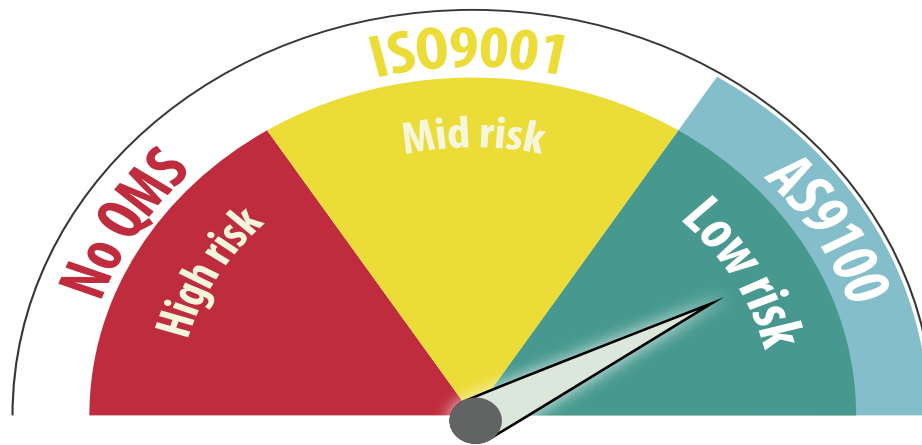


Is Your Supplier's Quality Certification Putting You at Risk?

Why Requiring AS9100 (vs. ISO9001) Certification Can Help Future-Proof Your Products





Are you working with component suppliers who have met the latest quality certification requirements? If not, you may be putting your project designs at risk of being rejected further downstream. In mission-critical applications, suppliers with quality management certifications are not only requested, but are often required for design approval. This is most common in the aerospace and defense industries where ISO9001 certification requirements are standard. However, the more stringent AS9100 certification is being demanded more frequently.

Increasingly, aerospace-related designs that fail to meet a single quality requirement out of many are likely to be rejected outright. This could mean that the use of ISO9001-certified suppliers may result in designs being retroactively rejected, should the client's quality requirements change to

AS9100. By selecting an AS9100 supplier at the outset, you can save yourself lengthy and expensive redesign and requalification, and help future proof your aerospace and defense-related projects.

While this level of quality is critical in industries such as aerospace, military and defense, where component failure can have catastrophic consequences, even when working on non-aerospace and defense projects, it is always advisable to use at minimum, ISO 9001 suppliers. But there are additional benefits to be gained in those applications from choosing top-tier AS9100 certified suppliers. Companies that have achieved more stringent certifications have significantly invested in their quality management systems (QMS) and therefore are in a position to produce components that bring greater value to your products.

To help explain how supplier accreditation can be crucial to the success of your products, and greatly increase customer satisfaction, we are providing an overview of the two leading quality management system standards and their attributes. This will help you identify the best direction for future design projects.

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The Basics: AS9100 and ISO9001:2015 Certifications

Maintained by the International Organization for Standardization (ISO), ISO 9001 is a general, international standard for implementing a QMS. The Aerospace Standard 9100 (commonly known as AS9100) incorporates all the requirements of ISO 9001, with additional, more stringent stipulations required by many aviation, space and defense organizations. This means that any component manufactured to AS9100 standards is also in compliance with equivalent ISO9001 standards. AS9100 is maintained by the Aerospace division of SAE International and the International Aerospace Quality Group (IAQG).

In October 2016, Aerospace Standard 9100, Revision D (commonly known as AS9100 Rev. D) was released. Companies with the previous AS9100 Rev. C certification are required to be AS9100 Rev. D compliant by September 2018, to avoid losing their certification. (AS 9100 Rev. D also incorporates the requirements stipulated in ISO 9000:2015.)



Additional AS9100 rev D Criteria

AS9100 Rev. D (compared to Rev. C) includes additional criteria in the categories of Operations Risk Management, Product Safety, Special Requirement—Critical Items, Configuration Management, On-Time Delivery, Counterfeit Parts Prevention and Expanded Requirements for Production and External Providers.



Here are the added stipulations:



Operations Risk Management

This section stipulates the planning, implementing, and process control for managing operational risks to the achievement of applicable requirements.

This includes:

- Assignment of responsibilities for operational risk management
- Definition of risk assessment criteria (e.g., likelihood, consequences, risk acceptance)
- Identification, assessment, and communication of risks throughout operations
- Identification, implementation, and management of actions to mitigate risks that exceed the defined risk acceptance criteria



Product Safety

This is a new requirement which requires the supplier to review and deliver any product safety requirement mandated by the aerospace customer in their purchasing order.



Special Requirements—Critical Items

Suppliers need to be aware of any special requirements and/or critical items specified by the aerospace component manufacturer.



Configuration Management

This section specifies the planning, implementation, and process control for configuration management in order to ensure the identification and control of physical and functional attributes throughout the product lifecycle.

This process shall:

- Control product identity and traceability to requirements, including the implementation of identified changes
- Ensure that the documented information (e.g., requirements, design, verification, validation and acceptance documentation) is consistent with the actual attributes of the products and services



On-Time Delivery

Periodically review external provider performance including process, product and service conformity, and on-time delivery performance.



Counterfeit Parts Prevention

This establishes basic requirements in selected areas to minimize counterfeiting. An internal quality process details what to look for, what to inspect for and what to purchase. This includes everything from the part itself to the accompanying paperwork.



Expanded Requirements for Production and External Providers

This is a requirement for qualification of competence, supplier awareness of their contributions to product or service conformity, contribution to product safety and importance of ethical behavior.

Order and Manufacturing Process ISO9001 vs AS9100

(AS9100 includes all ISO standards except where AS9100 specific standards replace or augment ISO standards)

	ISO9001	AS9100
Contract/Order Review	Requires conformance to standard order review procedure	AS9100 replaces with required conformance to advanced order review procedure
Raw Material Purchasing	Allows purchase from any supplier but supplier must conform to ISO standards	AS9100 replaces with requirement to purchase strictly from approved suppliers list
Material Inspection and Testing Process, Equipment and Status	Allows material acceptance based on material certification	AS9100 adds requirement for monthly lab testing of sample material
Product Identification and Traceability	Must Follow ISO process requiring standardized tagging and marking of parts	Same requirements as ISO 9001
Customer Supplied Product	Must follow ISO verification process	Same requirements as ISO 9001
Manufacturing Process Control	Must conform to ISO manufacturing procedure standards including standard first article inspection	AS9100 replaces with more stringent AS9102 rev B first article inspection full report
Counterfeit Parts Risk Mitigation Plan	—	AS9100 adds requirement for additional process to identify and manage counterfeit parts
Foreign Object Detection	—	AS9100 adds requirement for implementation of internal procedure for detection of foreign objects
Control of non-conforming product	Must follow ISO identification/segregation and rejection process	Same requirements as ISO 9001
Handling storage	Has standardized requirements for Handling, storage, preservation, packaging, delivery	AS9100 adds more stringent requirements or part labeling process
Statistical Techniques (post-order review)	Requires standards for supplier corrective action, internal corrective action, vendor rating analysis and customer satisfaction review process	Same requirements as ISO 9001
Training	ISO and AS9100 require internal training of all employees to adhere to their quality management standards.	



How does complying with the latest standard impact the manufacturing process?

The short answer is that it is a further strengthening of the processes already in place. It holds suppliers accountable to a more stringent level of quality control. Here are some examples.

- Ensuring that the QMS process operates in a controlled state of predictable performance.
- Establishing processes performance measures that adequately characterize the efficiency and effectiveness of the process in meeting the needs of all customers and other interested parties.
- Ensuring all aspects of QMS improvements are performed. This includes creating documentation, tracking performance, and securing and allocating resources.



Why should engineers be interested in working with AS9100 Rev D certified suppliers?

Every five to 10 years, or so, these standards change. When the standard is altered, so is the supplier's process and facility. These changes are often significant and typically result in the production of superior aerospace components.

A well designed and implemented quality management system, based on the AS9100 standard has been shown to provide organizations with the following benefits:

Reduced costs

Improved product reliability helps drive costs down. Compliance means that the product is manufactured correctly the first time, eliminating the need for costly rework and returned goods.



Better process control and product flow

Following the standard guidelines means that the product flows through the system in a compliant, documented manner. The end result is that production is quality-driven and efficient, which gets the product to the customer quickly.

Better process documentation

Forms, material certifications and any other documentation the aerospace company requires can be supplied.

Greater employee awareness of quality.

As a result of customer-focused management and employee training, quality awareness is heightened.

Winning trust

Once certified, a supplier is included in the Online Aerospace Supplier Information System (OASIS) database alongside other certified member organizations and auditors – winning trust as a preferred supplier.





About MW Components

MW Components is focused on designing and manufacturing highly engineered precision metal components and assemblies for aerospace and defense applications.

MW Components specializes in on-time delivery of electrodeposited bellows and assemblies, edge welded bellows and assemblies, electroforms, machined springs, compression springs, torsion springs, stampings, precision springs in various shapes, (round, flat, conical, oval), wire forms, assemblies and fasteners. MW Components designs and manufactures precision-metal components for a wide range of aerospace applications, including:

- Engines
- Flight Controls
- Propulsion
- Landing Gear
- Interiors
- Avionics

Our products are commonly specified in mission critical components, and so everything we do meets the rigorous system safety and performance standards of organizations such as the FAA, DoD, and NASA.

For more information about how our quality approach to manufacturing can enhance your product performance, feel free to contact us.



About MW Components

MW Components is focused on accelerating the entire process of delivering custom, stock, and standard parts to virtually any volume and against demanding deadlines. We work to highly complex tolerances. We help simplify the management of any number of different components. And we take a no-compromise approach to quality. With MW Components you can be sure you'll get the right part to the right specification when and where you need it.



MW Components

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