



Supplier Management System Requirements

QC5 Issue 7



APPROVERS – ASSIGNED DIRECTORY SIGNATORY
(QP00-04)

Jon Hastings-Rendall

Hugh Johnson

Jack Cole

Malc Thurlby

CONTENTS

CHANGE RECORD	3
RELATED DOCUMENTS	4
ABBREVIATION / DEFINITION	4
GENERAL REQUIREMENTS	5
A. OBJECTIVE	5
B. SCOPE	5
C. GENERAL	5
D. QUALITY SYSTEM REQUIREMENTS	5
E. CODE OF CONDUCT	6
F. CONFLICT OF INTEREST	6
G. RECORD RETENTION	6
H. RIGHT OF ENTRY	6
SPECIFIC REQUIREMENTS	7
1. COUNTERFEIT PARTS PREVENTION / OBSOLESCENCE	7
2. CONTROL OF SUPPLIERS AND SUB-TIER SUPPLIERS	7
3. SUPPLIER PERFORMANCE	7
4. SUPPLIER APPROVAL / RE-APPROVAL	8
5. CHANGES IN DESIGN MATERIALS AND PROCESSING	8
6. FOREIGN OBJECT DEBRIS / DAMAGE (FOD) PREVENTION	8
7. ELECTROSTATIC DISCHARGE (ESD) – BS EN61340	8
8. SPECIAL PROCESSES	9
9. SERIALISED ITEMS	10
10. FIRST ARTICLE INSPECTION	10
11. NON-CONFORMING MATERIALS	10
12. RECEIPT OF NON-CONFORMING GOODS	10
13. PROBLEM SOLVING EXPECTATIONS	11
14. DELEGATED INSPECTION AUTHORITY / SOURCE INSPECTION (IF APPLICABLE)	11
15. CERTIFICATE OF CONFORMITY REQUIREMENT FROM SUPPLIER	11
17. TRACEABILITY TO SOURCE OF ORIGIN	12
18. QUANTITATIVE TEST REPORTS / MATERIAL ANALYSIS (WHEN APPLICABLE)	12
19. PACKAGING AND SHIPPING REQUIREMENTS	13
20. DEFINITION OF 'PREFIXES' FOR THE CONTROL OF PARTS	13
APPENDIX 1	14

CHANGE RECORD

Issue No.	Section(s) affected	Reason & Details of Change	Change originated by:	Date (DD/MM/YYYY)
1	All	Re-written for Sensors in line with older issue QC1 , CW Sensors requirements supporting WFT	Carl Suter	20/11/2021
2	B. SCOPE	Changed Link to CW Sensors.com	Carl Suter	14/12/2021
3	1.0	Material added to counterfeit parts	Malc T	21/12/2021
4	20	Added Prefix Descriptions	Carl Suter	15/06/2022
5	17	China added as Prohibited Material Source	Carl Suter	10/10/2022
6	Title	The list of approvers has been updated to reflect the current organisational structure.	Eva Justice	06/09/2023
	External Documents	Removed external document's revisions where applicable.		
	Appendix 1	FOD control Requirements updated for section "M". Special Processes removed "P".		
	20	Amended for clarification.		
	8	Amended to specify a Special Processes requirement as administered by PRI & detail Test Sample expectation for non Nadcap		
7	Approval box 17	Amended to align with the directory changes Added Russia as a prohibited country for the raw material source	Eva Justice (QA Engineer)	08/07/2025

All changes to this document will result in a complete update and full authorisation and approval by the relevant personnel. It is the responsibility of QA to ensure that the revised procedure is promptly updated with any superseded copies being removed.

RELATED DOCUMENTS**INTERNAL DOCUMENTS**

Description	Doc. No.
Visual Acceptance Criteria (in conjunction with X55-301)	QP32-05
Supplier Assessment Audit Report	QF052
Application for Concession or Production Permit	QF003

EXTERNAL DOCUMENTS / SYSTEMS

Description	Doc. No.
AS9100 / EN9100:2018	N/A
ISO9001:2015	N/A
BS EN61340 ESD	N/A
AS9146 FOD/FOd (reference only)	N/A
AS9102 – FAI	N/A
AS13000 – 8D Reporting (reference only)	N/A
Nadcap (PRI) – https://p-r-i.org/nadcap	N/A

ABBREVIATION / DEFINITION

Abbreviation	Definition
CW Sensors	Curtiss Wright Sensors Division
QA	Quality Assurance
ESD	Electrostatic Discharge
FO	An alien Foreign Object that could potentially enter or migrate into the product or system becoming FOd and potentially cause FOD
FOD	Any damage sustained which could degrade the product or the End User system affecting Safety
FOd	Any FO that has entered or migrated into the product or End Users system and could potentially cause FOD if not removed and controlled.
FAI	First Article Inspection
NDA	Non-disclosure Agreement
ITAR	International Traffic in Arms Regulations
NADCAP	National Aerospace and Defense Contractors Accreditation Program
IAW	In Accordance With
CoC	Certificate of Conformity
MRR	Material Reject Report
CAR	Corrective and Preventative Action Requests
Kc	Key Characteristics
PPAP	Production Part Approval Process
ICP	Inspection Control Plans
SPC	Statistical Process Control
PRI	Performance Review Institute

GENERAL REQUIREMENTS

A. OBJECTIVE

- The purpose of this manual is to communicate CW Sensors' quality requirements and expectations to its suppliers.
- The products being procured are used on aerospace, military, and commercial platforms. It is key that Sensors' suppliers understand the criticality of the product quality required.
- It is our intent to do business with suppliers who are able to provide quality parts, materials, processes and services consistently to drawings, standards and specifications. This manual is intended to aid suppliers in their understanding of requirements regarding specific management, communication, and reporting processes.

B. SCOPE

- This procedure applies to all suppliers who provide materials, equipment, and services to CW Sensors. QC Regulations shown in Appendix 1 are the specific requirements for each Vendor Type along with all the other legal requirements/terms and conditions which can be found on page 2 of this web address. <https://www.cw-sensors.com/About/Supply-Chain>

C. GENERAL

- Suppliers are providers of product and services, which are either proprietary to them or are certified to National or internationally recognised standards.
- Key Characteristics are features of a material, process, or part whose variation has a significant influence on product fit, performance, service life, or manufacturability and identified accordingly, and is an example of an Essential Item. Key Characteristics will be highlighted on the drawing by the following symbol  and shall be subject to 100% inspection or Statistical Process Control.
- Data may be required/requested as part of the "Zero Defects" program to monitor process capability and must be made available on request.
- Risk is defined as, an undesirable situation or circumstance that has both a likelihood of occurring and a potentially negative consequence.
- **Note:** Risks arise from uncertainty due to lack of predictability or control of events.

D. QUALITY SYSTEM REQUIREMENTS

- Suppliers are encouraged to develop foundational quality systems which provide for continuous improvement and emphasise defect prevention to drive to "Zero Defects".
- AS9100 certification is preferred, ISO9001 is a minimum requirement unless approved otherwise by the CW Sensors QA.
- As required by: Drawings/Control Documents/PO's, the supplier and sub tier suppliers performing "special processes" as defined shall be NADCAP certified to that process unless approved otherwise by CW Sensors.

- Suppliers are required to notify the CW Sensors QA of any changes to their Quality System accreditations resulting in system disqualification or downgrading. Failure to do so may result in supplier being disapproved.
- All Test and Measurement equipment used for verification of parts supplied to CW Sensors must be encompassed within the supplier/sub-contractors Calibration System. The system and records for internal and external calibrated items must demonstrate that the calibration is traceable back to UKAS approved Calibration Facility or equivalent.

E. CODE OF CONDUCT

- Health, safety, and environmental management. CW Sensors expects its suppliers/sub-contractors to make proper provision for the health, safety and welfare of visitors, contractors, customers.
- Business activities shall be conducted in accordance with all relevant HS&E laws and regulations of the applicable country.

F. CONFLICT OF INTEREST

- Employees within the supply base must deal with CW Sensors in a manner that avoids conflict between personal interests and those of the employer and Sensors. This requirement applies equally to business relationships and personal activities.

G. RECORD RETENTION

- Records retained by the supplier, or its sub-tiers related to testing, inspection and traceability and not otherwise delivered with a purchase order, shall be retained indefinitely, unless agreed otherwise by the CW Sensors QA.
- Storage conditions shall allow the records to remain legible, readily identifiable, retrievable, and adequately protected from damage (Water, Fire).
- Supplier shall provide Sensors all records relevant to a purchase order if unable to retain records at their facility for the required record retention period.
- Prior to the destruction of any records, seek CW Sensors QA approval.
- The supplier shall ensure records are protected from unauthorised access or distribution.
- Electronic files shall be password protected and a firewall shall exist to prevent unauthorised access.
- Regular backup copies of records and software will be made and secured in a suitable place.

H. RIGHT OF ENTRY

- Sensors, its customers, and third-party officials reserve the right to verify the quality and delivery of all materials, documentation and services included in this procurement at the Supplier's facility.

SPECIFIC REQUIREMENTS

1. COUNTERFEIT PARTS PREVENTION / OBSOLESCENCE

- Electronic components and Materials to be supplied only from franchised distributors of OEM's.
- In order to mitigate the risk of obtaining counterfeit Material, electronic/electrical parts, Sensors will only purchase Material, electronic/electrical parts from those suppliers who can provide traceability to an authorised Original Components Manufacturer (OCM) for each item/part number unless agreed otherwise by Sensors QA.
- Required With Shipment: If the supplier is the manufacturer, then the OCM C of C is all that is needed. If a distributor is the supplier, then the distributors C of C is required. The distributor's C of C must have the OCM information included.
- Notification of pending obsolescence:

If the supplier has been made aware, or is aware of any material obsolescence, then CW Sensors must be informed immediately so that appropriate actions can be taken.

2. CONTROL OF SUPPLIERS AND SUB-TIER SUPPLIERS

- Supplier, if necessary, has the responsibility to ensure NDA's and ITAR requirements are in place.
- For sub-tiers used, additional NDA's will be required to be signed for products that are controlled under ITAR licence agreements. Sensors are happy to support this activity, if require.
- Supplier has the responsibility to flow down applicable requirements contained within all purchase orders, drawings, and specifications from Sensors.
- Suppliers will not share any "Proprietary Information" with the 3rd party, unless an NDA is in place.
- Supplier shall maintain an "approved supplier listing" with regular audits in place to ensure capability and quality control.

3. SUPPLIER PERFORMANCE

- Supplier Performance is measured through late deliveries, quality escapes or breeches of this document. If a supplier is seen to have poor performance levels, then this could result in the supplier being removed from the Sensors approved vendor list. Where practical a regular review shall be held with suppliers and Sensor's personnel to review performance levels along with CI and Corrective/Preventive Actions.
- Suppliers are expected to seek continual high levels of Quality and OTD as agreed by CW Sensors and to develop systems and processes adequately resourced to this end. Levels of performance are set by CW Sensors and CW will work with all suppliers to ensure these levels are maintained.
- If selected, then the Supplier will be sent Performance Vendor Packs each month showing both OTD and Quality Performance.

- Suppliers are expected to achieve 100% on time delivery. It is the supplier's responsibility to notify Sensors as soon as possible of potential late deliveries.
On time delivery is defined as - 5 days early, 0 day late against the agreed PO date.

4. SUPPLIER APPROVAL / RE-APPROVAL

- A supplier will be disapproved and placed on business hold under the following conditions:
 - The supplier has had no physical receipts for a period of three (3) calendar years.
 - The supplier's quality or delivery performance is considered unacceptable.
 - The supplier's "Approved Until" date has expired.
 - Other mitigating factors

5. CHANGES IN DESIGN MATERIALS AND PROCESSING

- Supplier or sub-tier shall not make any changes in product design, material, processing, or in the methods of fabrication, without prior approval in writing by CW Sensors.
- Supplier shall use CW Sensors Concession/Production Permit Request Form to obtain approval prior to any changes, or deliveries being made.
- When sub-tier suppliers are to be changed, Sensors shall be notified in writing prior to the change and written approval is gained from CW Sensors QA.
- Any change made without written approval may be considered unacceptable for receipt of product by CW Sensors and could be scrapped at the supplier's cost.

6. FOREIGN OBJECT DEBRIS / DAMAGE (FOD) PREVENTION

- Supplier shall maintain a FOD/Fod prevention program. It is recommended that these prevention programs are in accordance with, or comparable to the Aerospace AS9146 Foreign Object Damage/ Foreign Object Debris (FOD) Prevention standard.
- By delivering items to Sensors, the supplier shall be deemed to comply with the drawing that such goods do not contain any foreign materials that could result in FOD/Fod.
- Fod are items that not highlighted on drawings, e.g., burrs and debris left from the manufacturing processes which may cause product to malfunction and may cause serious catastrophic failure.
- FOD Damage are items that not highlighted on drawings, e.g., dents and scratches, or Non-Machine Marks.

7. ELECTROSTATIC DISCHARGE (ESD) – BS EN61340

- For all electronic components, PCB assemblies and those which are considered by Sensors to be susceptible to damage from electrostatic discharge. The Supplier shall:
 - Take the necessary precautions while handling and packaging the deliverable product to prevent damage.

- Ensure that device leads are electrically shorted together using non-corrosive conductive foam or other suitable methods of packing.
- Ensure that items are encased in static dissipative tubes, carriers, or bags for shipment.
- The packaging is labelled to indicate that it contains electrostatic sensitive parts.
- Maintain an environment that protects against ESD damage in line with BSEN61340 and that all staff are adequately trained.

8. SPECIAL PROCESSES

- The industry recognises the special processes as those defined by NADCAP and administered by PRI
- If supplier and its sub-suppliers perform special processes, they must be NADCAP certified for that process unless otherwise agreed in writing by Sensors Quality Assurance.
- Test Specimens and Results (None Nadcap Vendors)
 - The supplier shall process a test specimen if requested by the PO and provide with the sample and test results showing the degree of conformity with the applicable drawing/specifications.
 - A weld specimen and/or report is required when either a new or change to a weld schedule is being implemented.
 - The Supplier shall provide, with each test piece, authenticated quantitative test reports showing the degree of compliance with the applicable specification.

9. SERIALISED ITEMS

- Where product is supplied “serialised”, items supplied shall be on Supplier’s release documentation, *(e.g., C of C, includes part ID and Revision No., test reports, packing list, etc)*.
- Serialisation shall be retained during processing to ensure full traceability.

10. FIRST ARTICLE INSPECTION

- Suppliers shall conduct a First Article inspection through production run and produce parts utilizing normal production equipment, tooling and processes that would be used as in mass production.
- Suppliers shall submit a First Article Inspection report for new parts or changes to existing parts (as flowed down in the purchase order) or process change, manufacturing locations, change to sub-contractors, or materials, or cessation in manufacturing for two years.
- Requirements for the First Article Inspection report submissions must meet AS9102 requirements at a minimum.
- PPAP and ICP’s may be requested to support the “Zero Defects” programme.

11. NON-CONFORMING MATERIALS

- Notification to CW Sensors must occur anytime suspect items had been shipped. Suppliers are to notify the CW Sensors Purchasing or Supplier Quality department.
- As soon as Supplier becomes aware of nonconforming materials/parts that have already been shipped/delivered to CW Sensors, and that may affect the eventual fit, form, or function of CW Sensors products, must inform the CW Sensors of nonconforming parts. This Notification will include as a minimum:
 - a clear description of the non-conformance.
 - the product number (customer’s number, where required) and the quantity.
 - the serial numbers, batch numbers, date of manufacture, as applicable.
 - planned corrective action, with date for completion.

12. RECEIPT OF NON-CONFORMING GOODS

- Upon receipt or identification of nonconforming material CW Sensors may issue an MRR (Material Reject Report).
- Within 24 hours of notification of defective parts through MRR, suppliers must:
 - Implement requirements of Normal Containment
 - Inform CW Sensors the plan to replace suspect material
 - Identify short term corrective actions
 - Send initial CAR responses
- Within 10 business days of notification of defects suppliers must:
 - Define and verify a Root Causes of defect and Escape

- Determine and Implement permanent corrective actions for a Root Cause and Escape
 - Verify and Validate permanent corrective actions
- If a non-conformance is considered a minor issue, CW Sensors will issue a Quality Alert to the supplier describing the problem, this will be in the form of an email or letter. An MRR would not normally be raised, but the supplier is expected to identify a Root Cause and associated Corrective Actions.
- If a supplier manufactures product that does not conform to CW Sensors' specifications and lead-time does not allow permanent corrective action due to CW Sensors' production requirements, a Supplier Concession form QF003 must be submitted to CW Sensors and approved prior to shipping non-conforming material.

13. PROBLEM SOLVING EXPECTATIONS

- When Sensors issued a CAR, Supplier requires to submit a formal response. Unless agreed prior CAR responses must be IAW AS13000 (8D reporting).
- Supplier is responsible for developing a manufacturing process that ensures that the product meets the Sensors quality requirements and specifications. Suppliers must include at minimum elements of the following process of containment.

14. DELEGATED INSPECTION AUTHORITY / SOURCE INSPECTION (IF APPLICABLE)

- Where required by purchase order, the Supplier will assign a source acceptance delegate, who assumes full responsibility for all aspects of part conformity. The Delegate signs statement, "This shipment accepted by CW Sensors Supplier Quality Assurance Delegate."
- Quality Assurance will perform source inspection at Supplier's facilities during the manufacture and/or test of items furnished by those purchase orders.
- Source Inspection will be scheduled by CW Sensors and coordinated with the Supplier. The Supplier shall notify Sensors if equipment required to perform the inspection is not available at Supplier's facility.

15. CERTIFICATE OF CONFORMITY REQUIREMENT FROM SUPPLIER

- Supplier shall provide a Certificate of Conformance, or Statement of Compliance with each shipment of parts signed by a legally authorised representative of the Suppliers Organization.
- The Certificate of Conformance shall include the following:
- Sensors' part number and quantity;
 - Part revision level;
 - Military/Government/ Industry Specification Number (if applicable);
 - Description of material or services;
 - Serial number of lot/batch number (if applicable);
 - CW Sensors Purchase Order, or Sub-Contract number;

- Materials supplied must meet applicable drawings and/or specifications (Documentation must be filed to support this statement and it is subject to Sensors' examination upon request). Include all certifications.

16. SHELF-LIFE

- Cured items with limited life:
 - Cured items that have a limited life (i.e., "O" rings, gaskets, seals), on which the cure date has exceeded one (1) quarter (25%) shelf-life shall not be shipped to CW Sensors, or if at the time of receipt at CW Sensors, more than three months have passed since the date of cure unless otherwise agreed in writing by the CW Sensors QA.
- Limited Life Items:
 - Seller shall not ship material where more than ten percent (10%) of the shelf-life has expired at the time of shipping, unless otherwise agreed in writing by the CW Sensors QA.
 - Vendor must specify the name of the manufacturer and date of manufacture on product certification.

17. TRACEABILITY TO SOURCE OF ORIGIN

- Raw material bar stocks, tube, sheets, magnets etc., must be manufactured by UK; Western European; North American sources. Raw Materials sourced from China and Russia are **prohibited** unless otherwise approved by CW Sensors QA.
- Supplier must ensure that all items supplied are traceable to source of origin as applicable with lot number (s), date code(s) and batch number(s), cast number (s) etc.

18. QUANTITATIVE TEST REPORTS / MATERIAL ANALYSIS (WHEN APPLICABLE)

- Supplier shall provide with each shipment of material: (bar, tube, sheet, plate or as per PO)
 - Authenticated, quantitative test reports showing the degree of compliance with physical property specifications
 - Certification of chemical composition
 - Original manufacturer's information.

19. PACKAGING AND SHIPPING REQUIREMENTS

- Supplier shall ensure the use of adequate protective measures to prevent damage during transportation and storage, including application of packages and wraps, cushioning, and complete identification marking of unit, and intermediate and exterior containers.
- Products shall also be identified as per specification and/or drawing requirements when applicable.
- Only containers that do not generate potential FOD shall be used to ship product, Sensors are happy to support the use and return of recyclable packaging.
- Precision Machined components shall be packaged during manufacture and shipment such that there is not any sharp or “metal to metal” contacts to avoid damage.
Extra protection for treated parts such as Anodising to be considered to eliminate any marks caused during transit.
- All supporting documentation must be provided with the goods at the time of shipment such as C of C, material certs, FAI etc., or by electronic copy, means as previously agreed by CW.

20. DEFINITION OF ‘PREFIXES’ FOR THE CONTROL OF PARTS

- Specified in the Purchase Order (e.g. **V-Main Body**)

Prefix	Description
V-	Vital Part
T-	ITAR Controlled Part
P-	PPAP Controlled Part

Note: Not all drawings are marked with a "STAMP" for the parts listed above. The part name is determined by the purchase order description, which specifies the prefix.

APPENDIX 1

QC Regulations IAW QC5
Applicable QC5 Sections per Vendor Type

Vendor Type	Vendor Categories	Sec 1	Sec 2	Sec 6	Sec 7	Sec 8	Sec 10	Sec 16	Sec 19	
		Counterfeit Parts & Material Obsolescence	Control of Sub-tier	FOD control	ESD	Special Processes	FAI (AS9102)	Shelf Life	Packaging and Shipping	CW Legal Requirements
A	Chemicals/Solvents/Potting's/Adhesives	☒	☒	☐	☐	☐	☐	☒	☒	☒
B	Fasteners/Hardware	☒	☒	☒	☐	☐	☐	☐	☒	☒
C	Castings/Precision Extrusions	☒	☒	☒	☐	☐	☒	☐	☒	☒
D	Electrical and Electronic Parts	☒	☐	☒	☒	☐	☐	☐	☒	☒
E	Mechanical Components	☐	☒	☒	☐	☐	☒	☐	☒	☒
F	Special Processes	☐	☒	☒	☐	☒	☐	☐	☒	☒
G	Precision Machining	☒	☒	☒	☐	☐	☒	☐	☒	☒
H	Metal Forming and Pressings	☒	☒	☒	☐	☐	☐	☐	☒	☒
I	Precision Plastic Mouldings	☒	☒	☒	☐	☐	☒	☒	☒	☒
J	Electrical/Electronic/Mechanical Sub-Assy's	☒	☒	☒	☒	☐	☒	☒	☒	☒
K	Calibration	☐	☐	☐	☐	☐	☐	☐	☐	☒
L	Third Party Testing - EMC/Vibration/NDT etc	☐	☐	☐	☐	☐	☐	☐	☐	☒
M	Carriers and Packing Supplies	☐	☐	☒	☐	☐	☐	☐	☐	☒
P	Raw material	☒	☒	☐	☐	☐	☐	☐	☒	☒