

## QUALITY ASSURANCE CLAUSES

APPLICABLE QUALITY ASSURANCE CLAUSES ARE REFERENCED ON THE PURCHASE ORDER

Clause	Description	Revision Date
<b>CLAUSE 1</b>	<b>QUALITY SYSTEM REQUIREMENTS</b>	<b>10/10/18</b>
	<ul style="list-style-type: none"> <li>A) Sampling procedures, when used, must comply with ANSI/ASQC Z1.4 or ANSI/ASQC Z1.9 (latest revision) or equivalent and must have an Accept on Zero plans.</li> <li>B) The supplier must maintain a “Lot Control System” and traceability records as applicable.</li> <li>C) The Suppliers Quality System must be in compliance with ISO 9001 and/ or AS 9100</li> <li>D) The supplier is required to notify ABT immediately if non-conforming product was inadvertently shipped to ABT.</li> <li>E) The supplier is not allowed to ship non-conforming product dispositioned as USE AS IS or repaired without prior approval from ABT.</li> <li>F) The Supplier is required to flow down to all sub- tier suppliers all applicable requirements in the purchasing documents, including Key Characteristics on applicable drawing(s).</li> <li>G) Verification of Purchased material by the supplier at a sub tier supplier’s facility does not absolve them from providing acceptable material. Such material must be submitted and accepted to standard inspections and testing by ABT.</li> </ul>	
<b>CLAUSE 2</b>	<b>CERTIFICATION</b>	<b>04/04/18</b>
	<p>The supplier shall provide with each shipment a Certificate of Conformance signed with an original signature and title of signer. Certifications must show total quantity in the shipment, lot codes or date codes, part numbers and revisions for each part number. Certifications from Distributors must also show original manufacturer’s name. Unless otherwise specified by Customer drawings or specifications, copies of the original manufacturer’s certification shall be furnished upon request by ABT or ABT customers. In addition, the supplier must certify to A through H below <b><i>when applicable</i></b>.</p> <ul style="list-style-type: none"> <li>A) Special processes are required (heat treat, welding, etc.), the certification must reflect the applicable specification.</li> <li>B) Special inspection processes are required (magnetic particle/penetrate inspection, x ray, etc.) (1) The certification <b>MUST</b> indicate the quantity in the lot, quantity inspected and the inspection results or (2) A test report with the applicable information must accompany the certification. NOTE: X ray film when applicable must be forwarded to ABT for evaluation.</li> <li>C) Chemical and or mechanical properties when shipping raw materials such as ferrous and non-ferrous metals, aluminum castings, rubber and adhesives are required (1) The certification must reflect chemical analysis and/or results of the testing for mechanical properties or (2) The information must be on a separate report accompanying the certification.</li> <li>D) Drawings that have Supplementary Quality Assurance Provisions/Quality Assurance Requirements (SQAP/QAR). (1) The certification requirements of the SQAP/QAR will be met and the test data will be supplied with each shipment or (2) The certification will have a statement, such as, “The material supplied in this shipment has met the requirements of the SQAP/QAR (number), all applicable data is on file and will be made available upon request.</li> <li>E) Certification requires proof of qualification for special processes performed by qualified personnel.</li> <li>F) Country of origin and Harmonized Tariff Schedule (HTS) Codes must be provided for all shipments regardless of ship destinations. Use of CBP Form 434 or supplier’s internal form is acceptable as long as it complies with CBP Form 434.</li> <li>G) When grade 5, grade 8 or Metric Standard (10.9) hex head and socket head fasteners are supplied, original Certificate of Analysis shall be furnished with each shipment that documents the actual material chemistry, core hardness, or tensile strength and finish.</li> <li>H) Painted items must have a Certificate of Analysis that reflects the part number of the material, manufacture and batch number of the material used in the process. Supplier must also supply record of the paint thickness.</li> </ul>	
<b>CLAUSE 3</b>	<b>RIGHT TO ACCESS BY ABT GOVERNMENT/CUSTOMER/REGULATORY AUTHORITIES</b>	<b>07/27/16</b>
	<p>All material covered by this purchase order is subject to surveillance inspection by ABT, GOVERNMENT, CUSTOMER, REGULATORY AUTHORITIES. This requirement may include surveillance of the product or the supplier’s Quality System, procedures and facilities. The supplier shall provide access to all facilities and equipment, supply data and perform test as required by the applicable drawings, specifications and inspection instructions under the surveillance of ABT Quality Assurance Representative, GOVERNMENT/CUSTOMER and REGULATORY AUTHORITIES, as requested. The surveillance inspection will be requested in advance in writing by ABT.</p>	
<b>CLAUSE 4</b>	<b>SOURCE INSPECTION (ON SITE)</b>	<b>07/27/16</b>

Material covered by this purchase order is subject to inspection at the supplier's facility by ABT prior to shipment. The supplier shall furnish the necessary facilities and equipment, supply data, and perform tests as required by the applicable drawings, specifications and inspection instructions under the surveillance of ABT Quality Assurance Representative, as requested. A five day notice must be given to ABT buyer as to when the material will be ready for inspection to allow for scheduling of source inspection.

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**CLAUSE 5 FIRST PIECE INSPECTION**

**09/09/16**

First Piece (Qualification) is required on the first lot produced against this Purchase Order. This inspection will be performed by the supplier in accordance with AS9102 current revision. All supporting documentation including raw material certification and scored drawing must be supplied with the first shipment. The first piece inspection must meet all the requirements of the purchase order. Once the first lot is accepted the supplier shall make NO CHANGES to the process or material used without written authorization from ABT. Supplier must record all actual measurements and information must be recorded in the same unit of measure (i.e. Imperial or Metric) as the drawing.

This First Piece Inspection will need to be resubmitted if any of the following events occurs.

- 1) A lapse in production for more than 2 years.
- 2) Supplier changes sub-tier suppliers, processes, inspection methods, location of suppliers facility, tooling or materials that can potentially affect form fit or function.
- 3) A natural or manmade event which may affect the manufacturing process.
- 4) A change in design affecting the form, fit, or function of the part.
- 5) A change in numerical control program or translation to another media that can potentially affect form, fit, or function.

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**CLAUSE 6 DIMENSIONAL/WELD SAMPLES**

**07/27/16**

- A) Dimensional sample of the material produced against this purchase order is required prior to production. Inspection of this sample will be arranged by the ABT buyer.
- B) Forgings, castings or molding: A sample from each cavity (unless otherwise specified) will be produced and inspected by the supplier. The dimensional report, along with the sample(s) will be submitted to ABT Quality Assurance for inspection and approval. The production run will not commence until approval has been given by ABT.
- C) Welded Items: Items that contain welds are required to be qualified prior to production; a qualification package must be presented 2 weeks prior to producing and shall contain a minimum of the following items.
  - 1) Weld Procedure Specification (WPS).
  - 2) Procedure Qualification Record (PQR) with accompanying test results.
  - 3) Welder Qualification Records.
  - 4) Weld map, detailing which WPS(s) apply to which weld joints. Assemblies welded to MIL Specs, AWS or SD-X Specs may require weld samples to be submitted. One weld sample for each weld, samples must be identified by the part number and for the joint location. Notification to ABT buyer is required prior to the fabrication of the samples.

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**CLAUSE 7 SUPPLIER FURNISHED INSPECTION AND TEST DATA**

**07/27/16**

A copy of the supplier's actual recorded inspection and test results for the material produced against this purchase order must be provided to ABT for the product delivered for each shipment. The data must comply with the requirements of the applicable drawing and/or specification. The data recorded must have positive identification with the product being supplied with that shipment. Unless otherwise specified on drawing, this clause applies only during First Piece Inspections.

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**CLAUSE 8 TOOL, GAGE AND MEASURING EQUIPMENT**

**07/27/16**

The supplier shall maintain a system that will ensure adequate controls over all tools, gages, measuring and testing equipment that will be used for product acceptance in accordance with ISO 10012-1 or equivalent (this includes a system for periodic recall for calibrations) Calibrations must be traceable to the National Institute of Standards and Technology (NIST) NOTE tools, gages measuring and testing equipment supplied by ABT must be maintained in accordance with that system as well.

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**CLAUSE 9 GOVERNMENT/CUSTOMER SOURCE INSPECTION (ON SITE INSPECTION)**

**07/27/16**

When Government or Customer Source Inspection is required, it will be so stated in the body of the purchase order, along with the pertinent instructions.

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**CLAUSE 10 GOVERNMENT/CUSTOMER/REGULATORY AUTHORITIES SURVEILLANCE**

**07/27/16**

During the performance of this order the supplier's Quality System and manufacturing processes are subject to review verification and analysis by authorized Government/Customer Representatives and Regulatory Authorities.

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**CLAUSE 11 NO CHANGE CLAUSE 07/27/16**

Supplier shall make no change in design, manufacturing or assembly processes or source of supply, after approval of the first production test item or after acceptance of the first completed test item without the written approval of the buyer.

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**CLAUSE 12 SHELF LIFE MATERIALS 07/27/16**

The Date of Manufacture and Shelf Life Expiration Date shall be clearly marked on the item and / or packaging adjacent to batch / lot number identification. Eighty percent of the Shelf Life is required upon receipt.

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**CLAUSE 13 MATERIAL CERTIFICATION 07/27/16**

The supplier shall furnish certification for the materials used in the process. In addition, supplier's Certificate of Conformance will reflect products were manufactured/processed using this material. Unless otherwise specified on drawing this clause applies only during First Piece Inspections.

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**CLAUSE 14 LOT/DATE CODE CONTROL 07/27/16**

Components must be supplied in one lot. Components being supplied with multiple date codes must have a date code within a 12 month period. The date code shall be recorded on the certificate of conformance.

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**CLAUSE 15 QUALITY RECORDS 09/05/18**

- A) Quality records shall be maintained in a manner to ensure they remain legible, readily identifiable, and are easily retrievable. Quality Records shall be maintained for a period no less than calendar year + 10 years from the date of purchase. Said records shall be available for review by ABT, ABT's Customers, and/or any applicable regulatory authorities upon request. Disposal of records shall be done in a manner that shall prevent reconstruction.
- B) The commodities/technical data shared with the supplier are controlled under the United States Export Regulations and may not be exported to a foreign person, either in the U.S. or abroad, without the proper authorization of the U.S. Department of State or the U.S. Department of Commerce. Please contact ABT for commodity classification and jurisdiction.

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**CLAUSE 16 FOREIGN MILITARY FINANCING FUNDED 07/27/16**

All material covered by this purchase order is subject to US Government requirements regarding Foreign Military Financing (FMF) Funding, including:

- A) Authorized representatives of the Government of the United States shall have access to and the right to examine, for a period of three (3) years following the final payment to the Supplier, any of the subcontractor's directly pertinent books, documents, papers, or other records involving transactions related to the subcontract.
- B) All material covered by this purchase order is subject to the Certification requirements specified on PRF-003, the ABT Supplier Certification & Agreement for Contracts Involving Foreign Military Financing.

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**CLAUSE 17 PACKAGING 07/27/16**

ESD sensitive items shall be packaged in accordance with EIA-STD-625 and J-STD-033 guidelines.

- A) Moisture sensitive non-hermetic solid state Surface Mount Devices (SMD) shall be handled, packaged, labeled and shipped in accordance with IPC/JEDEC J-STD-020 and IPC/JEDEC J-STD-033. The applicable Moisture Sensitivity Level (MSL) as defined by the component manufacturer applies.
- B) Surface Mount Devices must be shipped in machine ready packages. Examples tape & reel, matrix trays and tubes. No bulk shipments allowed.

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**CLAUSE 18 OBSOLESCENCE/END OF LIFE 07/27/16**

The supplier of the product delivered on this purchase order shall notify Amphenol Borisch Technologies Purchasing Department if one or any combinations of the following conditions exist:

- A) Products delivered are known to have Obsolescence or End of Life Issues.
- B) The product delivered is currently no longer in production.
- C) Products delivered are nearing the end of their life cycle and are to be discontinued from manufacturing/processing within the next five (5) years.

**CLAUSE 19 DFARS 252.225-7014**

**06/26/17**

Items furnished with a purchase order that contain a DPAS rating must comply with DFARS 252.225 Preference for Domestic Specialty Metals. Certification must reflect the material is complaint to DFAR 252.225-7014 and additional certifications must be furnished to show where the metals were obtained.

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**CLAUSE 20 Honeywell SPOC 002 Manual Requirement**

**11/25/19**

The supplier shall adhere to the following SPOC requirements that can be found in the Honeywell Supplemental Purchase Order Conditions Manual Level 002: Sections 1.0 and 2.0, 100, 106, 124, 127, 128, 129, 130, 140, 142, 149, 154, 165, 200, 239, 267, 354, 418, 419, 420

Suppliers may access the manual via the Aerospace Supplier Portal (ASP): <https://scc.honeywell.com/> (It may be necessary to copy this link into your browser depending on internet browser type and revision)

The Below SPOC references are provided as reference as the current SPOC Release at scc.honeywell.com shall take precedence.

**SPOC 1.7 Language Requirements**

All quality records, data or correspondence to Honeywell Aerospace are required to be in the language of the Honeywell facility placing the purchase order, or in the English language, as agreed on between the supplier and the Honeywell facility. The Supplier shall maintain an English Language translation of its Quality Manual. Upon request, all supplier data related to furnished product must be translated to English and made available. If the supplier does not perform this service, translation fees will be debited to the Supplier.

**SPOC 1.11 Quality Records**

Access to Records

Honeywell/ABT reserves the right to access records at the PO holder, or its sub-tiers involved in the manufacture of Honeywell/ABT product. The Supplier shall make the records available within 48 hours, or 2 business days, of the request for access.

Records Storage

Records must be stored in an area which meets all local Fire and Life Safety Codes that prevents loss, damage or deterioration. All data stored by electronic means shall be secure with back- up procedures, and audited to verify the integrity of the data.

Disposition of Records

The supplier shall contact the ABT Buyer for disposition of records upon termination of business activity.

Corrections

Changes or corrections to records, regardless of the media, shall be made as follows: draw a single line through the old data, enter the correct data, date, and apply stamp or initials or signature of individual making the correction. No erasures, covering, or "white-out" allowed.

Record Retention

Records of product/material manufacture, test, inspection (including radiographic film), calibration and acceptance/certification, are considered quality records and shall be retained as follows

Records in Support of	Minimum Retention Period <sup>1</sup>
Radiographic Film, Digitized Film or Digital Radiographs	11 years
Non-traceable, non-serialized parts	11 years
Traceable parts as identified on the Honeywell drawing or purchase order	Indefinitely <sup>2</sup>
Serialized parts as identified on the Honeywell drawing or purchase order	Indefinitely <sup>2</sup>
Critical parts as identified on the Honeywell drawing	Indefinitely <sup>2</sup>
Distributor standard off the shelf product	7 years

1. MINIMUM retention periods, beginning with the date the order was completed. In the case where a specification, contract or purchase order requires a greater retention period, the more stringent requirement will apply.
2. A lengthy period of time specified in the law that cannot be determined in advance. **Indefinitely** does not mean that the records must be retained permanently. Records having a retention period of “Indefinitely” should be reviewed periodically to determine if they have surpassed their useful legal and business life. Destruction of records with Indefinite retention period must be authorized by Honeywell.
3. Quality records shall be all records as defined within the AS9100 Standard, section 4.2.4.

**SPOC 1.12 – Prohibited Practices**

Honeywell prohibits the following practices:

- a. Unauthorized Repair - Repairs (by welding, brazing, soldering, or the use of adhesives) of parts damaged or found faulty in the fabrication process; repairing holes in castings, forgings or other materials by plugging or bushing without authorization from Buyer.
- b. Unauthorized Processing - Addition, revision, or deletion of thermal, chemical, or electrochemical processes in manufacturing when processes are subject to specification control by Buyer.
- c. Improper Material Submittal - Submission of material having known defects/problems to Buyer without notification.
- d. Improper Material Re-submittal - Resubmission of material to Buyer without material being clearly identified as resubmitted material.
- e. Unauthorized Material and Information Transfer – No supplier shall buy, sell, trade, or transfer Honeywell owned/supplied drawings, data, material, parts, devices, assemblies or end equipment for purposes other than the performance of Honeywell business, without prior written approval.
- f. Reclaimed Material – No supplier shall use reclaimed material without prior written approval from the Buyer.

**SPOC 1.15 – Honeywell Consigned Material**

The Supplier shall not return unused consigned material without authorization from the Honeywell Buyer.

Nonconforming Consigned Material If authorized for return, the material shall be labeled “Return of Consigned Materials, Do Not Route to Stores” on the outside of the shipping container (BARCODE LABELS ARE NOT TO BE USED). The Supplier shall identify part number and dash number, and the reason for return on the packing slip

**SPOC 1.16 - Business Continuity Management**

The Supplier shall ensure their Company has robust Business Continuity Management (BCM) processes in place that include disaster recovery and preparedness.

**Business Continuity Plan**

The Supplier shall document a Business Continuity Plan which details what the Company would do in the event that key People, Processes or Technology was to become unavailable. This Business Continuity Plan shall be applicable, including but not limited to, natural disasters, labor disputes, lockouts, evictions, power or systems failures, hazardous spills, fire, floods, explosions, sabotage, riots, war or other civil disturbances, and voluntary or involuntary compliance with any laws, regulations, or requirements of any government authorities.

General information regarding how to develop a Business Continuity Plan can be found on the internet. Some helpful website links are listed below:

<http://www.disaster-recovery-guide.com/>

[http://www.disasterrecovery.org/disaster\\_recovery.html](http://www.disasterrecovery.org/disaster_recovery.html)

### **Sub-Tiers**

The Supplier's BCM Plan should also include planned actions to mitigate any disruptions in supply from critical sub-tiers.

### **Audit Rights**

Honeywell/ABT reserves the right to review the Supplier's BCM Plan at any time to assess their maturity and continued development.

### SPOC 1.17 Crisis Management

The Supplier must use best efforts to notify Honeywell/ABT or Buyer within 24hrs if they experience an incident, including but not limited to those listed in SPOC 1.16 above that may impact their ability to make their scheduled shipments to Honeywell.

#### Sub-Tiers

Supplier must notify Honeywell/ABT or Buyer within 24hrs of receiving notification that any of their critical sub-tiers have experienced an incident, including but not limited to those listed in SPOC 1.16 above, that may impact their ability to provide materials or components to the Supplier that are required in the manufacture or assembly of Honeywell product.

#### Disaster Recovery

In the event of a supply interruption, Honeywell/ABT may engage the Supplier to collaborate on recovery. Supplier is expected to fully support any such engagement until the delivery schedule to Honeywell/ABT is recovered.

### SPOC 106 – General Vision Requirements:

Individuals who inspect material for final acceptance must have:

Color Vision Eye Examination every 12 months

Near-Vision Eye Examination every 12 months

The Individual(s) must meet the minimum standards in one eye, corrected with glasses or not corrected:

#### Color Vision Eye Examination

Examples of acceptable testing methods include: Pseudochromatic plates, Dvorine, Ishihara, Richmond, Farnsworth lantern, Keystone Orthoscope, Titmus vision tester, Titmus II Vision Tester, Titmus 2 Vision Tester. There are standard definitions of what is a pass/fail on these tests that should be followed.

#### Near-Vision Eye Examination

Examples of acceptable testing methods include: , 'E' eye examination chart or international equivalent, Snellen 14/18 or better, 20/25 or better, Jaeger type 1, Ortho-Rated 8 or equivalent method.\*

A medical professional must perform the eye examinations (eye clinic, occupational health clinic, onsite health clinic or medical department).

Note: \*\* For any the personnel who fail the eye exam, the following criteria applies:

- 1) Any individual failing any of the passing criteria of the color vision or near vision testing defined herein may not approve final acceptance of Honeywell products.
- 2) Any individual failing any portion of the eye exam may take action to correct the vision problem, and may repeat the eye examination.
- 3) Individuals who, after taking action to correct a vision problem, and subsequently failing the exam 2 additional times (failed 3 times sequentially) may not repeat the test, and may not approve Honeywell products.

#### NDT Requirements

Refer to the requirements of Supplier Instructions 165.7 as referenced in SPOC 165

## Chemical Processing Requirements\*\*

Must be in accordance with Color Vision and Near-Vision criteria above except for etch inspection personnel (Nital, Blue Etch, White Spot etc...) near vision shall be Jaeger type 2 minimum or Ortho-Rated 8 at 12 inches (305 mm) or 20/30 Snellen, in one eye minimum. The use of the Tumbling E near vision acuity test in accordance with ISO 18490 is considered acceptable as well.

## Welding Requirements\*\*

Shall be in accordance with Color Vision and Near-Vision criteria above except near vision shall be in accordance with the requirements of AWS D17.1 and be administered by a medically qualified facility.

## Record Requirements

The records of the eye examinations shall be maintained by the Supplier.

### SPOC 162 – Electronic and Electrical Components with Lead (Pb) and Pb-free Finishes

#### SPOC 165 – Approved Sources for Controlled Processes

Controlled process specifications are listed on the Honeywell Approved Processing Source List (APSL) and suppliers shall use only Honeywell approved sources except for:

Suppliers with design responsibility for hardware supplied to Honeywell may use their own approved process suppliers provided the Honeywell supplier complies with the following:

Design and Development must be an element in their Quality Management System (Ref AS9100 Section 7.3)

Supplier Control must be an element in their Quality Management System (Ref AS9100 Section 7.4)

This SPOC does not apply to:

Industry standard parts such as AN, NAS, MS etc.

The APSL is the list of Controlled Process Specifications and Approved Sources to perform those processes. Sources performing Controlled Special Processes shall be approved by Honeywell and listed on the web based Aerospace Unified APSL. The Supplier shall periodically review the APSL to ensure sources are not expired and to independently verify the source's capability and quality specific to the Supplier's product.

To determine if a specification or standard is controlled, go to the Honeywell Aero Supplier Portal: <https://scc.honeywell.com>, from the HASP menu, select Applications > APSL and refer to step 4 on the Must Read Instructions.

#### HPS1011:

PB / Bare Board External Lab Verification – upon completion of the suppliers internal microsection analysis, the PB / bare board supplier shall send one set of coupons per lot out for verification along with the supplier's certificate of analysis for verification by an outside lab to the following requirements per Honeywell specification HPS1011:

- g. The external lab shall use at the minimum an IPC-A-600 certified inspector for verification of the requirements of this clause
- h. The external lab shall inspect the micro section coupon at 100X, referee at 200X for visual defects including, but is not limited to; void, cracks, resin recession, etc.
- i. The external lab shall measure the copper / plating thickness and compare the results against the bare board supplier's certificate of analysis and the PB drawing requirements
- j. The external lab shall reference the Honeywell HPS1011 specification for further analysis required
- k. Upon completion of the analysis, the PB / bare board supplier shall send the internal supplier and external lab data along with the delivery of the product to ABT