

1.0 Policy

It is the policy of the Procurement Group of PulseR execute Purchase Orders for products and services that have an effect on the quality of PulseR finished goods according to defined policies and procedures.

2.0 Purpose

To define additional customer processes beyond those stated in the PulseR Supplier Quality Manual that ensures that purchased product conforms to additional SPOC requirements that are flowed down on Honeywell Purchase Orders.

3.0 Scope

PulseR procurement group - Limited to the procurement of all raw material for Honeywell and its subcontractors, were the Honeywell Purchase Order and SPOC flow down requirements define the approved supplier, material, and purchasing requirements.

4.0 References

- 4.1 Honeywell SPOC Manual – Latest Revision
- 4.2 SPOC 128 – Characteristic Accountability
- 4.3 SPOC 140 – Certification of Conformance / Shipping Declaration Document / Packing Slip Requirements.
- 4.4 SPOC 165 – Approved Sources for Controlled Processes.
- 4.5 PQM 4.026.110 – General Purchasing Process and Procedure
- 4.6 PQM 4.026.112 – PulseR Supplier Quality Requirements Manual

5.0 Definitions

- 5.1 SPOC – Supplemental Purchase Order Conditions (SPOC) Manual
- 5.2 DIP – Detailed Inspection Procedure
- 5.3 SCA – Source Certifying Agent

6.0 Specific SPOC Requirements and Processes

- 6.1 SPOC 128 - Characteristic Accountability
Detailed Inspection Plan (DIP)

A detailed inspection plan (DIP) shall be documented to record the inspection plan for a part to ensure that all engineering drawing characteristics and notes are subject to inspection or control by appropriate methods. DIPs are documented:

- On a form that meets the intent of the sample / supplied PulseR DIP / FAIR form.
- To the same measured system as the drawing (standard-to-standard, metric-to-metric).
- With ALL dimensional characteristics and all engineering drawings being accurately accounted for.

The DIP may be used as a record, or may reference supporting records such as routings, receiving or in-process inspection sheets, final test/inspection records, or statistical data. The DIP or supporting records shall have measurements or results for all PulseR drawing characteristics. Results shall be recorded as actual or ranges of data if taken with a variable gage, or attribute if taken with an attribute gage (Attribute gaging may be used when variable gaging is not feasible).

The DIP shall define the manufacturing operation at which the characteristic is inspected and the inspection method used, including the type of tooling/gaging instrumentation used. Characteristics that are subject to change after in-process acceptance (e.g., growth, shrinkage, and/or distortion) must be re-inspected prior to final acceptance.

DIPs for products which contain characteristics that are “tool controlled” (castings, molded parts, etc...) may contain less than 100% of the PulseR drawing characteristics provided the following conditions are met:

- A number of characteristics shall be selected as “control” dimensions. Control dimensions shall be of quantity and type such that inspection of these characteristics will give the supplier enough information (based on tool construction, assembly, process variation, and drawing tolerance) to assure that all other drawing characteristics are in conformance.
- The supplier shall submit a plan which clearly documents for all design characteristics the proposed control dimension.
- The supplier shall obtain written approval from a PulseR Quality representative (QE or Quality Manager) for its suggested DIP control dimensions.

- The control dimensions are then subjected to the sampling requirements detailed below.

Note: Alternate characteristic accountability plans which do not meet the above requirements must be approved by the Quality Manager of the PulseR site issuing the PO prior to manufacturing.

GENERAL

Product acceptance must be 100% for all characteristics, unless the sampling plans specified here-in are used.

When using sampling plans:

- Samples must be randomly selected and representative of the population.
- The lot must be homogeneous and produced under essentially the same conditions at the same time.
- Each inspection characteristic must be inspected on every part in the sample lot.
- Critical characteristics must be inspected 100% on every part in the sample lot.
- Critical characteristics must be inspected 100% regardless of the sampling plan used.
- Adequate records of all sampling results must be maintained.

CLASSIFICATION OF CHARACTERISTICS

The following general characteristic terminology will be used for all PulseR sampling plans. Where not specifically noted, the characteristic and remarks will apply universally. Dimensional tolerances stated below are the total tolerance width (+/- .005 = .010 total tolerance)

- a. Critical characteristics – Inspected to 100 percent
 - i. Structural Characteristics (SC)
 - ii. Hardness Characteristics (HC)
 - iii. Any characteristic defined as Critical.
- b. Major characteristics – Inspected to 97 percent AQL
 - i. Dimensional total tolerances equal to 0.010 or less.
 - ii. Any characteristic classified as Major

- iii. Angular characteristics tolerance of +/- 0 degrees, 30 minutes.
- iv. Surface Finish Characteristics 32 finish or less
- c. Minor Characteristic – Inspected to 92 percent AQL
 - i. Dimensional total tolerances equal or greater than 0.0101 inch
 - ii. All characteristics not classified.
- d. Non-Linear Characteristics – Inspected to 100 percent
 - i. All notes, materials, processes, functional testing, part marking and traceability related evidence.

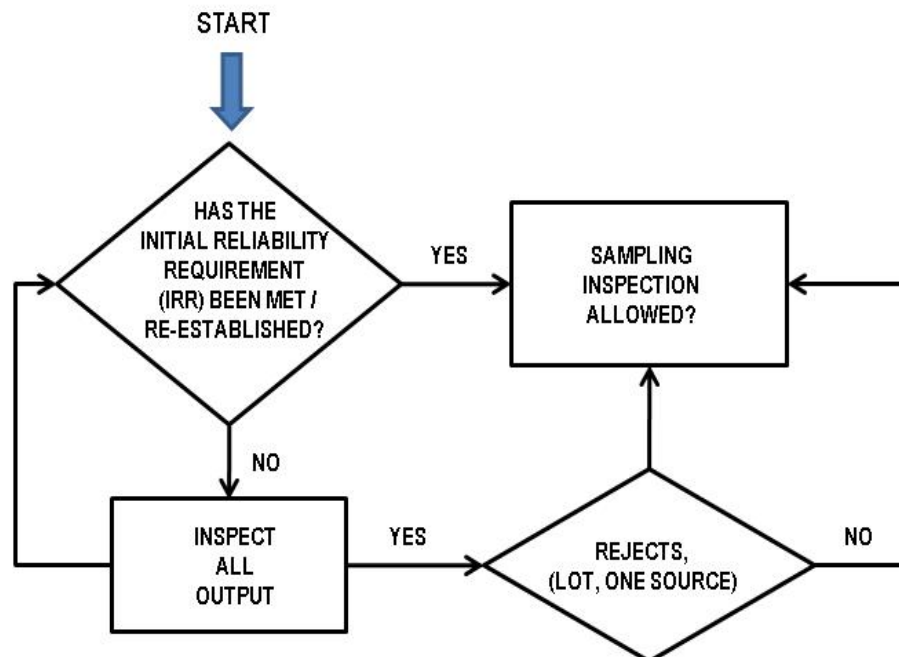
SAMPLING INSPECTION PROCESS OVERVIEW

The sampling inspection process has three basic steps:

Step-1 – First, the quality or “Initial Reliability Requirement” of the item under consideration must be determined to ensure that it is good enough to justify a sampling inspection.

Step 2 – once the IRR has been met, lots may be sampled in accordance with the corresponding sampling plans.

Step 3 – If a reject occurs (at any point), 100% inspection requirement must be reinstated until the IRR is once again met. Once satisfied, lot sampling can continue.



Lot Sampling Inspection Flow Diagram

ESTABLISHING THE INITIAL RELIABILITY REQUIREMENT (IRR)

The Initial Reliability Requirement (IRR) is the degree of confidence that a characteristic will successfully function or the expected rate at which defect free characteristics are produced.

Characteristics	Critical	Major	Minor
IRR	100 %	97 %	92 %
Establishing Inspection of a Characteristic	100% Inspection	76 Accepted in a row	28 Accepted in a row

- First time production must establish IRR level prior to sampling.
- If sampling inspection or a reported Honeywell nonconformance results in even one (1) reject (C=0), the lot shall be rejected and 100% inspected. Any reject of any characteristic resets the IRR for the complete part unless the supplier petitions and receives relief from an authorized Honeywell representative (FQE, site SQE, or Site QA Manager, etc.). Rejects coded for administrative issues that do not affect form, fit, or function of the part will not affect the IRR.
- Once a non-conformity is detected, the IRR must then be re-established on the next consecutive production lot(s) prior to resuming of Lot or Continuous sampling methodologies.
- The Quality Manager of the site issuing the purchase order may relax the 100 percent sampling requirement while establishing (or re-establishing the IRR if the measurement is determined to be not practical or places an undue burden on the supplier to perform. This approval must be obtained in writing and be maintained as part of the suppliers sampling inspection records.

SAMPLING REQUIREMENTS

CRITICAL CHARACTERISTICS

Critical Characteristics	IRR = 100% Reliability
Lot Size	Sample Size
ALL	100% - No exceptions.

MAJOR CHARACTERISTICS

Characteristic	IRR = 97% Reliability
Lot Size(s)	Sample Size(s)
Up to 9	All
10	9
11	10
12 to 13	11
14 to 15	12
16 to 17	13
18 to 20	14
21 to 24	15
25 to 29	16
30 to 35	17
36 to 44	18
45 to 57	19
58 to 78	20
79 to 118	21
119 to 233	22
234 to 2536	23
2537 and up.	24

MINOR CHARACTERISTICS

Minor Characteristics	IRR = 92% Reliability
Lot Size(s)	Sample Size(s)
Up to 5	All
6 to 7	5
8 to 11	6
12 to 19	7
20 to 53	8
54 and up.	9

NON-LINEAR CHARACTERISTICS

Inspected to 100 percent

6.2 SPOC 140 – Certification of Conformance / Shipping Declaration Document / Packing Slip Requirements

6.2.1 The Supplier is responsible for maintaining and supplying certification documentation to provide objective evidence of meeting drawing, specifications, technical data, or purchase order requirements.

6.2.2 A Certificate of Conformance (COC) shall be provided with each shipment. The COC can be a separate document, or it can be included as part of the shipping declaration/packing slip text.

GENERAL REQUIREMENTS

The following data/information shall be included on each COC.

- Supplier Name and Address
- Statement that parts conform to the purchase order requirements
- PO number
- Original Manufacturer' name and part number (when the supplier is not the manufacturer)
- Part number and revision letter
- Quantity shipped (listed quantities to be broken out by lot, and also totaled)
- Date and authorized signature of a quality representative or company official
- Technical data and revision

When required by drawing or technical data:

- Lot numbers
- Serial numbers
- Required and actual hardness values
- Date code(s)
- RMRA number (if applicable)
- Date of shipment

LIMITED SHELF LIFE REQUIREMENTS

The following information shall be included on each COC for shelf life limited product or material as applicable to the specification.

- Environmental storage conditions
- Date of manufacture and/or cure date (month/year or quarter/year)
- Lot or batch number
- Shelf life expiration date

Note: If there is no Expiration Date or Shelf Life required, indicate such (examples include “None”, “No Expiration Date”, etc.)

CERTIFICATION PACKAGE REQUIREMENTS

The following items, when applicable to the drawing, specifications, technical data or purchase order, shall be maintained and made available by the supplier unless otherwise specified on the purchase order to submit with shipment.

- Fixed process certification
- Partial shipment release sheet
- Material certifications
- Controlled process certifications
- Test reports
- MESA agreement
- FAIR package
- Functional test data sheets
- PulseR shipper
- Manufacturer’s Certificate of Conformance
- RMRA

Notes:

1. Each inspection lot must be listed as a separate line item along with evidence of electrical testing to the applicable specification as required.
2. Certifications shall include the name of the process source, specifications and revision letters used. Actual physical and chemical process and heat numbers as applicable Certifications of Conformance (COC) must clearly state conformance to all specifications in their entirety. This includes imbedded specifications that contain specific acceptance testing criteria, additional processing requirements, and/or any specific requirements that pertain to hardware approval or acceptance.

3. Hardness values shall be obtained from a representative sample of the lot for each material. Second verification shall be performed and documented by qualified personnel impartial of the original verification. The verification may be performed internal or external.
 - Hardness condition specified on the print with no further heat treat performed: Verify hardness at the receipt of the raw material.
 - Heat treat performed during manufacture: Verify hardness twice after final heat treatment and prior to shipment.
4. Quantitative results of testing required by the applicable specification.
5. Minimum required information to be listed on the shipping declaration and or packing slip if these documents are separate and not part of the COC.

In additions to the conditions above:

- Distributors must also include a Certification of Conformance (DCOC)
- Distributors shall include all documents that indicate full traceability (chain of custody) to the original manufacturer for each lot in a shipment
- If the shipment contains multiple manufactured lots, each lot shall be segregated and identified to maintain traceability in the shipment,
- Documentation showing clear traceability for the part number ordered, up to and including shipment to PulseR must be included for each lot in the shipment.
- All required documentation shall be completely legible, and reproducible. PulseR IMI will review documentation for compliance to requirements, legibility, and reproducibility by electronic scanning and/or copying.

BULK RAW MATERIAL

Unless specified, purchased bulk raw material (sheet, strip, plate, wire, rod, bar, tubing, solder, powder, paint, oil, fluids, etc.) shall be supplied to the latest procurement specification issue. Material certified to a previous specification issue and of the proper type, grade, or class called for by the engineering drawing or technical data, may be used until depleted, unless restricted by the superseding specification revision.

Certifications for material shall include specification number and revision letter applicable to each lot of material.

6.3 SPOC - 165 – Approved Sources for Controlled Processes
Special Process Requirements

This section defines a process that applies when the engineering drawing refers to a controlled process specification or a controlled process specification that is sub-tiered within a specification referred to on the engineering drawing. This applies exclusively to material purchased where the end use is for product supplied to Honeywell.

Controlled process specifications are those specifications listed on the Honeywell Approved Processing Source List (APSL) that can be obtained from the PulseR Purchasing Agent or directly from Honeywell.

This applies to all processes with the exception to processes that are performed on hardware within the suppliers design envelope, or that cannot be traced back to the top-level PulseR drawing, either on the face of the drawing, through a referenced controlled specification, or in SAP PLM.

When the drawing and/or purchase order calls out the Honeywell APSL or references SPOC 165, the vendor must use **only** the approved vendor listed. The APSL changes monthly and it is the responsibility of the vendor to request the latest copy of the list from the PulseR Purchasing Agent.

Approved Processing Source List (APSL)

The APSL is a list of Controlled Process Specifications and Sources that have been approved by Honeywell Aerospace to perform those processes. This document also defines the replacement specifications for obsolete documents. All sources performing Controlled Processes for PulseR shall be approved by Honeywell and listed on the APSL. Approved source is defined as a source that is listed at the time a purchase order is issued.

“Request for Controlled Special Process and Quality System Approval” forms shall be submitted to: **supplier.survey@honeywell.com**

Regardless of the special processor’s Nadcap accreditation status, the Supplier shall only use sources identified on the APSL for performing Controlled Processes.

The APSL is located on the Honeywell Aerospace Supplier Portal web page

Requirements for being listed on the APSL include:

- Business justification
- Export License for Export License restricted specifications.
- Maintenance of an acceptable Quality System
- Maintenance of Nadcap accreditation for Nadcap applicable processes
- Maintenance of an approved SCA for SCA applicable processes
- Maintenance of Honeywell approval for the process

(Refer to the Controlled Specification details of the APSL for clarification on Nadcap and SCA requirements.)

Forms for requesting Honeywell approval to perform Controlled Processes are available on the Supplier Portal

Exception for Chemical Film Touch-Up

Chemical film touch-up/rework coating applied by brush or swab application method does not require use of an approved processing source, Nadcap accreditation, SCA, or the conducting process control tests.

Change in Location of Facilities

The Approval of Sources to Controlled Specifications is location specific. In the event of change in location, notification must be made prior to the relocation and with substantial time (minimum 90 days) for hardware, system, and process re-qualification. Also satellite sites must be approved independently of a Source's primary location and must have a Honeywell OneSource ID.

Nadcap Accreditation

In order to satisfy customer requirements, Honeywell requires all external Suppliers and their Sub-Tier Suppliers to obtain Nadcap accreditation for the following Controlled Processes. The Supplier is responsible for the cost of Nadcap accreditation.

- Non destructive testing
- Material testing in accordance with a controlled Materials Testing specification
- Heat Treating (including Brazing)
- Chemical Processing
- Welding (including Torch and Induction brazing)
- Non-conventional Machining and Surface Enhancement
- Composites

- Electronics / Wiring
- Coatings
- Elastomers

Exemption to Nadcap Accreditation

Exceptions are listed on the Controlled Specification list of the APSL.

7.0 INTERPRETATION:

Interpretation of this Policy/Procedure is the responsibility of the Quality Manager of PulseR or by customer FQE.

8.0 FORMS:

None