OPERATIVE INSTRUCTION

QUALITY REQUIREMENTS FOR SUPPLIERS

- **Document owner** Quality and Continuous Improvement

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- **Next higher document** PG 7401 Purchasing

- **Superseded document** IO 0703-2 - Quality requirements for suppliers

Changes history

Revision No.	Description	Effective Date
Rev. 00	First issue	02/05/2012
Rev. 01	Update of the document structure according to EN 9100.	11/11/2015
Rev. 02	Full update of document according to EN 9100:2016	22/01/2018
Rev. 03	Update applicable documents	21/09/2021

Applicable documents

EN 9100	Quality Management Systems – Requirements for Aviation, Space and Defense Organizations
AS 9120	Quality Management Systems - Aerospace Requirements for Distributors
AS5553	Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition
IPC-610	Acceptability of Electronic Assemblies
ISO 9001	Quality Management Systems – Requirements
AS 6174	Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel
NAS412	Foreign object damage / foreign object debris [fod] prevention
UNI EN 9100	Requisiti per i Sistemi di Gestione Qualità delle Organizzazioni dell'Aviazione, Spazio e Difesa
AQAP-2110	NATO Quality Assurance Requirements for Design, Development and Production
NADCAP AC…	The supplier must choose the NADCAP Audit Criteria applicable to the specific special process.

Referenced documents

IO 7501-4	Handling of ESD equipment

INDEX

1. Scope

1.1 This document details the requirements to be satisfied by Suppliers to ASE S.p.A.

1.2 ASE requires each Supplier to comply with the quality requirements set forth in this document and to maintain a quality system that ensures supplies and services comply with all requirements.

1.3 These requirements are additional to the Purchase Order and do not replace or alter any of the terms and conditions covered by the order, or other contractual requirements. If there is conflict between this standard and the Purchase Order or Contract, then the Purchase Order/Contract shall take precedence

1.4 The Supplier has to maintain an effective quality system to ensure product and process integrity that is based on EN 9100:2016. In the following paragraphs of this document the EN9100:2016 norm is referred as to EN 9100.

1.5 Throughout this document, each section includes the requirements of the same section of EN 9100. If there are no additional requirements, then EN 9100 is simply recalled. For those sections that have additional requirements above those of EN 9100, each section includes a recall of EN 9100 and a description of the additional requirement. Where there is a section number that is not included in EN 9100, then only additional requirements are reported.

2. Normative References

Document number	Title
EN 9100	Quality Management Systems – Requirements for Aviation, Space and Defense Organizations (Revision 2016)
AS 9120	Quality Management Systems - Aerospace Requirements for Distributors
AS5553	Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition
AS6174	Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel
IPC-610	Acceptability of Electronic Assemblies
ISO 9001	Quality management systems - Requirements
NAS412	Foreign Object Damage / Foreign Object Debris [FOD] Prevention.
NADCAP AC…	The supplier must choose the NADCAP Audit Criteria applicable to the specific special process.

3. Terms and Definitions

Certificate of conformity: a legal document provided by the supplier that states their compliance to all applicable drawing, specification, and purchase order requirements.

Concession: a written authorization to accept an item which has been manufactured with deviations from the current drawing and process specification inclusive of root cause, corrective action /preventive action.

Counterfeit parts: unauthorized copies of product

Non-conforming product: any material, process, part, or product in which one or more characteristics do not conform to the requirements of the drawing, specification, or purchasing contract, or other applicable product description.

Permit: a specific written authorization granted prior to manufacture for an item to deviate form the particular requirement(s) of an item's currently approved design.

Quality Management System (QMS): the collection of documents, procedures and work instructions that are used to define and effectively implement the organizations Quality System.

Rework: action on non-conforming product to make it conform to all requirements.

Repair: action on non-conforming product to make it acceptable for the intended use. Repair is distinguished from rework in that the item after repair does not completely conform to the applicable engineering requirements.

Root cause/ Corrective Action: action taken to eliminate the cause of non conformity against the design and purchase oreder.

Special processes: those processes where the parameters are directly influenced by component geometry and /or results that cannot be confirmed by inspection. They may alter the chemical or physical properties of the item. The impact of such a process cannot typically be evaluated without destructive testing.

Nadcap: National Aerospace and Defence Contractors Accreditation Program (NADCAP) activities and processes.

Various other terms are defined in standards ISO 9000, EN/AS /JISQ 9100 and 9120.

4. Context of the Organisation

4.1 Understanding the Organisation and its Context

See EN 9100 requirements.

4.2 Understanding the Needs and Expectations of the Interested Parties

See EN 9100 requirements.

4.3 Determining the Scope of the Quality Management System

See EN 9100 requirements.

4.4 Quality Management System and Its Processes

See EN 9100 requirements.

Additional requirements.

4.4.1 Suppliers shall design, manufacture, service, release and deliver all products in accordance with the Purchase Order and all requirements identified on it.

4.4.2 ASE requires its Suppliers to be certified to EN 9100. If a Supplier's business is less than 50% aerospace the Supplier must be certified to ISO 9000. Suppliers that do not comply with the above can still be used by ASE, provided the Supplier's Quality Management System meets the following requirements and has been audited and approved by an ASE auditor:

- Objective evidence must be available to demonstrate compliance with the requirements of this document and the ASE Purchase Order.
- The Supplier shall ensure that quality system procedures are available to all personnel, Customers and relevant authorities.
- The Supplier must be able to demonstrate regular and planned internal audit and corrective action management.
- The Supplier's senior management shall review the Quality Management System at planned intervals. This review shall include the results of audits, Customer feedback, product conformity, Customer rejections, preventive and corrective actions, changes in the Quality Management System, and recommendations for improvements.

4.4.3 All products shall be manufactured strictly in accordance with the Purchase Order. The delivery of incomplete product is not permissible unless specified on the Purchase Order.

4.4.4 Material Stockist, Distributors, Franchised Distributor shall hold AS9120 Certification. In all cases the following minimum requirements apply:

- Items shall only be procured directly from the manufacturer or approved distributor or franchised distributor.
- Data furnished with the purchased items shall ensure that full traceability of the purchased item is maintained.
- The purchased item conforms to specification and was actually produced by the designated manufacturer.

4.4.5 Suppliers shall be responsible for the pro-active management of counterfeit components within their supply chain.

- Appropriate procedures and counter measures shall be employed using recognized techniques and standards e.g. AS5553.
- The Supplier is responsible for notifying ASE of any suspected components in a timely manner.
- Suppliers shall be responsible for the pro-active management of obsolete components within their supply chain. Appropriate procedures and counter measures shall be employed using recognized techniques and standards.
- The Supplier is responsible for notifying ASE of any end of life notices they become aware of in a timely manner.

4.4.6 For special process accreditation, see paragraph 8.5.1.

4.4.7 In the event that a Supplier loses his approval to EN 9100 or AS9120 or ISO 9000 or NADCAP the Supplier must immediately inform the ASE Buyer and Quality Manager in writing.

4.4.8 Enquiries concerning the content of this document and other referenced documents, or requests for additional copies should be referred to the Buyer responsible for the Purchase Order.

4.4.9 It is the policy of ASE to design, manufacture and supply products and services, which result in, or contribute to, safe conditions for its Customers and the users of such products and services. In furtherance of this policy, Suppliers shall establish controls and procedures that ensure that the attention necessary for the achievement of this objective is given throughout the design, development, production and support of their products as appropriate.

4.4.10 Suppliers are required to comply in full with the contents of this document. If a Supplier cannot comply with any portion of this document then the Supplier must advise the ASE Buyer and Quality Manager in writing.

4.4.11 The ASE Quality Manager will review and disposition the request and advise the Supplier of the results in writing. The Supplier is responsible for keeping all related documentation on file at his facility. No deviation from this procedure is acceptable in advance of formal agreement to do so. Such formal agreement will be in writing, copies of which are to be retained by the Supplier. The deviation shall be bounded by the degree of deviation as detailed in both form and time and no other deviation is accepted or implied.

4.4.12 Verbal agreements are un-acceptable unless they are confirmed in writing and acknowledged by both ASE and the Supplier.

4.4.13 ASE Supplier’s inspection personnel are required to have eye exams within a maximum period of every two years to assure visual acuity, and color vision.

4.4.14 US Suppliers will ensure they have appropriate approval to export equipment and documentation to be used on military applications, where applicable. International Traffic in Arms Regulations (ITAR) apply.

4.4.15 Suppliers shall maintain ASE supplied documents at latest issue.

4.4.16 ASE Lead (Pb)-free Soldering Policy:

- ASE current policy on accepting component termination finishes shall be to address each request for change on a part by part basis at the generic level (same manufacturer, same part type etc).
- The use of any Lead-free component finish shall require written authorization by ASE Quality Manager
- The Supplier shall maintain full traceability of the use of Lead-free component finishes, including point of embodiment, date codes and finish specification. Finish information should be recorded on the Certificate of Conformity for the component.

5. Leadership

5.1 Leadership and Commitment

See EN 9100 requirements.

5.1.1 General

See EN 9100 requirements.

5.1.2 Customer Focus

See EN 9100 requirements.

5.2 Policy

See EN 9100 requirements.

5.2.1 Establishing the Quality Policy

See EN 9100 requirements.

5.2.2 Communicating the Quality Policy

See EN 9100 requirements.

5.3 Organizational Roles, Responsibilities, and Authorities

See EN 9100 requirements.

Additional requirements.

5.3.1 All Suppliers are expected to have plans to achieve quality improvements as part of their continuous improvement programs.

5.3.2 ASE is dedicated to continuous improvement in the quality and integrity of its products and services and to the satisfaction of its Customer requirements and expectations. Suppliers' contribution to this approach through the quality and reliability of their products and services is a prerequisite.

5.3.3 Each Supplier shall demonstrate continuous improvement based on defect prevention, root cause analysis and effective, timely corrective actions.

6. Planning

6.1 Action to Address Risks and Opportunities

See EN 9100 requirements.

6.2 Quality Objectives and Planning to Achieve Them

See EN 9100 requirements.

6.3 Planning of Changes

See EN 9100 requirements.

Additional requirements.

6.3.1 Any change to the management representative responsible for Quality in the Supplier's organization or ownership shall be communicated to the ASE Quality Manager. Changes in premises shall be notified sufficiently in advance to the ASE Buyer as well as the ASE Quality Manager.

7. Support

7.1 Resources

See EN 9100 requirements.

7.1.1 General

See EN 9100 requirements.

7.1.2 People

See EN 9100 requirements.

7.1.3 Infrastructure

See EN 9100 requirements.

7.1.4 Environment for the Operation of Processes

See EN 9100 requirements.

7.1.5 Monitoring and Measuring Resources

See EN 9100 requirements.

Additional requirements.

7.1.5.1 Control of Monitoring and Measurement equipment: the Supplier shall determine the monitoring and measurement to be undertaken and the monitoring and measuring equipment needed to provide evidence of conformity of product to determined requirements.

7.1.5.2 The Supplier shall also maintain a register of the monitoring and measuring equipment and define the process employed for their calibration or verification including details of equipment type, unique identification, location, frequency of checks, check method and acceptance criteria.

7.1.5.3 The Supplier shall ensure that the environmental conditions are suitable for the calibration, inspection, measurement and testing being carried out.

7.1.6 Organisational Knowledge

See EN 9100 requirements.

7.2 Competence

See EN 9100 requirements.

7.3 Awareness

See EN 9100 requirements.

7.4 Communication

See EN 9100 requirements.

7.5 Documented information

See EN 9100 requirements.

7.5.1 General

See EN 9100 requirements.

7.5.2 Creating and Updating

See EN 9100 requirements.

7.5.3 Control of Documented Information

See EN 9100 requirements.

Additional requirements.

7.5.3.1 All Quality records shall be legible and identifiable to the product involved. Hand written entries shall be made in blue or black ink. Pencil, white out or erasable inks are not acceptable.
Quality records shall be stored and maintained in such a way that they are readily retrievable in facilities that provide a suitable environment to minimize deterioration or damage and to prevent loss. Quality records shall be available for evaluation by ASE representatives.

7.5.3.2 Documentation and records applicable to ASE shall not be amended with correction fluid. A single linked line shall delete any revisions and/or correction of errors and will be accompanied by an initial and date.

7.5.3.3 Should a Supplier cease trading with ASE, quality records shall still be maintained until disposal is authorized by the ASE Quality Manager. If the Supplier ceases trading completely, or is unable to maintain the records, the Quality Manager must be informed so that alternate arrangements can be made to store the records.

8. Operation

8.1 Operational Planning and Control

See EN 9100 requirements.

8.1.1 Operational Risk Management

See EN 9100 requirements.

8.1.2 Configuration Management

See EN 9100 requirements.

8.1.3 Product Safety

See EN 9100 requirements.

8.1.4 Prevention of Counterfeit Parts

See EN 9100 requirements.

8.2 Requirements for Product and Services

See EN 9100 requirements.

8.2.1 Customer Communication

See EN 9100 requirements.

8.2.2 Determining the Requirements for Products and Services

See EN 9100 requirements.

8.2.3 Review of the Requirements for Product and Services

See EN 9100 requirements.

8.2.4 Changes to Requirements for Product and Services

See EN 9100 requirements.

8.3 Design and Development for Product and Services

See EN 9100 requirements.

8.3.1 General

See EN 9100 requirements.

Additional requirements.

8.3.1.1 Suppliers shall have a process in place for the review of requirements related to the products, as well as those specified on the purchase order. This process shall ensure that the product requirements are defined and understood and that the supplier has the capability to meet all of the requirements. This review should occur prior to acceptance of the order.

8.3.2 Design and Development Planning

See EN 9100 requirements.

8.3.3 Design and Development Inputs

See EN 9100 requirements.

8.3.4 Design and Development Controls

See EN 9100 requirements.

8.3.5 Design and Development Outputs

See EN 9100 requirements.

8.3.6 Design and Development Changes

See EN 9100 requirements.

8.4 Control of Externally Provided Processes, Products, and Services

See EN 9100 requirements.

8.4.1 General

See EN 9100 requirements.

Additional requirements.

8.4.1.1 All Purchase Orders and Purchase Order amendments shall be subject to Contract Review prior to acceptance. This review shall ensure that copies of all processes and specifications quoted either on the drawing or Purchase Order are available and that, where a Supplier is unable to carry out any operations, approved subcontractors are identified.

8.4.1.2 Suppliers shall reference this document on all Purchase Orders issued in support of activity for ASE.

8.4.2 Type and Extent of Control

See EN 9100 requirements.

Additional requirements.

8.4.2.1 ASE shall be afforded the right to verify at source or upon receipt that purchased product conforms to specified requirements. This shall not absolve the Supplier of responsibility for the quality of the delivered product nor preclude its subsequent rejection should other quality issues arise.

8.4.2.2 Where the use of a subcontractor is permitted, his identification and selection shall form a part of the initial contract review. Suppliers may consider a subcontractor suitable given the following circumstances:

The subcontractor is currently approved by ASE as a Supplier and the work is within his scope of approval or the Supplier has approved the subcontractor to ASE requirements and is delegated from ASE to do this.

The Supplier shall have documented evidence of the review of any subcontractor and his suitability for use. The Supplier shall ensure the flow down of all contract, design and test requirements to his sub-contractor and shall ensure control and verification of all characteristics of product and process supplied.

8.4.2.3 Suppliers are responsible for ensuring the flow down of applicable sections of this document and related specifications to lower tier Suppliers including but not limited to Right of Entry.

8.4.3 Information for External Providers

See EN 9100 requirements.

Additional requirements.

8.4.3.1 ASE requirements for product approvals are:

- Full compliance to ASE Quality Requirements
- Full compliance to ASE requirements reported in the Purchase Order
- Full compliance to incoming tests on the received products. In particular:
    - ASE does not have Suppliers with free pass
    - ASE incoming tests are carried out using sampling criteria provided by MIL-STD-105 Sampling Procedures and tables for inspection by attributes

8.4.3.2 ASE requirements related to competence, including any required qualification of persons, are:

- NDT: personnel must be qualified according to NAS 410, NAS Certification & Qualification of Nondestructive Test Personnel and prEN 4179 Qualification and approval of personnel for non-destructive testing
- Fusion Welding: personnel must be qualified according to AWS D17.1/D17.1M Specification for Fusion Welding for Aerospace Applications
- Electrical and electronic components assembly soldering: personnel must be qualified according to the IPC Professional Training and Certification Policies and Procedures policy, whose specific criteria are based on the method for which qualification is required.
- When a special process qualification is not managed according to a reference standard, the indications contained in the applicable documents foreseen in the contract or drawing must be followed. In any case, the supplier must have its own written procedure containing the training process required for the qualification of its personnel. The supplier must be able to demonstrate that the personnel has the necessary skills to perform the required special processes. Evidence can be provided through recording and storage at least of the following information:
    - Education
    - Previous Years of experience (associated to the specific special process)
    - Training courses (hours of training with expert staff, hours of training in the classroom and hours of training in the workplace)
    - Qualification issued by accredited bodies
    - Written and practical tests with relate scores

8.4.3.3 ASE requirements related to the external providers' interactions with the organization are:

- Each Supplier must declare to ASE Procurement and Supply Chain Office the Supplier key contact person for ASE.

8.4.3.4 ASE monitors the external providers' performance using two KPIs:

- Supplier On Time Delivery: Percent of Number of parts received on time/ Number of parts received
- Supplier Quality: Percent of Number of non-conforming parts/ Number of parts received.

ASE sends Suppliers' performance report each month to a set of selected suppliers.

8.4.3.5 ASE can perform any verification or validation activities at the external providers' premises;

8.4.3.6 For production process verification, ASE requires the supply of First Article Inspection Report (FAIR) according to AS9102.

8.4.3.7 ASE requires to each Supplier to promote the safety culture ensuring that persons are aware of:

- their contribution to product or service conformity;
- their contribution to product safety;
- the importance of ethical behavior.

Procurement of Items on Source Control Drawings.

8.4.4 Any drawing, which is 'source controlled', and has the manufacturer identified on the drawing, may only be purchased from that Supplier or his approved agent. Suppliers must not manufacture source-controlled parts if they are not the approved manufacturer.

8.4.5 Where a Supplier wishes to change the source of a second tier operation, the Supplier shall request permission to make the change from ASE Quality Manager.

NOTE: Identification of a Supplier on a source controlled drawing does not automatically approve them for use. It is the Supplier's responsibility to check that any subcontractor is correctly approved prior to use.

8.5 Products and Service Provision

See EN 9100 requirements.

8.5.1 Control of Production and Service Provision

See EN 9100 requirements.

Additional requirements.

8.5.1.1 Production documentation: each work instruction document (e.g. traveller, operation list, etc.) is to be kept with the product all times.

The document shall have, at least, provision for:

- A unique part number, product description and quantity
- Drawing number, issue/revision
- Document revision and date
- List of individual operations
- Authorized inspection stamp/signature, quantity and date, at each operation
- Evidence that the material issued is in accordance with the drawing(s)

and when applicable:

- Product serial number(s)
- Non conformance details e.g. concession, production permit, scrap and rework note numbers

- Tooling and /or software revision status.

8.5.1.2 Production documents approval
If the Suppliers do not use ASE work instructions, or if ASE work instructions are not available, the Suppliers production document (e.g. work instruction) shall be sent to ASE buyer for approval.

8.5.1.3 Control of Production Process Changes
Each changes in Supplier approved documents must be sent again to ASE for approval.

8.5.1.4 Manufacturing documentation shall be made available to ASE, and their Customers and Authorities, in support of audit or investigation activities.

8.5.1.5 Facility Cleanliness and FOD
Adequate, clean well-maintained facilities shall be provided to enable products to be consistently produced in accordance with the requirements of the ASE order.
Suppliers shall establish a procedure detailing the general workmanship practices for the prevention of Foreign Object Damage. This procedure shall apply to all personnel who are directly or indirectly involved with handling parts that could be subject to foreign object damage.
Suppliers shall establish and maintain an effective FOD prevention program that is planned and implemented using a continuous improvement approach.
Guidelines for FOD prevention can be found in the National Aerospace Standard NAS 412 Foreign Object Damage / Foreign Object Debris [FOD] Prevention.
Suppliers are also responsible for the flow down of FOD prevention to Sub Tiers.

8.5.1.6 Full performance
Any process specified on the drawing or engineering specification shall be carried out in full. Suppliers must not omit any part of any specification except when defined on the Purchase Order or covered by a non conforming report authorized by ASE Quality Manager.

8.5.1.7 Certified Skills
Operators carrying out processes shall be duly approved to carry out such processes.

8.5.1.8 Shelf Life Management
Suppliers providing shelf life items shall ensure they are correctly labeled with shelf life expiry and suitably packaged.

8.5.1.9 Key Characteristics
Suppliers are expected to establish procedures for identifying adequate statistical techniques for determining process capability of key characteristics, especially when these are identified on the drawing. Such techniques shall demonstrate management ownership and responsibility and be based on recognized industry models. The Supplier must flow down and assure compliance of Key Characteristics requirements to lower tier Suppliers.

8.5.1.10 Sampling inspection
Where the Supplier uses a sample inspection plan as a means of product acceptance, the plan shall be predicated on industry recognized models, statistically valid and shall preclude the acceptance of known non-conforming product. Documented procedures and records to demonstrate this shall be available.

8.5.1.11 Part Marking and Lot Identification
All parts supplied to ASE shall be identified in accordance with the requirements of ASE drawings.
Suppliers shall maintain records to identify the drawings and materials used and the manufacturing and processing history of each batch of parts supplied to ASE.
A lot number that enables all associated records to be retrieved shall identify each batch.

8.5.1.12 Stress Relieving
Unless otherwise stated on the drawing the manufacturing process shall contain appropriate safeguards to ensure that machined components are supplied in a dimensionally stable condition. This may require components to be subject to stress relief during manufacture – to be controlled and carried out at the discretion of the Supplier.

8.5.1.13 Dimensional Inspection Reports
The Supplier is required to maintain and provide upon request all dimensional inspection records. The records must be at a minimum based on an established/recognized sampling plan.

8.5.1.14 Electrical Test Data Report
The Supplier is required to maintain and provide upon request all electrical test records. The records must be at a minimum based on an established and recognized sampling plan.

8.5.1.15 Stamp Control

Manufacturing and inspection stamps issued to authorized holders shall be recorded with specimen signatures of the holder, and a definition of the scope of approval for which the stamp is used.

8.5.1.16 Serial Number

When the serial number is required, it shall be allocated and remain unchanged from the earliest, defined operation, throughout the life of the product.

8.5.1.17 Safety Hazard
The Supplier shall provide clear identification, control and training in accordance with National and International standards if a product is a safety hazard. Safety data sheets shall be provided.

8.5.1.18 The Supplier's system must provide a process for the inspection, verification and documentation of the first production article and updates of it. First Article Inspection Reports shall be done in accordance with AS9102. The document must be approved by ASE Quality.

8.5.1.19 A partial FAI for affected characteristics is required for events detailed in AS9102. The document must be approved by ASE Quality.

8.5.1.20 A copy of the FAIR or partial FAIR shall be supplied with the product unless otherwise stated. The Supplier shall retain the FAIR as a quality record and they shall not be disposed of without the written permission of the ASE Quality Manager. This shall not absolve the Supplier of the responsibility for the quality of the delivered product nor preclude its subsequent rejection should other quality issues arise.

8.5.1.21 ASE considers the following to be special processes requiring specific approval:

- Heat Treating (all forms)
- Welding
- Brazing
- Soldering
- Impregnation
- Painting
- Non-destructive testing
- All electroplating/chemical (e.g.: Ion Vapor Deposit (IVD), Chemical Film, Cadmium, Anodizing, Passivation, Phosphate, Zinc, Conformal Coating)

8.5.1.22 Regarding Special Process, ASE Suppliers and Sub-tier Suppliers shall gain and maintain appropriate NADCAP certification for their Special Processes.

- Special Processes called up in ASE approved design data will be compliant with PRI NADCAP Accreditation program requirements; ASE may request additional requirements.
- Irrespective of NADCAP certification, Suppliers and Sub-tier Suppliers shall remain responsible in terms of article quality.
- In any case, exceptions to ASE Technical Specifications shall be submitted to ASE in writing and shall be formally approved by ASE before proceeding
- Supplier that does not have NADCAP approval for special processes must provide ASE with a detailed description of the process, equipment, control parameters, materials and training of personnel. ASE approval shall not absolve the Supplier of responsibility for the quality of the delivered products, nor preclude its subsequent rejection should other quality issue arise.

8.5.2 Identification and Treaceability

See EN 9100 requirements.

Additional requirements.

8.5.2.1 All parts shall be clearly traceable back to the original manufacturer of the parts. Where the Supplier has purchased a component or assembly, they shall have a copy of the original manufacturer's certificate of conformance.

8.5.2.2 All components and assemblies shall be traceable to the original material identification. This requirement shall not apply to industry standard components purchased 'off the shelf'.

8.5.2.3 The traceability system must facilitate the rapid identification of any part delivered and suspected of being defective. Containment action must be implemented immediately to protect the Customer on any defects found that affect quality of the product.

8.5.2.4 Components shall be legibly marked in the specified location in accordance with the method defined on the appropriate drawing or specification.

8.5.2.5 When product is certified by means of test coupons it will be the responsibility of the Supplier that prepared the coupon to maintain records of the test results, including certification where testing is undertaken by an approved testing authority, at his facility.

8.5.2.6 Age Sensitive Materials
It is a requirement that all shelf life items shall have at least 80% shelf life remaining when released to ASE.

8.5.2.7 Chemical test reports.
The Supplier is responsible for obtaining and maintaining material chemical test records, and results. The test record shall include at a minimum the lot traceability number, and the actual testing values. These records shall be available to ASE upon request.

8.5.2.8 Physical and mechanical test reports.
The Supplier is responsible for obtaining and maintaining material physical and mechanical test records, and results. The test record shall include at a minimum the lot traceability number, and the actual testing values. These records shall be available to ASE upon request.

8.5.2.9 Laminations annealed
A furnace chart recorder showing the record of time, temperature, and furnace atmosphere for the applicable annealing process must be available upon request from ASE. The time and temperature chart must be:

- Traceable and identifiable to each lot of laminations annealed
- Traceable to the ASE Purchase Order.
- Identified with the applicable ASE part number and revision level.
- Identified with the applicable process specification.
- Laminations must be stacked by set-up/batch. They cannot be mixed.

NOTE: Under no circumstances shall laminations that have been processed differently be mixed together.

8.5.2.10 Control of ASE owned or funded tooling
The Supplier will maintain an active tooling management plan which specifies tool life, maintenance intervals and need for completing first articles at appropriate intervals. This is to ensure tooling does not wear and so produce non-conforming parts. This tooling management plan will be reviewed by ASE auditors as necessary.

If a problem is found the Supplier shall follow the ASE concession process

8.5.2.11 Electro Static Discharge
Suppliers must comply with the requirements of IPC 610 latest revision.

8.5.2.12 Soldering Requirements
Suppliers performing soldering must comply with the requirements of IPC 610 latest revision Class 3, unless otherwise agreed with ASE.

8.5.3 Property Belonging to Customers or External Providers

See EN 9100 requirements

8.5.4 Preservation

See EN 9100 requirements.

Additional requirements.

8.5.4.1 All non treated ferrous materials must be preserved by the Supplier using oils, oil paper, grease, or any wrapping material that will prevent corrosion. Newspaper acid or sulphur based wrapping paper cannot be used.

8.5.4.2 Electrical parts cannot be oiled or greased. They shall be wrapped in corrosion resistant paper.

8.5.4.3 Products that are Electro Static Sensitive Devices (ESSD) or operate at high voltage shall be clearly marked accordingly and packaged in accordance with National and International specifications.

8.5.4.4 Finished parts (items that will not require additional plating or painting), must be preserved in a manner that will prevent damage during shipment.

8.5.4.5 Corrosion preventive compounds shall not be used on electrical or electronic parts or assemblies.

8.5.4.6 The method of packaging must:

- Prevent damage or deterioration in transit
- Permit safe handling
- Assure that all necessary warnings are completely visible
- Assure the shipping address, Supplier name, quantity, and part number are visible.
- Assure that the packing list, quality documents, and other important information is enclosed, or securely fastened.

8.5.4.7 Shipments consisting of multiple containers shall be identified as follows:

1 of 5 , 2 of 5 , 3 of 5 , etc.

8.5.5 Post- Delivery Activities

See EN 9100 requirements

8.5.6 Control of Changes

See EN 9100 requirements.

Additional requirements.

8.5.6.1 Uncontrolled change within the supply chain is the major cause of deficiency escapes into ASE. It is crucial therefore that all change, no matter how trivial it may appear, is assessed for potential risk and then subject to mitigating actions and control.
Changes can occur in three ways:

a) Change to the manufacturing location, either within a Supplier or between Suppliers.

b) Changes to design on proprietary equipment.

c) Changes to method of manufacture, including machines, people, tools, gauges etc.

8.5.6.2 The control mechanism for these is as follows:

a) Changes to the manufacturing location shall be notified in advance to ASE Buyer and ASE Quality Manager in order to agree the necessary risk mitigation actions

b) Changes in design shall be raised with the Buyer responsible for the Purchase Order. The Buyer shall take the appropriate action within ASE and inform the Supplier. The Supplier must not progress with any change to the design without written agreement from the ASE.

c) Changes in method of manufacture shall be controlled as follows

- All changes in manufacturing method shall be subject to a documented risk review prior to being carried out. This includes any change in machine, manufacturing route, program, trained personnel or sequence of machining irrespective of whether these changes are permanent or temporary.
- The change must be subject to First Article Inspection prior to being accepted. The First Article Inspection Report shall be submitted to ASE with the parts for approval.
- Changes to the method of manufacture are not permitted unless there is a demonstrable benefit in quality, cost or delivery, with no adverse risk to the others.

8.5.6.3 Changes to the design of a product where the manufacturer is not the designer, i.e. 'make to print', is not permitted without either a formal drawing amendment or a production permit, approved in advance of the change being made.
Application for such drawing changes shall be submitted in writing to the ASE engineering.
Suppliers must not incorporate any proposed drawing change until either they have been issued with the amended drawing or a production permit by ASE.

8.5.6.4 Suppliers must not allow uncontrolled change to occur on any product manufactured on behalf of ASE.

Concessions / Permits

8.5.6.5 If a Supplier's quality system discovers a non-conformance to the ASE Purchase Order, Specification and/or Drawing requirements the Supplier can submit a request for a concession / permit to the ASE Quality Manager.

8.5.6.6 The Supplier can use the table below to determine when a concession is needed.

Option	Concession approval needed
Rework the non-conformance back to full compliance to the drawings and specifications prior to shipment	No
Scrap and replace	No
Request to use the product as is	Yes
Request to repair the non-conformance	Yes

Note: The Supplier shall not dispatch nonconforming items until it has been provided with a copy of the approved concession by ASE and has completed any special instructions stated in the ASE disposition.

For each delivery made from the batch that has been conceded, the concession/permit number must appear on the Supplier Certificate of Conformity annotated as

"EXCEPTION: Concession or Permit Number xxxxx"

(where 'xxxxx' is the concession or permit number).

A further label shall be attached to each individual item or bag and to each shipping carton clearly identifying that these goods are being progressed under Concession / Permit number xxxxx

8.6 Release of Products and Services

See EN 9100 requirements.

Additional requirements.

8.6.1 A Certificate of Conformity, which shall include sufficient information to enable it to be correlated to the supplies, must accompany supplies submitted to ASE.

8.6.2 Certificates and supporting documentation will be identified by Purchase Order or Contract number.

8.6.3 The Certificate shall include a statement of conformity individually signed by an authorized signatory of the Supplier and shall be as stated below or similar, subject to agreement by ASE:
"Certified that the whole of the supplies detailed hereon have been manufactured, inspected and tested and, unless otherwise stated, conform in all respects with the requirements of the contract or order"

8.6.4 Where a Supplier has authority to issue certification documents under local aviation authority conditions, (e.g. EASA Form 1, FAA Form 8130-3) such certification is required.

8.6.5 The Supplier shall be able to demonstrate to the satisfaction of ASE that the nominated authorized signatory has controlled usage of the authority given. Where the Supplier utilizes an automated system for generation and/or authorization of certificates and records, then those systems shall be subject to robust management and security controls approved by ASE to protect the integrity of the certification process.

8.6.6 The Supplier shall ensure completion of all requirements of the Purchase Order prior to delivery including all processes. Deliveries of goods that do not fulfill the Purchase Order requirements will not be accepted.

8.6.7 The Supplier is responsible for providing a CoC that confirms that the products, processes, and/or services furnished meet the requirements for lot, of each shipment, of the ASE Purchase Order.

8.6.8 The CoC must have at a minimum the following:

- Consignee's name and address
- Consignor's name and address
- Reference number and date of the certificate
- Description and quantity of supplies
- ASE drawing numbers and issue
- Related specification or drawing numbers and issue (as appropriate)
- Identification marks and serial numbers (as appropriate)
- Supplier work instructions identification and issue
- Manufacturing lot number or traceability reference
- For all raw materials cast and/or batch numbers/ date code/lot number, test report reference and, if called for, copies of test results
- Any limitations/shelf life expiry dates
- Permit eventually associated to the product delivered (see requirement 7.5.2.2)

8.6.9 When the Purchase Order and/or applicable documents do not specify a method of packaging, and preservation it is the Supplier's responsibility to assure that product is preserved and packed using methods that will assure that it arrives damage free to ASE.

8.7 Control of Nonconforming Outputs

See EN 9100 requirements.

Additional requirements.

8.7.1 The Supplier shall have no discretionary power to deviate from the specification requirements. Concessions will only be accepted when supported by full root cause analysis and evidence of preventative action. Parts subject to concession may not be delivered to ASE until the ASE Material Review Board approves the concession.

8.7.2 No rework shall be permitted on metallurgically or chemically treated parts without written approval from ASE. Re-tempering of hardened and tempered parts in order to adjust material properties shall be permitted without approval but manufacturing records shall clearly record the operation, its parameters and the resulting properties achieved.

8.7.3 Where the Supplier has any reason to suspect non-conformance of any delivered product, then the Supplier must immediately notify the ASE Quality Manager.

8.7.4 Scrap components shall be physically damaged beyond repair prior to disposal.

Rejections after Delivery

8.7.5 The Supplier shall be notified of non-conforming supplies found after delivery. ASE will contact the Supplier and issue a debit memo against the parts prior to return.

8.7.6 Following receipt of a rejection notification the Supplier shall take immediate containment actions. The actions shall include 100% inspection of all Supplier stock or work in progress. This containment action shall be taken within 48 hours of notification from ASE. The Supplier shall provide within 14 days an investigation into the root cause of the problem and provide corrective action to prevent recurrence. The findings, corrective action and effective date shall be reported to the ASE Quality Manager.

9. Performance Evaluation

See EN 9100 requirements.

9.1 Monitoring, Measurement, Analysis and Evaluation

See EN 9100 requirements.

9.1.1 General

See EN 9100 requirements.

9.1.2 Customer Satisfaction

See EN 9100 requirements.

9.1.3 Analysis and Evaluation

See EN 9100 requirements.

Additional requirements.

9.1.3.1 All Suppliers shall monitor the quality and delivery performance of product delivered to ASE. In addition each Supplier's quality and delivery performance is continually monitored by ASE. Suppliers whose

performance does not achieve and maintain an acceptable level shall be formally notified of their rating and required to implement improvement actions accordingly.

9.1.3.2 It is ASE Quality organization responsibility to assure the Supplier has been notified using a Supplier Corrective Action Request (CAR).

9.1.3.3 Failure to respond positively to a CAR issued by ASE may result in the withdrawal of Supplier approval released by ASE.

9.1.3.4 Source Inspection will be used by ASE to help develop a new Supplier, or a Supplier that is having quality issues. Source inspection at a Supplier's site will be imposed by a letter issued from ASE Quality to the Supplier. In the event ASE Quality imposes source inspection only the ASE Quality department can remove or waive source inspection.
ASE will also use source inspectors to perform in process checks at a Supplier, process audits at a Supplier, or corrective action development, or follow up.

Corrective Actions

9.1.3.5 When ASE performs a Supplier audit and finds a non-conformance a request for corrective action will be issued to the Supplier. Before an audit will be closed out all open audit CARs must be answered by the Supplier and accepted by ASE.

9.1.3.6 A CAR will be issued to the Supplier on any item returned to the Supplier for a quality problem. The Supplier will be required to answer the CAR using an 8D format. Part of the corrective action will include 100% inspection by the Supplier to validate the corrective action, and assure ASE the problem has been corrected.

9.2 Internal Audit

See EN 9100 requirements

9.3 Management Review

See EN 9100 requirements

9.3.1 General

See EN 9100 requirements

9.3.2 Management Review Inputs

See EN 9100 requirements

9.3.3 Management Review Outputs

See EN 9100 requirements

10. Improvement

See EN 9100 requirements.

10.1 General

See EN 9100 requirements.

10.2 Nonconformity and Corrective Action

See EN 9100 requirements.

10.3 Continual Improvement

See EN 9100 requirements

11. ASE right of entry

Any person authorized by ASE, including the Customer and/or Regulatory Authority, shall upon reasonable notice, have right of access to enter any works, warehouse or other premises under the Supplier's control for the purpose of surveillance or inspection of any records, tools or materials procured or used for the manufacture of the goods or process of manufacture on the completed goods themselves before dispatch. This right shall be flowed to lower tier Suppliers.