



AEROSPACE INFORMATION REPORT

AIR4777™

REV. C

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Superseding AIR4777B

Nondestructive Inspection (NDI) Methods Used During
Production and Operation of Aircraft Wheels and Brakes

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature. The panel recommends that the document be stabilized.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE A-5A Wheels, Brakes, and Skid Controls Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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1. SCOPE

This SAE Aerospace Information Report (AIR) identifies current nondestructive inspection (NDI) methods used to ensure product integrity and maximize "in service" life of the major structural components of aircraft wheel and brake assemblies.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS2300 Steel Cleanliness, Premium Aircraft-Quality, Magnetic Particle Inspection Procedure

AMS2301 Steel Cleanliness, Aircraft Quality, Magnetic Particle Inspection Procedure

AMS2442 Magnetic Particle Acceptance Criteria for Parts

AMS2630 Inspection, Ultrasonic Product Over 0.5 inch (12.7 mm) Thick

AMS2641 Vehicle, Magnetic Particle Inspection Petroleum Base

AMS2644 Inspection Material, Penetrant

AMS2658	Hardness and Conductivity Inspection of Wrought Aluminum Alloy Parts
AMS3044	Magnetic Particles, Fluorescent, Wet Method, Dry Powder
AMS3045	Magnetic Particles, Fluorescent, Wet Method, Oil Vehicle, Ready-to-Use
AMS-STD-2154	Inspection, Ultrasonic, Wrought Metals, Process For
AS3071	Acceptance Criteria - Magnetic Particle, Fluorescent Penetrant, and Contrast Dye Penetrant Inspection

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B594	Standard Practice for Ultrasonic Inspection of Aluminum-Alloy Wrought Products for Aerospace Applications
ASTM E10	Standard Test Method for Brinell Hardness of Metallic Materials
ASTM E18	Standard Test Methods for Rockwell Hardness of Metallic Materials
ASTM E384	Standard Test Method for Knoop and Vickers Hardness of Materials
ASTM E709	Standard Guide for Magnetic Particle Testing
ASTM E1004	Standard Test Method for Determining Electrical Conductivity Using the Electromagnetic (Eddy Current) Method
ASTM E1220	Standard Practice for Visible Penetrant Testing Using Solvent-Removable Process
ASTM E1417	Standard Practice for Liquid Penetrant Testing
ASTM E1444	Standard Practice for Magnetic Particle Testing
ASTM E2375	Standard Practice for Ultrasonic Testing of Wrought Products

2.3 U.S. Government Publications

Available from DLA Document Services, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6396, <http://quicksearch.dla.mil/>.

MIL-HDBK-728/2	Eddy Current Testing
MIL-HDBK-728/3	Liquid Penetrant Testing
MIL-HDBK-728/4A	Magnetic Particle Testing
MIL-HDBK-728/6	Ultrasonic Testing
MIL-HDBK-6870	Nondestructive Inspection Program Requirements for Aircraft and Missile Materials and Parts
MIL-STD-1537	Electrical Conductivity Test for Verification of Heat Treatment of Aluminum Alloys, Eddy Current Method