

Quality Clauses

The intent of this form is to define the obligatory contractual purchasing clause codes of Paragon Space Development Corporation (“Paragon”). A supplier’s acceptance of a purchase order is their agreement and acceptance to the flow down requirements and applicable clauses identified on the individual purchase order as well as Paragon’s general terms and conditions. To obtain the latest version of Paragon’s purchasing quality clauses or general terms and conditions, please visit our website www.paragonsdc.com.

Safety, Quality, and Mission Assurance (SQMA)

PQ-101 Paragon Space Development Corp. Quality Acceptance (For Paragon Internal Use Only)

Articles ordered or products reviewed under this Purchase Order Contract must be routed through the Paragon SQMA department and are subject to final quality inspection and acceptance.

PQ-102 Documentation Acceptance (Drop Shipment)

Articles ordered under this Purchase Order/Contract are to be drop shipped to a destination other than a Paragon facility. Final acceptance remains contingent on the submittal and approval of the quality data.

PQ-103 100% Inspection Documentation Submittal

The supplier shall perform 100% inspection of all dimensions for each end item to ensure conformance with the applicable drawing and other Purchase Order/Contract requirements. Objective evidence shall be submitted and include:

- Records of actual readings taken during the inspection of each part
- Dimension and tolerance noted traceable back to a sequential numerical annotated drawing/work authorization document (ballooned drawing)
- The calibrated device used to inspect each feature, traceable back to a calibration record in accordance with National Institute of Standards & Technology (NIST)
- Signature/stamp validating/verifying compliance by authorized quality representative

PQ-104 Submittal of Inspection / Test Records

The supplier is responsible for performing or having performed all inspection and tests necessary to substantiate that the supplies or services furnished under this Purchase Order/Contract conforms to the Purchase Order/Contract requirements. Records demonstrating compliance with this provision must be created, retained, and delivered. The test report shall show quantitative test results and tolerances for values measured including documentation of the tooling identification number for traceability and shall include information to demonstrate conformance to requirements of the engineering drawing/procurement specification or Purchase Order/Contract.

Actual test reports referencing:

- Purchase Order/Contract Number.
- supplier's name.
- address and/or independent laboratories' name and address.
- part number.
- part name.
- serial number if applicable.
- date and run time if applicable.

These reports shall be validated by an authorized Supplier's Representative, via an inspection stamp or signature, title, and date.

PQ-105 AS9102 First Article Inspection Requirement – Deliverable Report

First Article Inspection (FAI) shall be performed and provided by the supplier in accordance with the latest requirements of AS9102. When documenting the FAI, the supplier may use the forms contained within AS9102 or their equivalent if the forms contain all the information required by AS9102.

When a partial or re-accomplished FAI is performed as required by AS9102; supplier will include copy of such FAI report with every shipment.

Examples of Re-Accomplished FAI Requirements (but not limited to):

- Change in process.
- Change in equipment.
- Change in location.
- Change in business ownership.
- New Revision.
- Lapse in production of two (2) years.

PQ-106 Certificate of Conformance

The supplier shall certify that the part(s), assemblies, subassemblies, or detail parts delivered conforms to the Purchase Order/Contract requirements (e.g., manufactured, inspected, and/or tested in accordance with the engineering drawing, or specification) and that supporting documentation is on file. When applicable, the true manufacturers, lot, heat, date code, and/or serial number must appear on the certification.

The Certificate of Conformance shall contain the following:

- Paragon's Purchase Order/Contract Number Date of Shipment
- Part Number
- Name and address of manufacturing or processing location.
- Manufacturer's lot, heat, batch, date code, and/or serial number (if applicable)
- Quantity and unit of measurement (each, box, case, gallons, etc.)
- A statement that the materials furnished are in conformance with all applicable requirements.
- Stating that supporting documents are on file and will be made available to Paragon or Government Representatives upon request.
- Signature and title of the supplier's representative.

An example of an acceptable statement of Certification of Conformance is as follows:

"This is to certify that all items noted are in conformance with the Purchase Order/Contract, drawings, specification 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 Paragon."

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When the items on this Purchase Order/Contract are supplied by a distributor, a copy of the manufacturer's certification or the distributor's certification stating compliance and the manufacturer's name and address shall be provided.

PQ-107 Lot Traceability for Commercial off the Shelf (COTS) Items

The manufacturer's test report(s) (e.g., mill test reports, special processes, Non-Destructive Testing, etc.) shall state a lot of material furnished has been tested, inspected, and found to follow the applicable material specifications. The test report shall list the specifications to which the material has been tested and/or inspected and the identification of the material lot to which it applies.

When the material specification requires quantitative limits for chemical, mechanical, or physical properties, the test report shall contain the actual test and/or inspection values obtained. For certain mill products (except castings, polymers, rubbers, composites, and proprietary materials), certifications for chemistry may indicate, compliance within an allowed range. Certifications for physical properties shall show actual values.

When the vendor supplies an altered material from that which is produced by a raw material manufacturer, the supplier shall submit all pre and post conversion chemical / physical test reports.

Hardware shall be supplied with certifications containing the following items:

- Paragon's Purchase Order/Contract Number
- Lot/Batch Number Traceable to Raw Material Certification
- Part Number
- Raw Material Certifications/Mill Chemical/Physical Test Reports/Statement of Compliance to applicable specifications
- Special Process Certification
- Statement of Approved Distributor (if applicable)

The supplier shall review their supplier certifications for accuracy and compliance to the specification and/or standards.

PQ-108 Raw Material/Physical/Chemical Test Reports

A physical/chemical test report for raw material shall be submitted to Paragon. The report shall indicate the percentage of each element that makes up the chemical composition and the physical properties of the raw material and a statement of conformance to the applicable specification. It shall contain the following.

- Processing Suppliers name and address
- Name/number of the specification with which the material is complying.
- The melt/heat lot number or other traceable designation (i.e., Purchase Order/Contract, invoice number, etc.)
- Country of Origin/Melt

PQ-109 Nondestructive Test (NDT) Certification

The supplier shall include with each shipment a certificate for NDT performed, the certification shall contain the following information:

- Processing suppliers name and address

- Paragon's Purchase Order / Contract Number
- Date of Inspection
- Material or item identification/traceability (quantity, part number, heat lot number) of parts tested by part number.
- Specification or other requirement defining the NDT acceptance / rejection criteria.
- Authorized representative and NDT certification level
- A copy of the inspector's certification (if applicable)
- Clearly defined inspection results (accept/reject)
- Test Instrument data used in the NDT process traceable back to NIST standards.

A record containing the procedures or techniques used and actual results shall remain on file for seven years or more (as required by Purchase Order/Contract). The record must remain on file for seven years or more after shipment to Paragon and shall be furnished to Paragon upon request.

PQ-110 Statement of Work (SOW)

Articles defined in this Purchase Order/Contract are subject to additional requirements per the defined and delivered SOW, which must be met to achieve compliance to Purchase Order/Contract requirements. Articles will not be accepted by Paragon if supplier fails to comply with the requirements of the SOW. Contact the cognizant Paragon buyer if you do not have a copy of the SOW.

FOR PARAGON USE ONLY: Purchase Order/Contract with this clause shall include the SOW document number input on each line item the SOW applies to.

PQ-111 Paragon/Customer/Government Source Inspection

Paragon and/or Government source inspection is required. The inspection will take place prior to shipment of the articles from the supplier's facility. Suppliers based in the United States of America shall notify the assigned Paragon Quality Product Assurance Representative a minimum of five (5) working days in advance of the time the articles or materials are ready for inspection or test so the appropriate inspection plan can be coordinated. International Suppliers shall notify Paragon Quality Product Assurance Representative within ten (10) working days in advance of the time the articles or materials are ready for inspection or test so the appropriate inspection plan can be coordinated. The supplier shall make available to the Paragon/Government Quality Representative all applicable drawings, specifications, procedures, SOW, Paragon Purchase Order/Contract, test software, and changes thereto, related to inspection and/or test equipment, and such other information as may be required to satisfactorily perform the inspections and tests required under this Purchase Order/Contract. Paragon acceptance of supplies will not relieve the supplier from responsibility nor impose liability on Paragon for nonconforming supplies.

PQ-112 Certificate of Calibration

Calibration shall be performed in accordance with ANSI/NCSL Z540.3 or ISO 17025. The supplier shall review all their supplier certifications for accuracy and compliance to the specifications and/or standards. When not specified on the purchase order, calibrated tolerance shall be considered acceptable to manufactures recommendation or industry standard for the device.

Calibration Certifications shall include the following:

- Paragon's Purchase Order/Contract Number.
- Paragon Equipment Identification (PEID) Number.
- Date Calibration was performed.

- Item Serial Number.
- Model Number.
- As Found/As Left Data.
- Applicable specifications/standard to which the calibration was performed.
- Equipment used to calibrate and the calibration due date (as applicable)
-equipment used to calibrate to be traceable back to NIST as required

PQ-113 Chemical Safety Data Sheet (SDS)

Supplier shall provide a reproducible copy of the SDS with each shipment of any chemical and for all hazardous or regulated materials. All hazardous materials shall be packaged and shipped in accordance with the Code of Federal Regulation (CFR) 49. In the case of certain hazardous or regulated materials the detailed specification shall take precedence over, or in concurrence with, this requirement.

When the physical shipment arrives Shipping/Receiving Department personnel shall notify the Hazardous Communication Technician to be inspected before releasing to inventory.

PQ-114 Software Quality Assurance

The supplier shall plan, develop, and implement a Software Quality Assurance (SQA) program which includes documented practices and procedures to assure compliance with all software requirements of this Purchase Order/Contract. The supplier shall identify organizational responsibilities and authorities for the execution of the program and the event critical to the program's implementation.

The supplier shall provide Paragon with access to supplier facilities to review all software products and activities required to determine compliance with Purchase Order/Contract. Paragon's review shall not replace supplier's own evaluation or otherwise relieve the supplier of the responsibility to furnish acceptable software and associated documentation.

**PQ-115 Acquisition of Measuring and Monitoring Devices
 (For Paragon Internal Use Only)**

Articles or products ordered under this Purchase Order Contract must be routed through the Paragon SQMA department upon receipt and are subject to final quality inspection and acceptance. Devices purchased with this clause are to have a PEID asset number issued and tracked through the calibration and preventative maintenance system.

Manufacturing

PQ-201 Age Control/Shelf Life

Each individual container must be marked with the materials useful shelf life, the date of manufacture, and the date of expiration. A minimum of 75% of the products shelf life must be remaining upon receipt to Paragon. The supplier shall review their supplier certifications for accuracy and compliance to the specification and/or standards.

Certification must include but not limited to:

- Paragon's Purchase Order/Contract Number.

- Lot/Batch Number.
- Part Number.
- Manufacture's name.
- Applicable specifications and standards.
- Clearly defined date of manufacture/expiration.

PQ-202 Limited Operating Life Items

Supplier shall collect and maintain records of operating time or cycles for all items designated as Limited Operating Life items by Customer's drawings or specifications. Records will include the total elapsed time or cycle for each operation, cumulative time or cycles starting with the first functional test, and remaining time or cycles.

PQ-203 Additive Manufacturing (AM) Control

Seller and seller's sub-tier suppliers shall maintain documented information for the manufacture and Additive Manufacturing (AM) feed stock, product, and/or post-processing methods. Documented information shall include all inspection and testing methods as well as results. The substitution of one AM process for another AM process is prohibited without prior Paragon written approval. The substitution of AM for traditional manufacturing techniques is prohibited. The substitution of traditional manufacturing techniques for AM is likewise prohibited.

Feedstock Requirements:

- Feedstock lots shall not be combined or commingled on a single AM build without prior Paragon approval for the specific part. Where feedstock lots are combined, the combined lot shall be identified with its own lot number that is traceable to individual feedstock lots.
- Recycle or reuse of feedstock is prohibited without prior Paragon approval. If approved, recycle or reuse shall be documented within the manufacturing record.
- Feedstock shall be stored in environmentally controlled locations and in accordance with all conditions specified by the feedstock supplier.
- Feedstock shall be suitable controlled throughout the manufacturing process to ensure traceability to the manufacturer's original Certificate of Analysis.

PQ-204 Manned Space Flight Requirements

Articles ordered under this Purchase Order/Contract are for use in Manned Space Flight. Materials, manufacturing, and workmanship of the highest quality standards are essential to astronaut safety. If able, supply the desired items of a quality which is higher than that of the items specified or proposed, suppliers are requested to bring this fact to the immediate attention of the purchasing agent. This clause will be inserted in all subcontracts and purchase orders for such items down to the lowest tier.

Materials and Process

PQ-301 Special Process Certification

Special Process: A method controlled by a contractually required specification in which the product undergoes a physical, chemical, or metallurgical transformation. Conformance to the specification cannot be readily verified by normal inspection methods.

Examples of special processes include (but not limited to): heat treat, coatings, chemical conversion coatings, anodizing, passivation, welding, soldering, brazing, dye penetrant, etc.

A special process certification of conformance shall be provided with each shipment of item(s) delivered on this purchase order/contract.

Coating shall be graded as > 9 in accordance with ASTM D1654, Standard Test method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments, and not exhibit blistering, film failure, cracking, or substrate corrosion after exposure.

Special Process Certifications may be in supplier format and shall include the following:

- Paragon's Purchase Order/Contract Number
- Part Number(s)/Revision
- Quantity
- Date of processing
- Serial and/or lot Numbers, of the hardware processed (if applicable, internal job number acceptable)
- Material process specification & revision
- A certification stating the special process was performed per the applicable drawing/specification requirements.
- Where applicable vendor shall provide coating/plating thickness/grade per ASTM D1654.
- Processing Suppliers name and address(es) including any sub-tier suppliers.
- certification must be signed and dated by the supplier's authorized representative and/or the processor attesting to the acceptance of the processes performed to the required specification(s).

PQ-302 Specialty Metals

Certification must state the materials supplied meet the requirements of [Defense FAR Supplement \(DFARS\) 252-225-7014](#).

Specialty metals means "(i) Steel— (A) Where the maximum alloy content exceeds one or more of the following limits: manganese, 1.65 percent; silicon, 0.60 percent; or copper, 0.60 percent; or (B) That contains more than 0.25 percent of any of the following elements: aluminum, chromium, cobalt, columbium, molybdenum, nickel, titanium, tungsten, or vanadium; (ii) Metal alloys consisting of nickel, iron-nickel, and cobalt base alloys containing a total of other alloying metals (except iron) in excess of 10 percent; (iii) Titanium and titanium alloys; or (iv) Zirconium and zirconium base alloys. The Contractor agrees that any specialty metals incorporated in articles delivered under this contract will be melted in the United States, its possessions, or Puerto Rico

PQ-303 Restriction of Hazardous Substances (RoHS) Compliant -

A material declaration shall be provided, stating that materials delivered against this order are RoHS Compliant (may be included on the Certificate of Conformance). RoHS restricted materials include lead, mercury, cadmium, hexavalent, chromium, polybrominated diphenyl's (PBB), or polybrominated diphenyl ethers (PBDE).

The RoHS shall include, at a minimum the following:

- Paragon's Purchase Order Number
- Part Number
- Part Revision
- Serial Number (if applicable)
- Lot/Batch Number (if applicable)

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- Quantity

Electrical

PQ-401 Electronic and Electrical Equipment (EEE) Parts Procurements

All parts listed in MIL-STD-975 (NASA) and/or the Purchase Order/Contract SOW shall be procured from manufacturers/suppliers/distributors listed in the applicable Qualified Products List for the procured part(s). EEE parts shall be tested and handled in accordance with the Purchase Order/Contract SOW. Pre-Acceptance testing of EEE parts shall be accomplished by a Paragon approved, independent testing laboratory in accordance with the associated part(s) specification and MIL-STD-975 (NASA). All test results/reports shall accompany standard EEE parts shipped to Paragon.

All EEE parts procured from the supplier, or its sub-tier supply base shall have been manufactured within three (3) years from the delivery date for Plastic Encapsulated Microcircuits (PEMs) and five (5) years for all others. This shall include all sub-assemblies of the article being procured.

PQ-402 Electrostatic Discharge (ESD) protection Program and Packaging

The supplier shall document and implement an ESD Control Program in accordance with ANSI/ESD S20.20, ESD Association Standard for the Development of an ESD Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically initiated Explosive Devices).

Parts must be properly packaged and identified as required in ANSI/ESD S20.20. All goods will be placed in conductive or static-dissipative packages, tubes, carriers, conductive bags, etc., for shipment. The packaging must be clearly labeled to indicate that it contains electrostatic sensitive goods. Electrical parts that may be used or shipped in conjunction with ESD sensitive parts shall be treated as ESD sensitive.

PQ-403 Aerospace and High Performance (AHP) Electronic Systems Containing Lead-Free Solder

This clause identifies the requirement of an applications on high performance electronic systems. The supplier shall execute the terms of this Purchase Order/Contract in compliance to GEIA-STD-0005-2 (Standard for Mitigating the Effects of Tin Whiskers in Aerospace and High-Performance Electronic Systems).

Purchasing

PQ-501 Quality Management System (QMS)

The supplier shall establish, document, and maintain a QMS that complies with the latest version requirements of ISO9001 or AS9100, and is certified by a recognized certified accreditation body, or a QMS approved by Paragon.

PQ-502 Sub-Tier Suppliers AS9100/ISO9001/AS9120/NADCAP

The supplier shall not subcontract work on any article to be supplied under the Paragon Purchase Order/Contract unless the supplier's company is of a 3rd party certification which is nationally or

globally recognized such as AS9100/ISO9001/AS9120/NADCAP certified or without prior written approval from Paragon. A vendor must be certified for each special and/or controlled process it performs.

PQ-503 Buy American

Materials procured under this Purchase Order/Contract are subject to the requirements of the [Buy American Act FAR 52.225](#).

PQ-504 Defense Priorities and Allocation System (DPAS) Regulations

This is a rated Subcontract certified for national defense and the Subcontractor shall follow all the requirements of the Defense Priorities and Allocation System (DPAS) regulations (15 CFR 700). Written acceptance or rejection of DX rated orders must be received in ten (10) working days and fifteen (15) working days for DO rated orders. Orders which have PQ-504 applied must include the specific priority rating, if not present on the order, contact buyer directly.

PQ-505 Record Retention

Supplier shall maintain documented evidence of product quality throughout the manufacturing process, allowing for analysis and corrective action if needed, while also complying with industry regulations and customer requirements. The specified clause below shall determine the period of retention required.

- PQ-505a - 5 Years*
- PQ-505b - 7 Years*
- PQ-505c - 10 Years*
- PQ-505d - 15 Years*
- PQ-505e - 20 Years*

Specific records may include:

- Inspection reports.
- Test results.
- Calibration record.
- Non-conformance reports.
- Corrective action records.
- Manufacturing process data.
- Material traceability records.