

AS13100 OVERVIEW

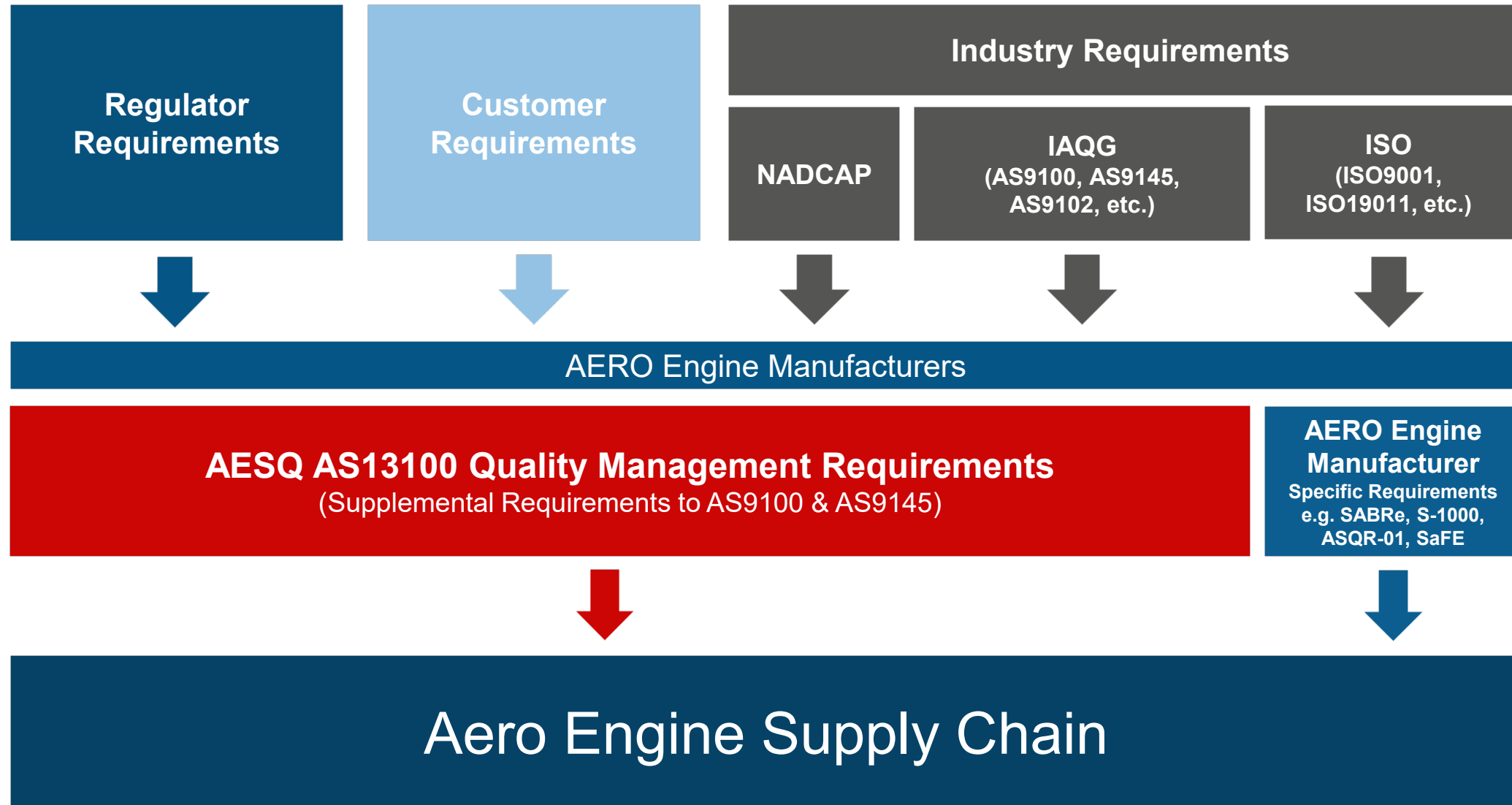
STRUCTURE & KEY HIGHLIGHTS



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Aero Industry Requirements Future Vision



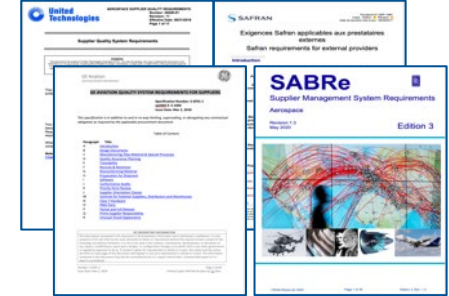
AS13100 Creation Process



OEM Unique Requirements

Existing Engine Maker Supplier Requirements

Harmonized Requirements



Future Engine Maker Supplier Requirements

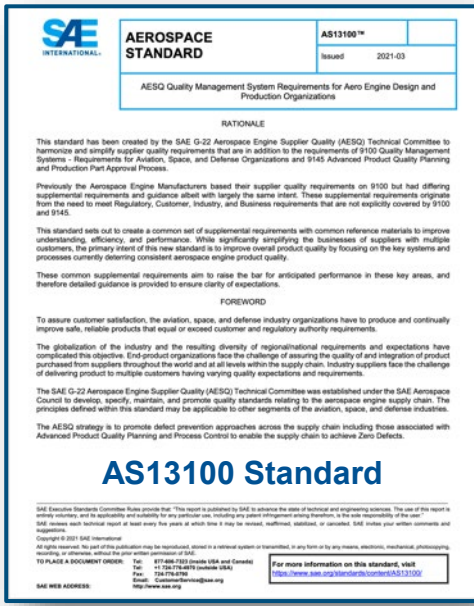
Overall Number of Requirements reduced by >50%

Starting Point September 2018



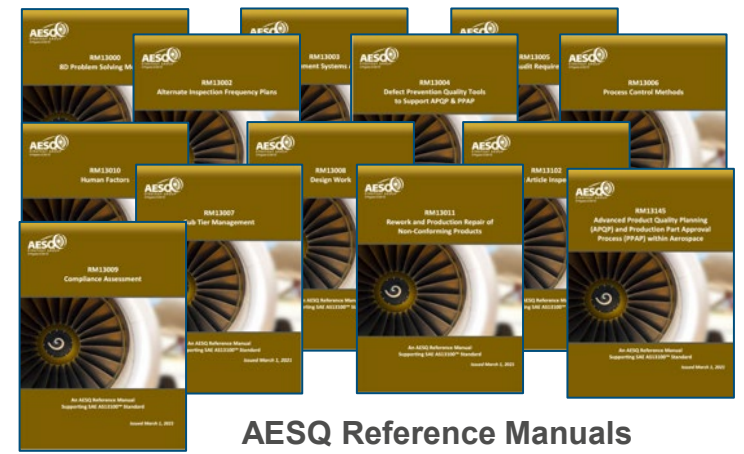
Requirements

Existing & WIP AESQ Standards



AS13100 Standard

Supporting Guidance & Best Practice Material



AESQ Reference Manuals

AESQ – Aerospace Engine Supplier Quality Strategy Group

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AS13100 Structure

AS13100 Requirements	Chapter A AS9100 Rev D Supplemental Requirements										Chapter B APQP & PPAP AS9145 Supplemental Requirements						Chapter C Defect Prevention Quality Tools to Support APQP & PPAP							
Clause Number	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	DFMEA	Product KCs	Process Flow Diag.	PFMEA	Process KCs	Control Plan	MSA	Process Capability

Example Extract

9.3 Management Review

9.3.1 General Reference 9100D:09/2016 requirements.

9.3.2 Reference 9100D:09/2016 requirements.

9.3.2.1 Management Review Inputs - Supplemental Requirements

Management Reviews shall be conducted at least annually and consider the following performance topics:

- **Cost of Poor Quality (COPQ).**
- **Manufacturing / Assembly Right First Time / First Pass Yield.**
- **Customer scorecards (where available).**
- **Human Factors reporting.**

AS13100 Customer Specific Requirements



Designed to Include Customer Specific requirements that could not be harmonized within AS13100.

These documents shall:

- Require Compliance to AS13100
- Signpost to Customer Specific Documents (where required)
- Definition of customer specific acceptance thresholds called out in AS13100 e.g., Cpk, GR&R scope, etc.
- Additional Customer Specific requirements not defined within AS13100
- Defines company specific key roles and accountabilities for approvals
- Includes specific IT interface requirements

AS13100 Requirement Highlights



POLL QUESTION #2: Which organization type best describes your organization?

AS13100 PARAGRAPH REFERENCE	ORGANIZATION TYPE					
	TYPE 1: MAKE TO PRINT	TYPE 2A: DESIGN AND MANUFACTURE	TYPE 2B: DESIGN ONLY	TYPE 3: DISTRIBUTOR	TYPE 4: SPECIAL PROCESS	TYPE 5: RAW MATERIAL
4.3.1	X	X	X	X	X	X
4.3.2	X	X	X			
4.3.3	X	X	X	X	X	X
4.3.4	X	X	X	X	X	X
4.3.5	X	X	X	X	X	X
4.4.3	X	X	X	X	X	X
5.1.1.1	X	X	X	X	X	X
5.2.1.1	X	X	X	X	X	X
5.3.1	X	X	X	X	X	X
6.1.3	X	X	X	X	X	X
7.1.3.1	X	X	X	X	X	X
7.1.5.1.1	X	X			X	
7.1.5.1.2	X	X			X	
7.1.5.1.3	X	X			X	

ORGANIZATION TYPE	QMS APPROVAL (MINIMUM REQUIREMENT)
Type 1: Make to Print and Type 2A: Design and Manufacture. Manufacture, inspect, test, and certify the conformance of semi-finished and/or finished products (installed on aerospace engines or a component of such a product) to proprietary engineering drawings whether customer design, or organization design.	9100 registration.
Type 2B: Design only. Contracted Design Responsible Organization / Partner / Supplier tasks Organizations.	As defined by Customer's requirements.
Type 3: Distributor.	9120 registration.
Type 4: Special Process (2.3). As part of an Organizations manufacturing scope and/or Special Process Houses.	Nadcap or Customer's requirements.
Type 5: Raw Material. Manufacture, inspect, test, and certify the conformance of Raw Material to proprietary engineering specifications.	ISO9001 registration.
Production Shop Assist Only. Offload of planned manufacturing operations.	Per Organizations Requirements based upon scope of work, unless specified by the customer.
External Calibration or Laboratory Service Provider.	ISO / IEC 17025 or National Equivalent, e.g., UKAS, COFRAC, NIST.
Industry Standard Part or Industry Standard Raw Material Manufacture.	ISO9001 registration.
Castings and Forgings produced to a proprietary design.	9100 registration.

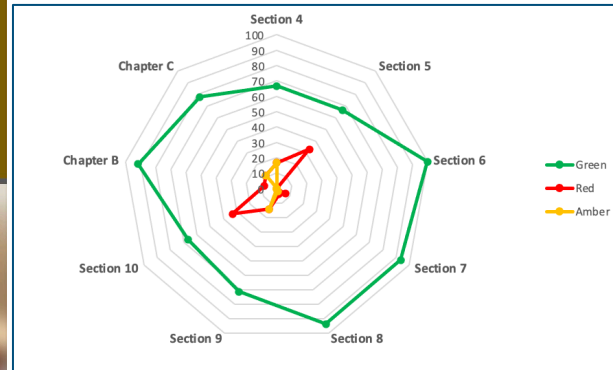
Table 1 provides a guide to the applicability of AS13100 Sections to Organization scope.

Table 2 defines an agreed set of Certification Requirements, matched to the scope of the supplier's activities.

AS13100 Requirement Highlights

RM13009 Compliance Assessment

An AESQ Reference Manual Supporting SAE AS13100



Clause Reference	Clause Title / Subject	Organization Process Reference (or comment)	Compliance Status
8.3.4.3	Design Reviews – Supplemental Planning	Not a Design responsible supplier	N/A
7.2.2	Auditor Competence	Auditor competence requirements are defined in our QMS in procedure number QP005, Rev D. This procedure fully complies with the requirements of AS13100 clause 7.2.2.	G
7.2.3	Delegated Product Release Verification (DPRV) Representative Training	All relevant inspection personnel are trained in accordance with this requirement. It is defined in our QMS in procedure number QP009, Rev B.	G
7.2.4	AS 13100 Requirements Training & AESQ Quality Foundation Training	We have identified five personnel within the business that require this training. Their training plans / job profiles have been updated to reflect this as a mandated training. Training is scheduled for July (in 3 months time).	A
7.3.1	Human Factors Awareness	We do not have a Human Factors program at this time. The organization's leadership team are currently reviewing our future approach to HF.	R

Section 4.3.5 requires the organization to conduct a **Compliance Assessment** of their QMS to ensure that it captures all of the requirements of AS13100 and customer specific requirements.

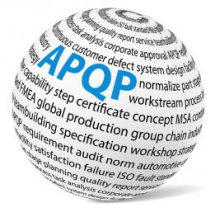
The results of this review are to be provided to the customer upon request.

Any compliance gaps must be highlighted to the individual customer and a resolution agreed.

Reference Manual RM13009 provides information to support this requirement.

AS13100 Requirement Highlights

AS13100 Section 8.3 includes common Requirements for **Design & Development**. Key Supplemental Requirements include;



Specifies AS9145 APQP & PPAP for Managing New / Changed Product Designs



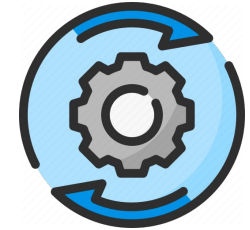
Defines Design FMEA approach to meet Design Risk Analysis requirement



Requires the use of Cross Functional Teams for Design & Development Activities



Defines requirements for Design for 'X' (Manufacture, Assembly, Servicing, Disposal)



Specifies the use of AS9116 to manage Design Changes

Reference Manual RM13008 Provides Guidance for Design Work

AS13100 Requirement Highlights

AS13100 Section 8.4.1, 8.4.2 and 8.4.3 define the additional requirements for Supplier Evaluation, Selection, Control and Performance Monitoring.



Engineering &
Manufacturing
Capability



Quality Control
Capabilities



Purchasing,
Planning & Capacity



Commercial, Legal
& Environmental



Supplier Register
Maintenance



Product
Acceptance



Supplier
Surveillance



Supplier Performance
Monitoring

Reference Manual RM13007 Provides Guidance for Supplier Management

AS13100 Benefits

- 1. Single AESQ Standard aligned to AS9100 / ISO9001**
 - Less Requirements for the Supplier (>50% less)
 - Lower cost (suppliers do not need to buy multiple standards)
- 2. Supported by Free Issue Reference Manual Guides**
- 3. Will minimise the content of OEM Supplier Requirement Standards (SABRe, S-1000, ASQR-01 and SAFe)**
- 4. Creates a common language for Quality, OEMs have adopted standard approaches within their own operations.**
- 5. Aligns to relevant existing industry standards (ISO, AS9xxx, Nadcap, etc)**
- 6. Supported by global approved training resources**
- 7. Enables the AESQ OEMs to provide a harmonised approach to Supplier Development**
- 8. Supplier Compliance continues to be assessed through Customer Audit**
- 9. Allows AESQ to focus on Supply Chain Capability Development**

AS13100 Core Writing Team: Thank you for sticking with it, every Wednesday, for two & a half years, even during the pandemic, to get it published.



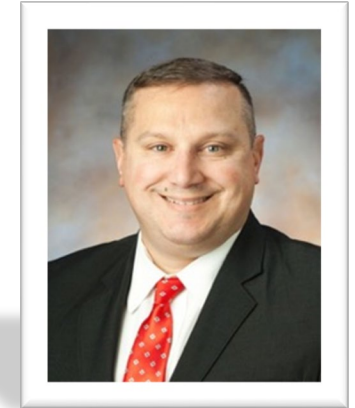
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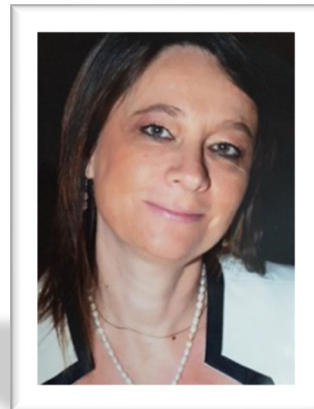
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Thank you to the 99 Subject Matter Experts who created the Reference Manuals

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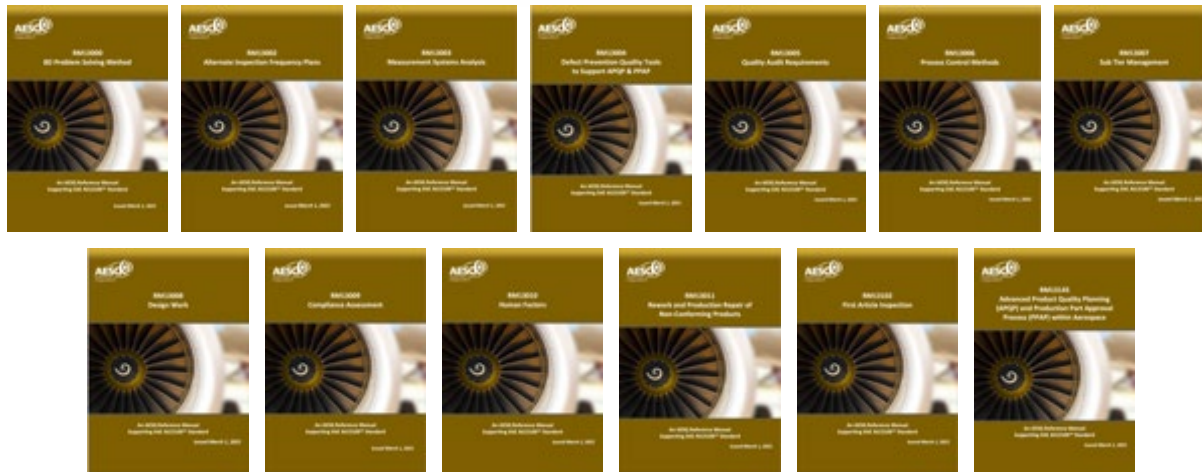


AS13100 Supporting Reference Manuals



AS13100 Standard defines mandated requirements. The Standard is supported by free issue Reference Manuals from the AESQ Website:

→ <https://aesq.sae-itc.com/content/aesq-documents>



Reference Manuals provide industry best practice guidance and case study material on how to deploy quality tools effectively.

Reference Manuals are maintained and updated by the **AESQ Subject Matter Interest Groups** and may be updated at any time when new or revised information becomes available

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