Supplier Quality Requirements

Document Number: SQR001 Issue 3

(Document Not Controlled When Printed)

UNRESTRICTED Commercial in Confidence

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1.0 References / Abbreviation

1.1 Reference to applicable International Standards

AS/EN9100:	Quality Management System requirements for the Aerospace Industry
AS5553	Counterfeit Electrical, Electronic and Electromechanical
AS6174	Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Material
AS9102:	Aerospace Standard for First Article Inspection Requirements
AS9103:	Variation Management of Key Characteristics
AS9145:	Requirements for Advanced Product Quality Planning
AS9146:	Foreign Object Damage Prevention Programme for Aviation, Space and Defence
ISO9001:	Quality Management System requirements standard
ISO10012:	International Standard for Measurement Management Systems
ISO17025:	International Standard for competence of Testing & Calibration Laboratories
ISO2859:	International Standard specification for Acceptance Sampling
ISO2230:	Rubber Products – Guidelines for Storage
AS13000:	Problem Solving Requirements for Suppliers
AS13003:	Aerospace Standard for Measurement Systems Analysis
EN10204:	Type of inspection document

1.2 Abbreviation

AIE:	Advanced Innovative Engineering
ASL:	Approved Supplier Listing
ATP:	Acceptance Test Plan
COTS:	Commercially available applications, defined by industry recognized specifications and standards, sold through public catalogue listings
FAIR:	First Article Inspection Report
FMEA:	Failure Mode Effect Analysis
FOD:	Foreign Object Debris
LAIR:	Last Article Inspection Report
MSA:	Measurement Systems Analysis
NADCAP:	The National Aerospace and Defence Contractors Accreditation Program
NDA:	Non-Disclosure Agreement
PPAP:	Production Part Approval Process

2.0 Introduction

Competing in today's global market requires that products and services must be of high quality, delivered on time, with increasingly short lead times and at a competitive cost.

For AIE to be successful and meet the needs of our customers, we must have a process in place that encourages, supports, and ensures our suppliers also meet quality expectations.

The role played by our suppliers is key to our strategic business plan and crucial to our future success.

The objective of this document is to define the basic system requirements that we will use to ensure that our mutual responsibilities for product and service quality are understood and implemented.

AIE's goal is to progress and expand our existing global base to become the world leader in our chosen market fields. To ensure we achieve this target, AIE has developed specific strategies that include:

- Long term relationships with fewer suppliers.
- Closer interaction between AIE's manufacturing, engineering, purchasing, quality personnel and those of our suppliers.
- Deployment of Advanced Product Quality Planning.
- Assure compliance to market specific requirements such as BS EN ISO 9001 and AS9100 and other customer and regulatory standards.

To assist in the implementation of our objectives, AIE utilises a Supplier Quality Assurance programme, which embodies all the measures specified and mutually applied, between AIE and the supplier to obtain and maintain the overall standards required.

The development of supplier quality assurance requires close collaboration between AIE and the supplier, and this necessarily involves an in-depth knowledge of the organisation and methods employed by the supplier. It equally requires the supplier to be familiar with the requirements when doing business with AIE.

This document details the requirements of the supplier's quality system that can be assessed by AIE before the placing of new orders and the requirements to be followed by the supplier after orders have been placed.

3.0 Document overview

The Supplier Quality Requirements document has been written to address the industry standard and expectations from:

- The AS/EN9100 / ISO9001 International Standards
- Our key customers specific requirements

This document has been issued as guidelines for supplying product / service to AIE

In case of any conflicts in requirements of supply, the following dictates the Hierarchy of requirements:

1st Purchase Order / Condition of Supply

2nd Product Definition (Drawings / Specs)

3rd Customer Requirements

4th This Document

All Suppliers who process aerospace purchase orders shall be compliant with this document. These requirements shall be flowed down to any Sub-tiers who have an influence on the fit, form or function of the end article.

Aerospace purchase orders are susceptible of being audited by Airworthiness Authorities, Military Agencies, and Customers. Therefore, the Supplier, upon justified occasions and with prior agreement of the Supplier, shall allow access:

- to areas in the manufacturing facility where Customer products are handled
- to all associated records which demonstrate product conformity
- Note: exceptions can be discussed where confidential areas and/or Intellectual Properties are concerned.

In this AIE requirements document, the following verbal forms are used:

– "shall" indicates a requirement.

– "should" indicates a recommendation.

– "may" indicates a permission.

– "can" indicates a possibility or a capability.

Information marked as "NOTE" is for guidance in understanding or clarifying the associated requirement

It is essential for all suppliers to inform AIE promptly when they may not be able to meet the requirements set within this standard and additionally those set within the purchase order requirements.

If there is any doubt regarding any requirements set within this document, then please contact AIE Purchasing / Quality to enable us to support your query.

4.0 Supplier Selection, Approval & Monitoring

4.1 Supplier Pre-requisites

As a minimum the supplier shall be certified to ISO9001 with a preference being that the supplier holds AS9100 or AS9120 as applicable.

When Independent Test Facilities are required, the laboratory shall be ISO 17025 certified.

Where special processes are required such as Heat Treatment, Coating, Welding etc then NADCAP or equivalent national certification approval is also required, as well as inspector qualifications as applicable.

Dependant on project, Customer directed sources may be required for special processes or raw materials, please ensure that you confirm prior to proceeding.

Non-ISO approved organisations may be used at the discretion of AIE for development products but will be expected to demonstrate adequate management and controls of their processes that satisfy AIE's minimum requirements.

In the unusual situation that AIE decides to use a non-ISO approved supplier for production intent parts, AIE Quality will be required to fully engage with the supplier to carry out a full assessment of its management system with a view to potentially underwriting the supplier and control it's supplied parts with a supporting Quality Plan. The Quality Plan can be revoked at any point during the contract if it is deemed that the supplier poses any risk to product integrity and AIE's known customer requirements.

Supplier approvals for product / services shall meet customer requirements including (as applicable)

NADCAP approvals

Customer Approvals

Product Approvals/ qualifications

Recognised qualifications for special processes such as welding etc., may form part of contract requirements as deemed necessary.

Deviations from the above requirements require written approval from the AIE Quality Department.

4.2 New Supplier Introduction

Prior to commencement of activities the supplier is required to complete the AIE Supplier Assessment Questionnaire. A supplier generated document can be supplied if the information given is in line with those set within the AIE document. This document gives an initial overview of the supplier's organisation. In addition, the supplier will also be required to complete a Non-Disclosure Agreement. Both the Supplier Survey and NDA documents will be supplied by AIE's purchasing department.

An on-site assessment may be conducted as part of the initial introduction as a new supplier. The decision to assess a newly identified supplier depends on aspects such as criticality of supply, approvals held, location and financial implications. Notification of any planned assessments will be given in advance and dates agreed with the supplier.

Once the completion of the required documentation and initial evaluation by AIE Quality have taken place a decision is made as to the level of approval to be granted.

The supplier is then added to AIE's Approved Supplier List.

4.3 Supplier Quality Assurance Requirements (SQAR's)

The requirements set within this document are supported during the purchase order process. As such, the purchase orders shall invoke the SQAR codes and documentation submittal requirements for each shipment. Applicable requirements must be flown down to sub-tier suppliers. In the event, any requirement cannot be met, notification must be made to AIE purchasing immediately for clarification, direction, and authorisation.

Supplier Quality Approval Requirements (SQAR)		
SQAR Code Number	**Description**	**Detail**
SQAR 1	2.1 / 2.2 Certificate	2.1 Declaration of compliance with the order, validated by a nominated representative independent of the manufacturing department. 2.2 As per 2.1 but where drawing specifies performance requirements, indication of results of non specific inspection are included.
SQAR 2	3.1 Certificate	3.1 Declaration of compliance with the order, validated by a nominated representative independent of the manufacturing department. Where drawing specifies performance requirements, indication of results of specific inspection are included
SQAR 3	ISIR (Specify Requirements)	Initial Sample Inspection Report - Report of actual inspected results. Could be Dimensional or material and include Mechanical and performance requirements, These will be defined by Engineering and included in the Purchase order.
SQAR 4	FAIR	First Article Inspection Report - Dimensional, Material and Performance Report in line with development drawing / specification requirements. Documentation to be in line AS9102 latest edition
SQAR 5	PPAP - Level 3	Production Process Approval Process - Documentation to be supplied in line with the AIAG PPAP MANUAL (Latest Edition) Requirements for level 3 Submissions
SQAR 6	Test Report / Product Performance Certification	Test Reports / Performance Certificates supplied in line with Drawing / Specification / Standard requirements, validated and authorised by the nominated company representative as defined by ISO TEC 17025 / UKAS / NADCAP Requirements
SQAR 7	Customer Contract Specific Requirement (Specify Requirements)	All contractual customer requirements for approval shall be identified and listed on the purchase order

4.4 Supplier Monitoring

All suppliers to AIE are placed on the Approved Supplier List. The list denotes the type of supplier, products that they supply, AIE approval level granted, their third-party certifications.

The ongoing performance of the key suppliers are monitored for delivery and quality. The performance of those suppliers is reviewed, and feedback given accordingly. The aim in every instance is for AIE and the supplier to hold a working relationship that encourages Continual Improvement.

The vision of AIE is that all suppliers achieve zero defects and encourages a zero-defect philosophy.

Supplier approval grading and product approval requirements:

Supplier & Supplier Product Approval Requirements										
Supplier Codes & Certification			Supplier Approval Requirements (In Place Prior to Purchase Order)				Product Approval Requirements (Required on every Purchase Order)			
Supplier Classification	Description	Supplier Certification	Supplier Questionnaire (Note 1)	Certification	Non Disclosure Agreement (Note 2)	Supplier Audit / Self Assessment	Development	Job 1	Production Each Batch	
A	**AIE Product Suppliers:** (AIE Intellectual Property) Parts that are Assembled, Fabricated, Manufactured, to AIE Engineering Drawings & Specifications.	ISO9001 as a minimum (AS9100 or IATF 16949 Preferred)	Yes	Yes	Yes	Yes	SQAR 4	SQAR 5	SQAR 2	
B	**AIE Nominated Product Suppliers:** (Supplier Intellectual Property) OEM or Proprietary items that are Assembled, Fabricated, Manufactured in full and supplied without modification using the suppliers own engineering drawing, specifications & manufacturing processes, these parts are available widley commercially and supplied either by the OEM direct or through authorised suppliers. This exluces Metal Fasteners & Fixings and Raw Materials	ISO9001, AS9100 or IATF 16949 Preferred	Yes	Yes	No	No	SQAR 1	SQAR 1	SQAR 1	
C	**Special Process Suppliers:** Heat Treatment Coating Plating Welding / Brazing / Soldering Casting / Moulding	ISO9001 as a minimum (AS9100 or IATF 16949 Preferred) NADCAP (Customer Requirement)	Yes	Yes	Yes	Yes Note 6	SQAR 2	SQAR 2	SQAR 2	Note 3 Note 4 Note 5 Note 7
D	**Raw Material Suppliers for conversion and use in Customer End Products:** Aluminium Steel Other Alloys	ISO9001 as a minimum (AS9100 or IATF 16949 Preferred)	Yes	Yes	No	No	SQAR 3	SQAR 3	SQAR 2	
E	**Support Suppliers:** Laboratory Services Calibration Services Measuring Services Accreditation Body Measuring / Inspection Equipment	ISO17025 or UKAS or NADCAP	Yes	Yes	No	No	SQAR 6	SQAR 6	SQAR 6	
F	**Production Consumable:** required during the build or testing and is within the engine configuration such as sealants, adhesives, oil, fuel, grease etc. No drawing exists for these items, and they are controlled via the ERP system due to some of the items having set expiry requirements.	ISO9001 preferred	Yes	Yes (Where appropriate)	No	No	SQAR 1	SQAR 1	SQAR 1	
G	**General Consumable:** Goods that are not classed as Production consumables and therefore not used within the engine configuration for the build or testing or supplied to an end customer (PPE, Stationery, Storage Containers, Batteries, labels, bags etc.	None	Note 7	No	No	No	No	No	No	Note 4 Note 5
H	**Prototype Parts:** Suppliers of parts for evaluation only. This may be as an alternative to an existing production part, to assess new products and technology, or resolve an engineering issue. Where the product is deemed acceptable to use and will be required for production intent, then the requirements of the applicable grade shallbe followed. Engagment should not extend past one order.	None	Note 7	No	No	No	Defined by Engineering			
Note 1: Suppliers can provide their own version of Supplier Information Document as long as the criteria covers at least the same detail requested by AIE.										
Note 2: An NDA shall be required where AIE exchanges IP information about engine systems. The supplier Codes are a guide, if in doubt ask.										
Note 3: Where a part is bought from a source in groups A - E and is for development Prototype evaluation only as a speculative review, then Approval Code SQAR 3 shall be applied with a statement of requirements to be re										
Note 4: Where there are specific Customer Contract Requirements for Approval, then Approval Code SQAR 7 shall be applied with a statement of customer requirements included.										
Note 5: All supplier records of approval shall be maintained on EPACS against the relevant Supplier profile.										
Note 6: Self Assessment Suppliers shall be on the basis of the submission of an AIAG CQI Self Assement for Special Processes. Audit Suppliers shall be completed using Document Q0112 Supplier Assessment										
Note 7: Suppliers in Category G & H do not require a full Supplier Questionnaire to be completed and an account can approved and created by using internal form Q???										

Approved Suppliers may be subject to an ongoing Supplier assessment. Selected Suppliers will be assessed as necessary to verify product conformance and to re-establish supplier performance. These assessments may be made up of a cross-functional team consisting of procurement, quality, and operations.

AIE will endeavour to support and assist in aiding resolution of supplier related issues.

Repeated failure to comply with AIE requirements or continual poor performance could result in the supplier approval being revoked.

AIE Reserves the right to review/revoke a supplier approval at any time.

5.0 Protection of Information / Right of Access

Any information the supplier receives from AIE must be kept confidential and never disclosed to any third party without the prior written agreement of AIE. The proprietary information can include but is not restricted

to all versions of electronic data, drawings and documentation, tooling, and materials. Under no circumstance is the supplier to make a direct approach to AIE's customers in relation to agreed business dealings. Any information received from AIE suppliers will be treated in the same manner. This protection of information is covered under the AIE Non-Disclosure Agreement. It is the supplier's responsibility to flow down all / any Non-Disclosure Agreements through the supply chain for all AIE contracts.

Suppliers shall provide access to their premises and facilities for AIE, our customers and regulatory authorities for co-operation on product, process, and business issues if required.

6.0 Human Resources

6.1 Quality representative

The Supplier shall define a Quality Representative, within its organisation, responsible for product quality across all production shifts. The Supplier shall ensure that they have:

- Delegation of authority to stop production and deliveries in case of any potential quality problems are found.
- Organisational freedom and unrestricted access to Top Management to resolve quality issues.
- been granted full access to all necessary information and records to facilitate root cause analysis and the definition of robust corrective and preventive actions.

These Quality Representatives shall have the full knowledge of products, skills, credential, and training to accomplish the tasks required and protect Customers from exported non-conformity.

6.2 Quality Human Resource Management

The Supplier shall have detailed training instructions, delegations of authority and corresponding records at hand.

A Skill matrix shall be accessible for all manufacturing and inspection processes.

In addition, employees who release products shall be trained and regularly assessed. They shall be assigned through a record and delegation of authority. Personal release stamps shall be granted and shall only be used by the person with the authorization. Each stamp shall be recorded with the date of release, the date of withdrawal and the Signature of the Employee.

Electronic approvals are authorized when the process demonstrates its robustness and the full traceability to the employees who performed a specific task, release operation or inspection on the product.

Procedures shall be implemented to ensure that eye examination for visual acuity are administered by a qualified / licensed ophthalmologist to all individuals performing visual inspection and/or other product

acceptance activities that require visual acuity. It is recommended for eye examinations to take place every 2 years or in line with customer requirements.

Suppliers must ensure that all their employees are aware of their contribution to product conformity, product safety and the importance of ethical behaviour.

The requirements listed above are also fully applicable to temporary employees.

The Supplier shall document the knowledge gathered within its organisation and ensure that it is maintained and transmitted over the years. A process shall describe the structure of the methodology implemented.

7.0 Change Management and communication

7.1 Changes in Quality Management System

The Supplier shall officially inform AIE Quality Department immediately regarding the following:

- New certificates (to be sent to AIE Quality Department as soon as certificates are released)
- Change of the nominated quality representative.
- Significant change to the quality management system
- Major audit findings (ISO 9001, AS/EN9100, AS/EN9120, NADCAP…)
- Loss of QMS certification (ISO 9001, AS/EN9100, AS/EN9120, NADCAP…)
- Loss of government or export licences

7.2 Change Management

The Supplier shall define a procedure to clarify how Product Change Control is managed through its organisation, how the impacts of change understood and mitigated, and how verification of change is managed and communicated.

A product or process change is anything which may affect form, fit, function, reliability, safety, delivery, service, or compliance with design, regulatory and statutory requirements.

Changes include but are not limited to:

- Customer notified change
- Location changes of manufacturing or logistics facility.
- Change of manufacturing source.
- Change of any material, service, special processing source.
- Loss of product certification that could affect supply to AIE.
- Change of manufacturing process (manufacturing methods, parameters, machines, inspection method…) which could affect the characteristics of the parts.
- Changing a sub-component of a specific end article (Including source)
- Design change affecting fit, form, or function.
- Packaging change (included labelling)

- Any change (minor and major) on a safety critical item
- Key Characteristics

For such change, The Supplier shall inform AIE Quality Department at the earliest opportunity (i.e. decision stage) before implementation to enable relevant review and approvals to be processed and formally request with an Engineering Change Request document.

No change to an AIE Designed product shall be implemented by the Supplier unless prior agreement is provided in writing (formally) by AIE Quality Department. The supplier shall utilise the concession process in all instances.

The concession shall contain the following as a minimum:

- All changes identified and quantified
- The risk mitigation plan
- Associated Costs (Materials, Labour, Obsolescence etc)
- Introduction date (Run in / Run out)
- Part Identification & Packaging Identification
- Product approval submission plan

All instances of change must be approved through either a FAIR or PPAP depending on the SQAR requirements. No change product shall be shipped prior to the approval of the FAIR / PPAP.

7.3 Control of manufacturing documentation change

Any changes made to manufacturing documentation (e.g., work instructions, travellers, routers) shall be recorded, dated and traceable to an authorised person making the change (e.g., name, signature, stamp, electronic signature). The original information shall be legible and retrievable after the change (e.g., single line through). Corrections should only be made with permanent ink (black or blue in colour). Amendments with Pencil are strictly forbidden.

The use of correction fluid is forbidden.

8.0 Process & Production Validation

8.1 Risk Management

The supplier shall have a process for identifying and managing risks within its business in line with ISO9001/AS9100.

8.2 Production Preparation

The supplier (Classification A, B & C) shall identify and control the variation of Process Key Characteristics (refer to AS9103), but also mitigate risks relating to the organisation and its personnel (human factors and management of responsibilities shall be considered).

Each manufacturing process shall be regularly reviewed against potential risks of non-conformities or delays in the customer delivery request date.

As such, the tools listed below as a minimum (or equivalent) shall be implemented, regularly reviewed, and assessed:

- Process FMEA,
- Manufacturing Flow Chart,
- Product Control Plans,
- Measurement Systems Analysis (MSA),
- AS9145 Advanced Product Quality Planning or equivalent can be used,
- PPAP

8.3 FAIR / PPAP Requirements

For all suppliers (classification A, B & C), the supply of parts shall be covered by a FAIR in accordance with AS9102 during development for the current release level.

Following design freeze and prior to job 1 a PPAP level 3 shall be required. Any changes including engineering, manufacturing process, manufacturing equipment or manufacturing location shall require revalidation of the FAIR / PPAP.

Approval requirements applicable to all products shall be communicated by the SQAR Code on the purchase order.

Any discrepancies or non-conformances discovered during the approval process shall be documented and communicated to AIE Quality as a concession / deviation prior to submission of the FAIR/PPAP. Where the concession / deviation is approved by AIE Quality a copy of the approved concession / deviation shall be submitted as part of the FAIR/PPAP submission.

The batch of products / samples reviewed during the FAIR/PPAP process and delivered to AIE shall be identified by means of a label stating FAIR/PPAP SUBMISSION.

FAIR/PPAP shall be sent by email to AIE Quality Department. Bulk supply shall only be released by the Supplier once the FAIR / PPAP has been approved by AIE and the supplier has a formal signed approval.

8.4 Validation of Catalogue and Standard Items

Suppliers (Classification D, E, F, G & H) are not required to provide a FAIR / PPAP under normal circumstances. Approval will be made on receipt, review and acceptance of an authorised Certificate of Conformity, Test Certificate, Calibration Certificate or Test Report together with the correct labelling and packaging requirements being met.

The specific requirements for approval shall be communicated via the SQAR Code on the purchase order.

The supplier shall keep all the records demonstrating full compliance towards the standard, the catalogue requirements or license holding requirements.

8.5 Product Safety

Where product is implied or defined as safety critical the supplier shall demonstrate a satisfactory level of associated risk management and control to the product and processes during the entire product life cycle.

8.6 Product Control

The Supplier shall develop documented controls appropriate to the product and process characteristics to ensure product conformity. These include such controls as process parameters, the characteristic to be controlled, equipment used, frequency of checks and proposed sampling method.

Results of in-process inspections shall be in line the planned requirements to confirm product conformity.

8.7 Visual & Dimensional Inspection

Aerospace parts require 100% inspection for visual defects.

Visual aids or acceptance criteria should be defined by the supplier when national/international standards or customer specifications do not apply or exist.

The supplier shall ensure visual inspection activities are performed in a satisfactory environment with adequate light intensity so that product conformance is maintained throughout the production process through to final inspection. Industry standards such as DIN EN12464-1 can be used as a guidance.

Sampling techniques are forbidden for the inspection of Critical or Major Characteristics and for Safety Critical Items, unless agreed with AIE Quality Department.

Results of inspections must be recorded and validated by authorised personnel. Measured values of dimensional inspection shall be recorded when specified by the product control/ inspection plan.

Selection of measuring equipment shall be adequate to the inspection feature and determined in line with AS13003 Measurement System Analysis

8.8 Control of Measuring Equipment

Measuring equipment used to verify product and process conformity must be calibrated and traceable to a relevant national or international standard. Records of calibrated equipment shall be maintained.

Measurement equipment shall be maintained in a good condition and checked for evidence of damage or wear to ensure measurement accuracy.

If equipment is found to be out of calibration, actions shall be taken to identify and rectify any affected product, including product already despatched.

9.0 Traceability and Control of Records

9.1 Traceability

The Supplier shall ensure full traceability (upstream and downstream) from raw materials to final product supply.

Traceability is mainly built around raw material lot numbers and process operations (Works orders…):

> Note 1: Traceability shall be maintained from parent to child batches (i.e.: Assemblies and Split batches)
>
> Note 2: All product and material quantities must be accounted for and traceable through records (i.e.: First off, Lost, scrapped, test pieces…)

The supplier shall control any unique / serialised identification of the product when required to do so as specified in the AIE product definition.

9.2 Control of Records

Documentation and Records shall be maintained, stored, legible and retrievable within 48 hours.

Control of records shall allow the recovery of a readable version of any records (including electronics records integrity)

Corrections to records shall be recorded, dated, and traceable to the person making the change using a permanent marking method with the original data being legible and retrievable after the change.

- The storage, usage and disposal of records are performed in a manner appropriate to their security classification (when stated) and will prevent unauthorised or fraudulent use.

Category	Period	
A	Permanent	Retained permanently or until the Customer has instructed the Supplier to dispose of the records.
B	10 years	Retained for ten (10) years minimum commencing from the date that the product was delivered to the customer. The Supplier can dispose of these records at the end of the specified period once approval is granted.

See annex for examples of category A and category B records.

The Supplier shall ensure that:

- No records relating to the supply of product to AIE shall be destroyed without formal AIE Quality Department authorisation before or after the required retention period,
- Destruction of records is traced, irreversible and confidential,
- Records are destroyed in accordance with pre-determined conservation periods.

10.0 Release documentation, Identification and Packaging

10.1 Certificate of Conformity / Advice Note

The Supplier shall deliver the parts accompanied by an authorised certificate of conformance (EN 10204-2.1 certificate or similar for Non-Metallic Products, where performance / test requirements exist this shall be a 3.1 type of certificate reporting the results of the performance / test).

All other required documentation will be requested and flowed down via the SQAR Codes on the purchase order.

The Certificate of Conformance shall have a unique traceable document reference number and shall mention:

- Suppliers name and address
- Delivery address
- Purchase order number
- Description of the product
- Part number (as referenced on the purchase order)
- Traceable reference (serial number, article batch number, as applicable)
- Date of manufacture or Cure Date when applicable.
- Quantity
- Conformance / compliance statement [1]
- Signature of person authorized to release the product.

The Certificate shall also provide additional information (when applicable):

- First Article Inspection Report (FAIR)
- Production Part Approval Plan (PPAP)
- Any applicable Customer Approval or Quality Plan number
- Production Permit number or Concession Number
- Performance / test results

[1] Typical compliance statement: "Certified that the whole of supplies hereon has been inspected / tested and unless otherwise stated, conform in all respects to specification, drawing and purchase order requirements".

Note: The standard EN10204 can be used as a guide to issue a Certificate of Conformance.

10.2 Product certificates

AIE shall determine and flow down all characteristics to be reported in the product certificates such as Acceptance Test Reports or EN10204-3.1 type certificates. However, when the characteristics to be reported in EN10204-3.1 type certificates are not defined, the following rule applies:

- All Critical Characteristics noted on the drawing must be reported.
- For other parts: the 3.1 certificate report the results of the Supplier Inspection Drawing

10.3 Packaging and Identification

The type of packaging shall be defined by the supplier and approved by AIE when required taking into consideration the environment and shipping stresses that could affect the part during handling and shipping. The packaging must be of a standard to prevent damage, deterioration and contamination during shipment and storage to ensure the proper life storage of the parts.

Returnable packaging should be the preferred solution when possible. All packaging including those deemed as returnable shall be clean and free from FOD.

The supplier shall prevent the mixing of either different part numbers or batches of parts within the same packaging.

Do not use packaging materials that can cause deterioration/corrosion with consideration taken to protect the product using Primary, secondary, and tertiary packaging methods.

Individual boxes must not exceed the recommended legislation for weight requirements. Anything above this weight must be palletised and secured accordingly.

Electrostatic sensitive items must be packaged with anti-static material to prevent static damage and marked as static sensitive, including the documentation.

Items with open orifices must be capped, bunged, or packaged in a way to prevent contamination/FOD during storage and shipping.

Bulk packaging is accepted unless specific packaging is required or if parts must be protected through individual packaging.

Where required by the drawing, all parts / components shall be physically and permanently identified and serialised, markings must be clear and legible and as per drawing requirements.

Part labels and all shipping / advice documentation shall include the AIE Purchase Order Number, Part Number and Revision Level, batch, and date of manufacture as a minimum.

10.4 Cure Date and Shelf-life Restrictions

For elastomer products, cure date shall not exceed twelve (12) months unless preauthorisation has been given by AIE Quality Department. In some instances, more restrictive rules could be applied by the Customer. Any such requirements are identified in the purchase order sent to the Supplier.

Limited shelf-life articles shall be delivered with at least 75% of the specified life/calendar life unless specified in any applicable material specification, engineering requirement or customer specific requirement flowed down.

For items made from rubber, UV protected sealed bags shall be used. Packaging materials shall be compatible with rubbers (refer to national or international standard such as ISO2230, ARP5316 …)

The Supplier clearly identifies each bag with:

- The AIE Purchase Order Number
- The AIE Part Number and Revision
- The Quantity
- The Article Batch Number
- The Cure date when applicable or date of manufacture or expiry date
- QR Codes are to be placed on the packaging of the product containing the information above

11.0 Management of Non-Conformity

11.1 Control of non-conforming products

The Supplier shall:

- Establish a method of detection and feedback of product nonconformities or process noncompliance.

- Contain any nonconformities by segregating (or at a minimum identifying) the product or process to prevent its unintended use or delivery.
- When reduced inspection or sampling plans are used for Dimensional Inspection, the full batch shall be inspected when an article is detected as non-conforming.
- Take necessary actions to contain the effect of the nonconformity on other processes or products, including potential non-conforming products that might be delivered to Customers (official 'Quality Alert' notification shall be sent to AIE Quality Department within 24 hours).
- Clearly and permanently mark (or establish alternative controls to prevent use) product dis-positioned for scrap until physically rendered unusable.
- Take appropriate corrective action that also includes read across activities and preventive actions.
- Maintain records related to the control of nonconforming product.

11.2 Deviation Permits / Concession requests

The Supplier shall discuss any potential concession applications with AIE Quality Department prior to submission. Where provisionally agreed a formal concession document will be forwarded to AIE Quality for review and acceptance by the supplier prior to the shipment of the product.

Applications for Concessions/Permits must be accompanied with a corrective action report detailing how future improvements will be made to avoid re-occurrence.

Any part subject to Production Permit or Concession Request shall be clearly identified indicating the concession request reference and identified on the shipment advice note and/or the Certificate of Conformity.

The supplier can either use their own Concessions/Permit blank or if needed request from AIE Quality.

11.3 Non-Conformance 8D Process

From receipt of an 8D or audit finding the standard response times shall be:

- Initial Response: 24 Hours – to determine how AIE will be protected with continuity of supply.
- Containment Response: Maximum 48 hours from Initial AIE contact. All potential non-conforming product is contained, and short-term product continuity is confirmed.
- Root Cause Investigation: 10 working days – to demonstrate investigation has taken place into the true Root Cause of the complaint
- Full Response: 28 working days – The full corrective action response is given with suggested corrective actions and any plan required to be agreed in full implementation of those actions.

AIE Quality Department may request specific response dates in line with customer requirements that may also be dictated by the criticality of the complaint.

8D Reports shall be used to demonstrate that all activities have been completed to protect the Customer and prevent issues from reoccurring. AS13000 can be used as a reference for the methodology.

8D responses shall include the relevant Root Cause analysis tools depending on the type and severity of the non-conformance.

Human Factors shall be considered in the root cause analysis and result of the investigation shall be mentioned in the 8D report.

11.4 Control of reworks

Where customer requirements allow rework of products for non-conforming items the method shall be formalised, fully traceable and documented.

AIE Quality Department shall be notified if any reworks affect the original product specification including fit, form and function.

Any agreed rework of product parts should be identified throughout the supplier's production system (Router, Job Card, Works order etc…) and subsequently on the delivery information documents, C of C and packages.

Batch traceability must be maintained in all instances.

12.0 Special Processes

Suppliers of Special processes shall hold the relevant design authority / End user approval. Where no approval is flowed down, NADCAP or equivalent approved suppliers shall be used.

Special processes are, but not limited to:

- Coatings
- Composites
- Heat Treatment
- Material Testing Laboratories (external laboratories) when specifically required.
- Non-Destructive Testing (FPI, MPI, Xray.)
- Surface Treatment
- Welding

13.0 Prevention of Counterfeit Parts

The supplier shall plan, implement, and control processes, as appropriate to their organisation and the product, for the prevention of counterfeit or suspect counterfeit parts and material use and their inclusion in products delivered to AIE.

Counterfeit parts and material affect all supply classes, including but not limited to; Electrical, Electronic and Electromechanical (EEE) parts, raw materials, hardware, fasteners, valves, bearings, castings, epoxies, paints, lubricants, adhesives, refrigerants, batteries etc.

"Counterfeit Work" means work that is or contains parts and material misrepresented as having been designed and/or produced under an approved system or other acceptable method. The term also includes approved work that has reached a design life limit or has been damaged beyond possible repair but is altered and misrepresented as acceptable.

The Supplier shall notify AIE immediately if they become aware or suspect that they have supplied any parts that may contain counterfeit items.

If any parts delivered to AIE constitutes or includes counterfeit items, the supplier shall, at its expense, promptly replace the affected items with those proven to be genuine and conforming to the requirements of the contract.

AS6174 (Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel) & AS5553 (Counterfeit Electrical, Electronic and Electromechanical) as applicable can be used by the supplier as a guidance to the industry requirements set for control of counterfeit parts.

The supplier shall also ensure that the requirements of counterfeit control are suitably made aware to its employees and its sub tiers.

14.0 Foreign Object Damage

The supplier shall plan, implement & control processes to ensure the prevention, detection, and removal of Foreign Objects (FO) and subsequently Foreign Object Damage (FOD) and as such is eliminated from all parts prior to shipment into AIE.

A FOD prevention programme recommended to be in line with the standard AS9146 shall be implemented and flowed down to any sub-tier suppliers that can impact the product.

Potential FOD includes but is not limited to burrs, chips, dirt, corrosion, and contamination resulting from the manufacturing, assembly, maintenance, processing, cleaning, storage, and subsequent packaging of parts.

Suppliers must ensure all passageways – cast and/or machined are clear of chips, core material, dirt, breakout of cast walls, etc.

Prior to closing inaccessible or obscured areas and compartments during assembly, supplier shall ensure the areas are free of FOD.

The Supplier shall ensure that the responsibility for the FOD prevention program is clearly defined and appropriate personnel have received FOD awareness training.

15.0 Obsolescence Management

The Supplier shall notify AIE Purchasing of any part or material obsolescence as soon as the information becomes available, with an expectation to provide notification at least six months prior to the last date an order will be accepted. This is particularly pertinent to COTS items.

To this regard, the Supplier shall implement a Part Obsolescence Management Process as appropriate. This Process shall include the following elements at a minimum:

- Obsolescence planning and risk analysis at the design stage
- Annual assessment of Product Bill of Material(s) to identify any obsolescence that will potentially impact delivery of product.
- Proactive detection of part, material, or manufacturing/test equipment obsolescence issues
- Action Plan to resolve each obsolescence issue, including forecast analysis and product support decisions.

16.0 Material Safety Data Sheets

All potentially hazardous material shall be accompanied by the relevant Material Safety Data Sheet.

17.0 Business Continuity Plan

The Supplier shall maintain a Business Continuity Plan (also known as Risk Management or Contingency Plan) to avoid or minimise the risk of supply chain shortage in case of an emergency event.

18.0 AIE Owned Tooling

It is the supplier's responsibility to ensure that any tooling owned by AIE is used, maintained, stored, and protected to ensure that the product integrity and conformity to Fit, form, function against the intended product definition is maintained.

The supplier should maintain a tool register and the tool shall be identified as belonging to AIE and permanently marked with the Part number / Tooling purchase order number / tooling number. Multi cavity tools should also show the relevant cavity.

Any anomalies found in such tooling must be immediately reported to AIE Purchasing and Quality.

The supplier must contact AIE Purchasing & Quality should they wish to adjust, refurbish, remove, dispose, or intend to scrap off any tooling owned by AIE.

Under no circumstances can any such tooling be used for use on any other customer orders.

It is the responsibility of AIE to notify and collect tool(s) from the supplier if required.

AIE could request that the supplier permanently disposes of the tool. In this case, the tool shall be permanently damaged to avoid being used for any other purpose. Evidence of the disposal will be required and submitted to AIE Purchasing and Quality.

19.0 Control of Records & Record Category (Example list)

All records pertaining to quality shall be stored and maintained in a legible form. No records will be destroyed until authorised by AIE. Specific projects and regulatory bodies may require more extended retention periods, and this will be notified in advance to the supplier.

It is the responsibility of the supplier to ensure that it complies with all statutory, regulatory, health & safety and environmental requirements for the processes employed.

The use of correction fluid is not permitted on any AIE related documentation. Any amendment shall be made by crossing out the error with a single line and initialling the change.

Record Category A (Product related – Permanent Record Retention)

Raw material approvals

Initial sample report (ISIR, FAIR, PPAP), where contractually required

SPC data and material approvals, where applicable

Manufacturing travellers or production records

Inspection reports (dimensional, visual and test where required)

Material Test report (for each batch)

Acceptance Test Report

Non conformance data

Requalification data, where contractually required

Drawings, specifications, Inspection Plans

FMEAs, Control Plans, Process Flow Charts, where contractually required

Certificate of Conformance (such as EN10204-2.1) / Advice Notes

Record Category B (Others records – Minimum 10 years Record Retention)

Calibration records

Work Instructions / Standard Operating Procedures

Product Audit results

Management Reviews, KPIs

Supplier approvals (cat B)

Audit reports, both internal and external (cat B)

Quality Plans (cat B)

Order Review records (cat B)

Training records for all positions responsible for processing products (cat B)

20.0 Revision History

Detail	Issue Level	Date	Released
First Release	1	03/02/2021	Matt Jeavons
SQAR Codes and other minor amendments	2	20/02/2023	Richard Evans
Supplier product approval table updated Page 9	3	22/08/2023	Jeremy Bell