEM Supplier** shall develop and maintain an SPC Program on suggested process CTQ like reflow zone temperatures, Solder Paste Inspection SPI, Conformal Coat deposition tests using glass sample plates, Complex repair IRSA/Airvac temperature controls and others.

**Q340-241 Reserved**

**Q342 – Lot Control:** Products supplied under this Contract shall be identified by the manufacturing lot, or batch number. If it is not practical to stamp individual products due to size or shape, the lot or batch number shall be located on identifying tags. All accompanying documents, such as packing list or certifications, shall include lot control number.

**Q343-346 Reserved.**

**Q347 – Obsolescence:** Suppliers are required to inform Pleora of component availability risk discovered at any time during the performance of this contract. Notice, Impact, and recommendations are expected to be communicated no more than 10 days from discovery through the Buyer or equivalent method. The supplier shall notify pleora of any End of Life, Obsolescence or Form, Fit, or Function issues

**Q348 – Restriction of Hazardous Substances (RoHS):** The processes used and product supplied to this purchase order shall be RoHS compliant per the EU directive on the restriction of the use of certain hazardous substances, by not exceeding the specified limits of those hazardous substances, as contained in the latest directive and decisions (revisions). A statement of RoHS compliance is required for all deliveries. For

CEM's Pleora owns the assessment of ROHS certification on AVL controlled items as compliance decisions should be made as a design/selection output.

**Q349 – REACH/Conflict Minerals:** The supplier shall select materials and processes so that Substances of Very High Concern (SVHC) above the acceptable maximum threshold according to the latest version of Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration,

Evaluation, Authorization and Restriction of Chemicals (REACH) are not used or incorporated into the product. If the products and/or materials furnished hereunder contain any REACH/SVHC substances, Seller must: Assure that those REACH/SVHC substances are properly registered (as defined in the COMMISSION REGULATION (EC) No 552/2009); Provide the relevant Safety Data Sheets (SDS) sheets for those substances.

**Conflict Minerals:**

**Our suppliers shall comply with conflict minerals policy:**

Pleora is committed to sourcing components and materials from companies that share our values regarding respect for human rights, integrity, and environmental responsibility. This includes supporting the Dodd-Frank Wall Street Reform and Consumer Protection Act as it relates to Conflict Minerals (Section 1502), designed to eliminate support of illegal and unethical actions in the Democratic Republic of Congo, and the adjoining countries (i.e. Covered Countries) associated with the mining of 3TG.

Conflict Minerals refers specifically to 3TG minerals and their derivatives:

- Cassiterite Ore: from which Tin (Sn) is extracted;
- Columbine-Tantalite: Ore from which Tantalum (Ta) is extracted;
- Wolframite Ore: from which Tungsten (W) is extracted;
- Gold (Au): Rare metal found in a native (pure) form and obtained as a byproduct of other mining operations.

Although Pleora is not listed on the US Securities and Exchange Commission, we are diligently working with our suppliers to ensure our products are manufactured within a socially responsible supply chain and supporting the conflict minerals objective. For CEM Pleora owns the AVL and CMRT assessment.

**Q350 – Ozone Depleting Substances:** Supplier shall also label products or materials which contain or are manufactured with ozone- depleting substances. "Ozone depleting substance", as used in this clause , means any substance the Environment Protection Agency designates in 40CFR Part 82 as Class I (including, but not limited to chlorofluorocarbons, halons, tetrachloride, and methyl chloroform), or Class II (including, but not limited to hydro chlorofluorocarbons). Warning Contains (or manufactured with, if applicable) \* , a substance(s) which harm(s) public health and environment by

destroying ozone in the upper atmosphere. "Ozone depleting substance" means any substance the Environment Protection Agency designates in 40CFR Part 82 as Class I (including, but not limited to chlorofluorocarbons, halons, tetrachloride, and methyl chloroform), Class II (including, but not limited to hydro chlorofluorocarbons) or any similar substance designated in European regulation (EC) No. 1005/2009 concerning ozone depleting substances ("ODS"). \* The Contractor shall insert the name of the substance(s). Regional governmental regulatory bodies will be followed.

**Q353 – GIDEP:** The contractor shall participate in the Government-Industry Data Exchange Program (GIDEP) in accordance with the requirements of the GIDEP S0300-BT-PRO-010 and S0300-BU-GYD-010, available from the GIDEP Operations Center, P.O. Box 8000, Corona, California 91718-8000. The contractor shall review all GIDEP ALERTS, GIDEP SAFE-ALERTS, GIDEP Problem Advisories and GIDEP Agency Action Notices to determine if they affect the contractor's products/services provided to the customer.

For those that affect the program, the contractor shall take action to eliminate or mitigate any Negative effect to an acceptable level. The contractor shall generate the appropriate failure experience data report(s) (GIDEP ALERT, GIDEP SAFE-ALERT, GIDEP Problem Advisory) whenever failed or nonconforming items, available to other buyers, are discovered during the course of the contract.

Suppliers shall not deliver product that contains material that are subject to a GIDEP alert. Pleora may submit as well.

**QC354 – Software Development Plan (SDP): (not applicable to off-the-shelf software products):** The supplier shall establish a software development program consistent with Pleora contract/engineering SOW requirements as defined herein. The supplier shall ensure that the software development program plan provides independent internal peer assessment of software products and identifies activities which include all phases of the software lifecycle.

The supplier shall document and implement procedures relating to the establishment, maintenance, and control / production of software products. The procedures shall address revision control, build, testing, release, media reproduction, archiving, environmental control, and virus protection. Processes shall be defined and implemented in order to ensure business continuity (disaster recovery), intellectual property security (including virus protection, backups, and appropriate access controls).

The supplier shall document and implement a software management process which addresses: configuration identification, baseline and traceability, change control, peer review, problem reporting and resolution, archive, retrieval, and release. Preferred suppliers should be registered to ISO 90003 or equivalent internationally recognized SW Quality Management System.

**Q355 – Software Configuration Management:** The seller shall employ a configuration management (CM) system that ensures all versions of all software deliverables to Pleora are maintained and reproducible. This CM system shall ensure that all work products are defined, and shall track and control changes to those work products.



**Q356 – Software Reviews:** All software deliverables (defined in the SDP) are subject to review and approval by Pleora R&D. A software requirements review shall occur prior to commencement of software design activity. A design review shall occur prior to commencement of implementation (coding) activity. An acceptance and approval review shall occur prior to final deliverable to Pleora. The seller shall support and participate in all reviews.

**Q357 – Software Audits:** The Seller's quality system and all software development activities are subject to periodic and random audits by the Quality Engineering and Software Engineering teams at Pleora.