

**Report number A0436**

PRODUCT REQUIREMENTS FOR  
SELLERS OF BOEING DESIGNED DETAIL PARTS  
AND NON-FUNCTIONAL MINOR ASSEMBLIES

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INDEX OF PAGE CHANGES

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## 1. Scope

The requirements in this document shall supplement the requirements of SAE AS9003, Inspection and Test Quality System. These requirements pertain to the inspections, tests and process controls necessary to substantiate product conformance to Boeing Integrated Defense Systems, St. Louis (hereafter referred to as Boeing IDS, St. Louis) requirements. This document applies to the manufacture of Boeing designed products produced under a Boeing IDS, St. Louis purchase contract. These are minimum requirements and do not relieve the supplier of the obligation to produce material meeting all requirements of the purchase contract.

The following specifications form a part of this document to the extent referenced herein. Current revisions are to be used.

Table 1 - Specifications

Specification Number	Title
P.S. 23038	Authority for Material Substitution
P.S. 23051	Authority for Material Substitution (C17 and A-4 Aircraft)
D1-4426	Boeing Approved Process Sources
D6-51991	Quality Assurance Standard for Digital Product Definition
ANSI/ASQ Z1.4	Sampling Procedures and Tables for Inspection by Attributes
ANSI/ASQ Z1.9	Sampling Procedures and Tables for Inspection by Variables for Percent Defective
SAE AS9003	Inspection and Test Quality System
SAE AS9102	Aerospace First Article Inspection Requirement
SAE AS9103	Variation Management of Key Characteristics
ISO 10012	Quality Assurance Requirements For Measuring Equipment

**Boeing IDS St Louis supplemental requirements to SAE AS9003 are listed below. All other portions of SAE AS9003 apply.**

### 4.5 Document and Data Control

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.5 as follows:

- 4.5.3 When the seller receives or uses Boeing digital data as authority for design and/or inspection, then the Seller should review the requirements of D6-51991 and utilize the document as a guideline for implementation of a Digital Data Control process. Document (D6-51991) also provides Boeing's definition of MBD datasets.

- 4.5.3.1 All geometric features of model based definition (MBD) files must be validated.

## **4.6 Purchasing**

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.6.2 as follows:

- 4.6.2.1 All purchase contracts between the supplier and their sub-tier suppliers, in fulfillment of the Boeing IDS - St. Louis Purchase Order, shall address the following:
- a. The applicable requirements appearing in the Boeing IDS - St. Louis Purchase Order, engineering drawing, and/or Special Manufacturing Instructions.
  - b. The latest revision of all referenced Boeing material and process specifications. The supplier shall furnish copies of needed specifications upon request of their sub-tier suppliers.
  - c. The use of Boeing approved sources for processes listed in D1-4426, Approved Process Sources.
  - d. Identification of the product model or program the part number represents (e.g. 68A = F15, 74A = F18, 75A = AV8, 12A = AIS, DA = T45, 17P = C17).
  - e. Identification of the prime division of The Boeing Company that is the design authority (e.g. IDS St. Louis for FSCM Number 76301 and the T45 program, IDS Long Beach for FSCM Number 88277).
- 4.6.2.2 The supplier shall ensure special requirements for parts designated as "Fracture Critical" or "Fracture Critical Traceable" or other designations as defined in the applicable control drawings are clearly defined in all subcontracts for critical parts.
- 4.6.2.3 Unless P.S. 23038 or 23051 (unless otherwise specified by engineering specifications) allow automatic substitution of material, any substitution of materials (sizes or specifications) from engineering definition requirements, the Supplier shall have specific prior written approval from Boeing IDS - St. Louis. When substitution is anticipated, contact the Boeing IDS - St. Louis procurement agent to initiate authority for material substitution (AMS).
- 4.6.2.4 If P.S. 23038 or 23051 (unless otherwise specified by engineering specifications) allows automatic substitution of the material being used by the supplier, the supplier is required to annotate the material information on the supplier's corresponding shop traveler/work order. AMS submittals to Boeing IDS - St. Louis are not required if automatic substitutions are allowed by the applicable process specification.

Supplement SAE AS9003 4.6.6 as follows:

- 4.6.6.1 The supplier shall use only Boeing Approved Sources for processes listed in D1-4426. For the processes listed in D1-4426, the processors must have approval for the specific Process Specification required by the Engineering definition. Information on the approval status of a processor and their process approval can be obtained at <http://www.boeing.com> or by contacting the Boeing IDS - St. Louis procurement agent. Quality problems arising from the use of Boeing approved sources must be reported to the Boeing contact as listed on the Boeing web site. Any non-conforming hardware resulting from these problems must be processed per Section 4.13, Control of Nonconforming Material.

NOTE: Material processed by sources not listed in the Boeing Approved Processor List (when applicable per D1-4426, Approved Process Sources) will result in non-conforming material. Such material will be processed in accordance with Boeing IDS - St. Louis non-conforming material procedures. Such material shall not be shipped from the supplier's facility until a disposition has been received and complied with or until authorized in writing by Boeing IDS St. Louis.

#### **4.10 Inspection and Testing**

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.10.2 as follows:

##### 4.10.2.1 Control of Key Characteristics

- a. KC's identified by Boeing IDS St. Louis shall be controlled as defined in SAE AS9103.

4.10.2.2 Mandatory Inspection Criteria (MIC) called out on the engineering definition shall be physically verified on each part and within specified requirements. Measurement processes shall be appropriate to ensure product is within specification requirements. As evidence that this inspection has been completed, a completed sequence shall be in the work instructions. The results in the form of variable data (actual measurements) of these inspections shall be recorded and available to Boeing IDS - St. Louis upon request or as otherwise specified in the purchase contract.

Supplement SAE AS9003 4.10.5 as follows:

4.10.5.1 First Article Inspections (FAI) shall be performed by the supplier in accordance with SAE AS9102. When documenting the FAI, the Supplier may use the forms contained within AS9102 or their equivalent, so long as the forms contain all the information required by AS9102. Suppliers shall have a complete and valid FAI report on file at all times during the production effort for any specific item.

#### **4.11 Control of Inspection, Measurement and Test Equipment**

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.11.1 as follows:

4.11.1.1 These procedures shall be in accordance with ISO 10012.

Note: Discrepancies and other tooling problems on Boeing owned tools, and/or any hardware found to be nonconforming as a result of a tooling discrepancy, shall be documented on a Boeing IDS - St. Louis material review document, as defined in the purchase order requirements. The material review document shall be forwarded to the cognizant Boeing IDS - St. Louis procurement agent for disposition

#### **4.13 Control of Nonconforming Product**

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.13.1 as follows:

- 4.13.1.1 Nonconforming product that cannot be dispositioned as "rework" or "scrap" shall be submitted to Boeing IDS - St. Louis Material Review Board (MRB) as defined in the purchase contract.
- 4.13.1.2 Boeing IDS - St. Louis furnished material (or hardware produced from this furnished material) that the supplier wishes to scrap, shall be submitted to Boeing IDS - St. Louis Material Review Board (MRB) as defined in the purchase contract.
- 4.13.1.3 Suppliers with Boeing IDS - St. Louis Material Review Authority shall process nonconforming product per Report No. 96X0005 or other applicable purchase contract requirements.

#### **4.14 Corrective Action**

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.14 as follows:

- 4.14.3 Any nonconformance identified by Boeing IDS - St. Louis or the customer on supplier furnished hardware shall be evaluated and corrected on subsequent shipments.

#### **4.16 Control of Quality Records**

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.16.2 as follows:

4.16.2.1 Unless otherwise specified in the purchase contract, quality records shall be on file for four years following the end of the calendar year in which the final entry was made or three years after the final payment of the purchase contract, whichever expires first.

NOTE: Certain Boeing IDS - St. Louis parts designated critical material such as "Fracture Critical" or "Fracture Critical Traceable" have extended record retention requirements. Refer to the applicable requirement document for retention of critical material records.

#### 4.20 Statistical Techniques

No change to SAE AS9003 requirements except as noted below.

Supplement SAE AS9003 4.20.2 as follows:

4.20.2.1 Sampling plans shall be in accordance with ANSI/ASQ Z1.4 for attribute inspections or ANSI/ASQ Z1.9 for variable inspections using Single Sampling plan for Normal Inspection, General Inspection Level II, with no greater risk than an acceptance quality level (AQL) as noted in the table below for specific product types. Use of a sampling plan based on this requirement will constitute an approved sampling plan. Deviations from this requirement shall be submitted to Boeing IDS - St. Louis SQM for approval.

Table 3 – AQL Levels for Sampling

Product Type	AQL
Machined Parts	2.5
Structural Sheet Metal Details	4.0
Castings, Forging & Pressings	4.0
Composites	4.0
Non-Functional/Structural Sheet Metal Assemblies & Flight Test Hardware	In accordance with the Supplier's procedures
Aerospace Equipment and Simulator Parts/Non-Electrical	4.0