

National Aerospace and Defense Contractors Accreditation Program
Requirements for Nonconventional Machining

RATIONALE

AS7116A is being cancelled and superseded by PRI AC7116. The requirements in the document have not changed.

CANCELLATION NOTICE

This document has been declared "CANCELLED" as of July 2008 and has been superseded by AC7116. By this action, this document will remain listed in the Numerical Section of the Aerospace Standards Index noting that it is superseded by AC7116.

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1. SCOPE:

This Aerospace Standard (AS) establishes the requirements for suppliers of Nonconventional Machining Services to be accredited by the National Aerospace and Defense Contractors Accreditation Program (NADCAP). NADCAP accreditation is granted in accordance with SAE AS7003 after demonstration of compliance with the requirements herein. The requirements may be supplemented by additional requirements specified by the NADCAP Nonconventional Machining and Surface Enhancement (NMSE) Task Group. Using the corresponding Audit Criteria (PRI AC7116) will ensure that accredited Nonconventional Machining suppliers meet all of the requirements in this standard and all applicable supplementary standards.

The purpose of this audit program is to assess a supplier's ability to consistently provide a product or service that conforms to the technical specifications and customer requirements. The corresponding audit criteria are also structured to obtain information relevant to management practices and processes that directly or indirectly affect the product or service. This information will be used in the determination of accreditation status and may be used by the supplier to guide improvements in the product or service and the associated processes.

2. REFERENCES:

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15086-0001.

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| AS7001 | National Aerospace and Defense Contractors Accreditation Program (NADCAP) Program Description |
| AS7002 | National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Rules for Implementation |
| AS7003 | National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Program Operation |

2.1 (Continued):

- AS7116/1 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Requirements for Electrochemical Machining (ECM)
- AS7116/2 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Requirements for Electrochemical Grinding (ECG)
- AS7116/3 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Requirements for Electrical Discharge Machining (EDM)
- AS7116/4 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Requirements for Laser Beam Machining (LBM)
- AS9000 Aerospace Basic Quality System Standard
- AS9100 Quality Systems - Aerospace - Model for Quality Assurance in Design, Development, Production, Installation and Servicing

2.2 PRI Documents:

Available from Performance Review Institute, 161 Thornhill Road, Warrendale, PA 15086-7527.

- AC7004 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Audit Criteria for Standard Quality Program Requirements
- AC7116 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Audit Criteria for Nonconventional Machining (Electrochemical Machining, Electrochemical Grinding, Electrical Discharge Machining, Laser Beam Machining)
- AC7116/1 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Audit Criteria for Electrochemical Machining (ECM)
- AC7116/2 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Audit Criteria for Electrochemical Grinding (ECG)
- AC7116/3 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Audit Criteria for Electrical Discharge Machining (EDM)
- AC7116/4 National Aerospace and Defense Contractors Accreditation Program (NADCAP) – Audit Criteria for Laser Beam Machining (LBM)

3. DEFINITION:

3.1 Nonconventional Machining:

Any material removal method where tool or workpiece contact is nonexistent or minimal.

4. QUALITY SYSTEM:

4.1 The supplier's quality system shall be approved by one of the following:

- a. NADCAP approval to PRI AC7004.
- b. Certification/registration program recognized by NADCAP.

5. GENERAL CUSTOMER REQUIREMENTS:

5.1 Process Approval:

Customer approval shall be obtained for the following processes, if required:

- a. Electrochemical Machining (ECM)
- b. Electrochemical Grinding (ECG)
- c. Electrical Discharge Machining (EDM)
- d. Laser Beam Machining (LBM)

5.1 Purchase Order Documentation:

- 5.1.1 The drawing and revision number on the customer's purchase order shall be the same as the drawing and revision number on file and in use.
- 5.1.2 The master model (electronic) file number and revision number referenced in the customer's purchase order shall be the same file number and revision in use, if used.
- 5.1.3 Changes in design sent to the supplier or documented in a purchase order shall be incorporated into the manufacturing procedures.
- 5.1.4 Up to date copies of customer specifications referenced in the purchase order or on drawings shall be available.

5.2 Subtier Suppliers:

- 5.2.1 Procedures shall exist that require flow down of customer's requirements to subtier suppliers.
- 5.2.2 Subtier supplier generated characteristics shall be identified in quality plans.

6. INTERNAL SUPPLIER AUDITS:

6.1 Workstation Audits:

- 6.1.1 Procedures shall require workstation audits to verify compliance to process requirements.
- 6.1.2 Workstation audits shall be performed according to the supplier's procedure.

7. NONCONVENTIONAL MACHINING PROCESS REQUIREMENTS:

- 7.1 Requirements for electrochemical machining (ECM) are contained in AS7116/1.
- 7.2 Requirements for electrochemical grinding (ECG) are contained in AS7116/2.
- 7.3 Requirements for electrical discharge machining (EDM) are contained in AS7116/3.
- 7.4 Requirements for laser beam machining (LBM) are contained in AS7116/4.