



Supplier Quality Assurance Manual

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Revision History

Revision	Date	Description
7	7/27/2018	Added government source inspection statement
8	7/9/2020	XPER logo and branding updates;
9	3/31/2021	Added specific packaging expectations to section 9.3, updated CoC section 9.6 to match XPER receiving inspection procedure

1. Purpose

- 1.1. The XPER Supplier Quality Assurance Manual provides a concise understanding of our quality expectations and outlines the minimum requirements that our suppliers and sub-suppliers must meet. It is the intent of XPER to do business with suppliers who are able to provide parts, materials, processes and services consistently to procurement specifications, at a competitive price, and in accordance with the required delivery schedule.
- 1.2. A copy of this manual is provided to suppliers for review. It is expected that the supplier understands and complies with the applicable requirements as defined in this manual. Copies of the current Manual and required documents can be obtained from our website at: <https://xperusa.com/contact/>
- 1.3. It is the responsibility of all XPER suppliers to verify the most current revision is in use. Any questions should be directed to supplier's XPER Buyer for referral to XPER's Supply Quality Assurance Manager. Supplier requirements contained in this Manual will only be modified or waived in writing on a case-by-case basis by XPER's Product Assurance Manager.

2. Scope

- 2.1. This Manual specifically applies to all suppliers and sub-suppliers which require "Approval" as defined by XPER's ISO 9001 Quality Assurance Manual. This Manual does not alter or reduce any other contractual requirements covered by XPER's purchasing documents or any requirements defined by engineering drawings or specifications. This Manual does not supersede any applicable government regulations or quality requirements of XPER's customers.

3. Cooperative Management Attitude

- 3.1. XPER expects suppliers to share in our commitment to meeting our product quality and delivery expectations through continuous improvement efforts. It is also expected that suppliers fully support the relationship between XPER and our customers by demonstrating flexibility in meeting XPER customer requirements.
- 3.2. Due to the serious nature of the Defense Industry, XPER has concerns when supplier products or services negatively affect XPER's ability to meet our customer's delivery requirements. Our industry is driven by quality products and services delivered on time. XPER maintains that all suppliers should have contingency plans in place to eliminate risk associated with the demanding schedules. When a priority rating is specified on an XPER purchase order ("PO"), it indicates that the PO is a rated order certified for national defense use and the supplier is required to follow all the provisions of the Defense Priorities and Allocation System (DPAS) Regulations (15 CFR 700). Under DPAS Regulations, if the PO supports the U.S. Government and is DX or DO Rated, then the supplier must acknowledge acceptance within ten (10) days (for DX-Rated Order) or within fifteen (15) days (for DO-Rated order) of receiving the PO.

4. Quality Management System, Qualification and Approval

4.1. Quality Management System:

- 4.1.1. XPER requires all suppliers to comply with their own quality management systems certified to ISO 9001 or other industry quality management systems, where established by the supplier. In the absence of an ISO Certification, suppliers are encouraged to develop quality systems to meet ISO 9001 requirements and strive to obtain certification. At a minimum, suppliers shall have a documented Quality System consisting of a quality organizational structure, trained personnel, procedures and a documentation system which ensures that all products conform to drawing specification, procurement requirements and zero product defect, on time shipments, on time delivery, and excellent supplier services are expected.

4.2. Qualification

- 4.2.1. The supplier must notify the XPER Buyer, in writing, in advance of the change for evaluation and requirements for new First Article or Production Part Approval Process Submission per Section 5.

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4.2.2. Written notification shall be given to an XPER buyer in advance of any of the following:

- 4.2.2.1. The supplier undergoes new ownership
- 4.2.2.2. Facility relocation
- 4.2.2.3. Major management restructuring
- 4.2.2.4. Major process changes including production location or facility
- 4.2.2.5. New equipment and tooling
- 4.2.2.6. Source of components and any time a process or procedure is made that will affect the part or component being produced.

4.2.3. ISO Certified suppliers shall provide a copy of their ISO certification upon request and shall notify XPER's Supplier Quality Representative within 10 working days if their Certificate of Registration is suspended. The supplier shall forward a new copy of their certificate if it has expired.

4.2.4. Survey/Audit and Source Inspection:

- 4.2.4.1. Supplier agrees to respond to Quality System surveys, audits and source Inspections, to be arranged in advance, including, without limitation, production process capability and product evaluations. Audits and Inspections will be conducted by XPER's Supplier Quality Group for supplier evaluation, verification and qualification where:
 - 4.2.4.1.1. A supplier is being qualified as a new supplier or considered for new product or additional business.
 - 4.2.4.1.2. First Article Inspection and Testing for product and process qualification and/or acceptance is performed at the supplier's facility.
 - 4.2.4.1.3. Supplier fails to submit an acceptable First Article Inspection package, Production Part Approval Process package, or response to Supplier Corrective Action Reports (SCAR).
 - 4.2.4.1.4. The quality of supplied product does not meet XPER's Drawing or Math Data requirements requiring supplier evaluation to determine responsibility and cause.
 - 4.2.4.1.5. Suppliers need or request assistance in improving performance.

4.2.5. Source Inspection:

- 4.2.5.1. A Source Inspection is a program performed by the XPER Supplier Quality Management at the supplier's site, utilizing the supplier's resources. It includes an audit of the supplier's Quality System documentation and records control, production processes, process capability, product inspection/testing processes, records and equipment calibration controls.
 - 4.2.5.1.1. An XPER Supplier Quality Representative, XPER's customer representative, or a Government Source Inspector may conduct source inspection prior to or during a product qualification run, inspection and testing. The Government has the right to inspect and test all supplies called for by the contract, to the extent practicable, at all places and times, including the period of manufacture, and in any event before acceptance. The Government shall perform inspections and tests in a manner that will not unduly delay the work. The Government assumes no contractual obligation to perform any inspection and test for the benefit of the Contractor unless specifically set forth elsewhere in this contract.

4.2.6. Personnel and Process Qualification, Training and Certification:

- 4.2.6.1. All personnel of supplier who have direct impact on XPER's product or material quality shall be trained and qualified to applicable Standard Operating Procedures that are specifically utilized or developed for XPER's product, including, without limitation, special processes such as welding, soldering, painting and coating.
- 4.2.6.2. Welding Processes, Inspectors and Operators shall be certified to AWS Weld Codes or as specified on XPER purchase order or drawings.

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4.2.7.Documentation and Records/Data Control:

- 4.2.7.1. Documentation and records described herein shall be maintained by supplier for seven (7) years and shall be made available for review or retention by XPER and/or XPER’s customer representative upon request:
 - 4.2.7.1.1. Records of inspection and testing to verify compliance to applicable drawings and/or specifications.
 - 4.2.7.1.2. Records of calibration for inspection and test equipment used for product acceptance.
 - 4.2.7.1.3. Records of supplier personnel’s experience, training and qualifications.
 - 4.2.7.1.4. Records of certification of processes and personnel for processes such as welding, heat treating, plating, anodizing, NDE, painting etc., utilized for production of XPER product.
 - 4.2.7.1.5. Records of XPER’s Purchase Orders and contracts, applicable drawings, specifications and manufacturing processes.
 - 4.2.7.1.6. Records of Non-Conformance and Supplier Corrective/Preventive Actions related to XPER’s product.
- 4.2.7.2. All documents, including, without limitation, prints, drawings, manuals, specifications, records and functional parts received from XPER, are the property of XPER and shall be returned to XPER upon request.
- 4.2.7.3. When XPER issues revised prints, specifications or manuals, the obsolete copies shall be marked obsolete and returned to XPER’s Buyer upon request.

4.3. Approval:

- 4.3.1.Before use of a supplier’s product for production purposes, suppliers shall be qualified for “Approved” rating status and placed on XPER’s Approved Supplier List. The minimum qualifications are:
 - 4.3.1.1. The supplier’s quality system is approved by XPER’s survey and/or audit processes.
 - 4.3.1.2. The supplier’s product is approved for production by the First Article Inspection or Production Part Approval Process.
 - 4.3.1.3. Depending on the product or service being provided, Joint Certification Program (JCP) enrollment may be required

5. Product Qualification

5.1. This section defines the requirements for production part qualification and approval. Minimum submission requirements listed below shall be completely fulfilled unless otherwise waived by XPER’s Supplier Quality Representative in writing. XPER reserves the right to request additional information.

5.2. First Article Inspection

5.2.1.At a minimum, a First Article Inspection (FAI) shall be used to initially qualify a part/process for supplier approval, unless the Production Part Approval Process (PPAP) is required. Refer to Table 1 for submission requirements. The submission requirements for a Level-One and Level-Two FAI are the same as a Level-One and Level-Two PPAP.

5.3. Production Part Approval Process

5.3.1.When required by XPER, the supplier shall submit the more comprehensive automotive equivalent of the First Article, called Production Part Approval Process (PPAP) qualification package. Refer to 5c for PPAP package level requirements and 5e (Table 1) for submission requirements.

5.3.2.The supplier should possess all AIAG (Automotive Industry Action Group) Core Quality Tool Manuals.

5.3.2.1. The reference AIAG manuals are listed below:

APQP-Advanced Product Quality Planning and Control Plan

PPAP-Production Part Approval Process

PFMEA-Process Failure Mode Effects Analysis

SPC-Statistical Process Control

MSA-Measurement Systems Analysis

Note: suppliers can obtain the above manuals from www.AIAG.org

5.4. Qualification Package Requirements

5.4.1.A Level-One FAI submission is required when:

5.4.1.1. A product design or process change(s) made to an existing product (the change(s) may be initiated by XPER or by supplier)

5.4.1.2. A new process, and/or new equipment, and/or a new tooling are added to an existing production line

5.4.1.3. A new sub-supplier is added for an existing product

5.4.2.A Level-Two FAI submission is required for;

5.4.2.1. New supplier

5.4.2.2. New product launch by an existing supplier

5.4.3.A Level-Three PPAP submission, if required from XPER customer contract, shall be annotated on the purchase order

5.4.4.XPER's Buyers are responsible for providing to suppliers the latest revision of XPER's product drawing(s) and engineering specifications.

5.5. FAI/PPAP Sample Requirements

5.5.1.The samples shall be produced with production intent processes, including, but not limited to, equipment, tooling, personnel and Standard Operating Procedures. One (1) sample for production part qualification and (5) additional samples for repeatability (six (6) samples total). For a single cavity tool process, six (6) samples are required for production part qualification unless otherwise specified by XPER's Supplier Quality Representative. For multiple-cavity tool process, two (2) samples from each cavity are required for production part qualification unless otherwise specified by XPER's Supplier Quality Representative.

5.5.2.Before shipment to XPER, all samples shall be identified by the label referenced in QF-5007 FAI/PPAP Workbook tab named "4. Samples."

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5.6. Documentation Requirements:

S= Supplier must send items electronically IAW QF-5007 FAI/PPAP Workbook to the buyer. *Supplier shall following distribution guidelines set forth on drawings.	Submission Level		
	1	2	3
Submission Requirements	1	2	3
INTRO (This information will populate throughout the workbook)	S	S	S
1. Part Submission Warrant (PSW)	S	S	S
2. Dimensional Results	S	S	S
3. Design Record / Drawing	S	S	S
4. PPAP Samples	S	S	S
5. Material, Performance Test Results	-	S	S
6. Engineering Change Documents	-	S	S
7. Design FMEA	-	-	S
8. Process Flow Diagram (PFD)	-	-	S
9. Process FMEA	-	-	S
10. Initial Process Capability-for critical characteristics	-	-	S
11. Measurement Systems Analysis (MSA)-for critical characteristics	-	-	S
12. Control Plan	-	-	S
13. Appearance Approval Report (AAR)- if applicable	-	-	S
14. Checking Aids (Fixture, gage, template)-if applicable	-	-	S
15. Master Sample	-	-	S

TABLE 1: Documentation Requirements

6. Vendor Information Request (VIR) Requirements

6.1. Requests for the following shall be submitted by use of the Vendor Information Request form and sent to XPER Buyer:

- 6.1.1. Authorization to differ from requirements imposed by XPER
- 6.1.2. Clarification of drawing, specification or Purchase Order requirements
- 6.1.3. Requests for drawing changes, specification or Purchase Order requirements

6.2. When a VIR is used to request changes from specification or drawing requirements, the VIR must include:

- 6.2.1. A complete description of the requested change
- 6.2.2. The point in the manufacturing cycle where it occurred or will occur,
- 6.2.3. The quantity and identity of the applicable items or material
- 6.2.4. The rationale for why the approval should be granted by XPER, XPER’s customer and/or the Government (to include any advantages to be realized by XPER, XPER’s customer and/or the Government through approval of the request)
- 6.2.5. The action taken to prevent recurrence, the description must be clear and concise and must include full dimensional and location details.

6.3. When a VIR is used to document approved changes, the Vendor Information Request number shall be included on a tag and attached to appropriate parts.

6.4. A VIR applies only to the item(s) for which it was submitted; the resolution may not be extended to any other item or piece on the same Purchase Order or to any other Purchase Order.

7. Prohibited Chemicals

7.1. Product delivered to XPER, Inc. shall not contain asbestos, cadmium, lead, mercury, hexavalent chromium (also known as Hex-Chrome), polychlorinated biphenyls, nor radioactive materials. Please contact the XPER Quality Assurance Department with any questions.

8. Product Marking and Identification Requirements

8.1. Where required, product drawings, engineering specifications, specific part markings or supplier identification markings shall be applied as required by XPER.

9. Product Packaging, Shipment and Delivery Requirements

9.1. XPER’s quality and delivery targets are:

- 9.1.1.100% on-time delivery to the designated location
- 9.1.2.Full quantity
- 9.1.3.Zero defects
- 9.1.4.Pricing as stipulated on the PO

9.2. Any defective product may result in rejection and return of the defective product to the supplier at the supplier’s expense.

9.3. Packaging shall be in accordance with any pre-approved packaging and labeling specification where applicable. Packaging shall prevent any product damage, including, without limitation, breakage, marring, or chipping during shipping. Best practices to follow include:

- 9.3.1. Wrap coated parts in foam to prevent them from contacting each other
- 9.3.2. When a pallet contains layers of parts, separate the layers with cardboard sheets
- 9.3.3. Parts are to be secured to the pallet with shrink wrap or banding. When banding, use cardboard to protect the items and ensure appropriate tension is applied so that parts are not damaged from over tightening.
- 9.3.4. Attach a “NO STACKING” cone on the top of items that would be damaged if the courier would stack other items on your packaging.

9.4. Returnable packaging owned by XPER shall be handled and stored in a manner that will prevent damage or loss. Prior to use, it is the supplier’s responsibility to inspect, clean and repair or replace returnable packaging to ensure that the packaging will protect the product during storage, handling and transit.

9.5. All supplier packing slips shall reference the XPER PO number.

9.6. With each applicable shipment, supplier is required to provide “Certificate of Conformance” with the following information:

- 9.6.1.Information that must match the XPER purchase order: Supplier Name, Purchase order number, Item Part Number, Item Revision, Quantity, If applicable – any special process details;
- 9.6.2.Minimum content required: Date, Authorized Signature and Title, Statement Certifying Product Compliance

9.7. Electrostatic Discharge (ESD) Packaging:

9.7.1.All Class 1, Class 2 and Class 3 parts, assemblies, and equipment, as defined by MIL-STD-1686, are to be packaged in accordance with Paragraph 5.87 of MIL-STD-1686 (MIL-E-17555). External shipping packaging for Class 1, Class 2, and Class 3 devices shall be identified with the ESD symbol. All other components with solder able leads and considered non-ESD sensitive per MIL-STD-1686 shall be packaged in material that meets the requirements of MIL-B-81705, Type II or Type III. Bare printed wiring boards are to be packaged in heat-sealed non-static-generating poly bags that meet the requirements of MIL-B-81705 and MIL-HDBK-263.

9.8. Any shipment that fails to comply with the above requirements or other SQAM requirements may be rejected and not received until supplier resolves and, product Non-Conformance Reporting (NCR) or Supplier Corrective and Preventive Action (SCAR) are completed. Payment is owed by XPER only if the shipment is accepted and all supplier issues are resolved.

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10. Shelf Life/Age Control Requirements

- 10.1. Suppliers providing items subject to age control, such as paint, adhesives, rubber, etc., shall mark the parts and exterior shipping container with manufacture and expiration dates. Products shall have a minimum of 80 percent of shelf-life remaining (based on the date on manufacture) upon receipt by XPER unless specified on the XPER purchase order or drawing.

11. Non-Conforming Material Control Requirements

- 11.1. When defective material is detected by XPER, a “Non-Conformance Report” will be initiated internally and the supplier will be contacted with XPER’s disposition decision. Within 24 hours, the supplier shall respond by either issuing a written return authorization or a written scrap authorization to XPER. If XPER’s disposition is to use the material after 100% sorting or rework, then the supplier will be responsible for arranging the sorting or rework at supplier’s cost and reimbursing any costs incurred by XPER.
- 11.2. If a response is not received from the supplier within 48 hours of issuing a non-conforming material report, XPER’s Buyer may issue a debit memo and return the product to the supplier without supplier’s authorization and at supplier’s expense.

12. Supplier Corrective Action Report (SCAR) Requirements

- 12.1. When a “Supplier Corrective Action Report” is received by supplier from XPER, within the following 24 hours, the supplier shall establish a Containment Plan to include 100% inspection of all remaining product to be shipped and the identification and removal of all defective products prior to further shipment.
- 12.2. A copy of the SCAR and 100% inspection report shall be attached and shipped with any further shipments. Without a written approval from XPER’s Supplier Quality Representative, the shipment without the SCAR copy and 100% inspection report will be rejected at XPER’s Incoming Inspection.
- 12.3. The supplier shall continue the Containment Plan until root cause analysis is completed and corrective action is implemented and verified by XPER’s Supplier Quality Representative. A completed Supplier Corrective Action Report (SCAR) shall be submitted to XPER’s Supplier Quality Representative within 30 days of SCAR issuance or a written extension, which may be granted by the XPER Supplier Quality Representative upon request.

13. Counterfeit Product Mitigation

- 13.1. The Supplier shall establish, implement and maintain documented procedures, which shall detect and/or preclude the use of counterfeit/used parts. All XPER Suppliers shall have developed and documented purchasing procedures that reduce the risk of purchasing and utilizing counterfeit material. All Suppliers shall have defined and documented product verification procedures that assure the detection of counterfeit parts prior to formal product acceptance. All Suppliers shall have developed and documented Material Control procedure that reduces the risk of utilizing counterfeit material.

14. Supplier Monitoring and Rating

- 14.1. XPER’s Procurement and Product Assurance Departments continuously monitor and rate all suppliers using a Supplier Scorecard. Supplier performance is measured on the supplier’s ability to meet XPER’s requirements for product/material quality, delivery performance, and responsiveness. Suppliers must remain in good standing on XPER’s Approved Supplier List. Failure to do so will identify that supplier as an “At-Risk” supplier to our Program Management Office (PMO).
- 14.2. The XPER Buyer or Supplier Quality Representative will notify all suppliers in our “At-Risk” category. (SCAR), Supplier Corrective Action Report may be issued for evaluation, continued supplier approval and continuous improvement purposes.

15. Expectations for Suppliers in support of “Conflict Minerals”

- 15.1. In support of XPER’s policy on conflict minerals, suppliers are expected to supply materials to XPER that are “DRC Conflict-Free”. DRC includes the countries of Democratic Republic of Congo, Republic of Congo, Central Africa Republic, South Sudan, Zambia, Angola, Tanzania, Burundi, Rwanda and Uganda. Suppliers are expected to adopt policies and management systems with respect to conflict minerals and to require their suppliers to adopt similar policies and systems. XPER expects suppliers to establish their own due diligence program to ensure conflict-free supply chains. In the event XPER determines that a supplier’s efforts to comply with this Policy have been deficient and the supplier fails to cooperate in developing and implementing reasonable remedial steps, XPER reserves the right to take appropriate actions up to and including discontinuing purchases from the supplier. Under the definition of “DRC Conflict-Free,” products supplied to XPER:
- 15.1.1. Do not contain tantalum, tin, tungsten or gold (3TG) as elements necessary to their production or functionality
- 15.2. If products supplied to XPER do contain these minerals, the minerals must originate outside the DRC, come from scrap or recycled sources, or be supplied from smelters that have been validated by an independent private sector party to be conflict-free. Certified conflict-free smelters are validated as compliant to the EICC (Electronic Industry Citizenship Coalition) conflict free smelter (CFS) protocol using the CFS Compliant Smelter List. Through the CFS protocol, smelters are audited globally; the list of compliant smelters and refiners is posted at www.conflictreesmelter.org. XPER will survey direct suppliers as a part of our conflict minerals due diligence program. Suppliers are expected to respond to survey requests in a timely manner, and with full disclosure.

16. Confidentiality

- 16.1. XPER shall only disclose proprietary information to suppliers on a need to know basis. XPER and our suppliers maintain a healthy and confidential relationship via a SIGNED and ACTIVE Non-Disclosure Agreement (NDA). Proprietary Information may include, but not be limited to, Bill of Material (BOM), solid models, 2D and electronic drawings, software, etc. By acceptance of any Purchase Order/Contract, the supplier accepts accountability in protecting XPER’s, and XPER’s Customer’s Proprietary Information. THIS INCLUDES NOTIFICATION TO XPER PRIOR TO THE RELEASE OR TRANSFER OF PROPRIETARY INFORMATION TO A THIRD PARTY; XPER WILL THEN MAKE THE DECISION TO INITIATE A THIRD PARTY NDA.
- 16.2. Original proprietary information, as well as all copies of proprietary information must be destroyed when they are no longer needed or must be returned to the originating source when requested. Proprietary Information is not to be released and/or disclosed to competitors of XPER.

17. Quality Codes (also known as Q-Codes)

17.1. These codes may be used on purchase orders to identify requirements. If clarification is needed, contact the XPER buyer.

Q1: First Article Inspection/Test, as specified on QF-5007 (See Table 1, Level 1 or 2)

Q2: Welding/soldering qualification required

Q3: Non-destructive testing required

Q4: Certificate of Conformance (C of C) required

Q5: Material certification required (chemical/physical test reports)

Q6: Inspection records/test reports required

Q7: Final inspection required

Q8: XPER Receiving inspection required

Q9: UID/RFID required

Q10: Special process approval

Q11: Level 3 PPAP required (See Table 1, Level 3)

Q12: Electrostatic discharge requirements (ESD)

Q13: Material/part traceability and ID required

Q14: Special packaging requirements

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