



Standard Practice for Radiographic Examination of Advanced Aero and Turbine Materials and Components¹

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1. Scope

1.1 This practice establishes the minimum requirements for radiographic examination of metallic and nonmetallic materials and components used in designated applications such as gas turbine engines and flight structures.

1.2 The requirements in this practice are intended to control the radiographic process to ensure the quality of radiographic images produced for use in designated applications such as gas turbine engines and flight structures; this practice is not intended to establish acceptance criteria for material or components. When examination is performed in accordance with this practice, engineering drawings, specifications or other applicable documents shall indicate the acceptance criteria.

1.3 All areas of this practice may be open to agreement between the cognizant engineering organization and the supplier, or specific direction from the cognizant engineering organization.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

E543 Specification for Agencies Performing Nondestructive Testing

E747 Practice for Design, Manufacture and Material Grouping Classification of Wire Image Quality Indicators (IQI) Used for Radiology

E999 Guide for Controlling the Quality of Industrial Radiographic Film Processing

¹ This practice is under the jurisdiction of ASTM Committee E07 on Nondestructive Testing and is the direct responsibility of Subcommittee E07.01 on Radiology (X and Gamma) Method.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

E1025 Practice for Design, Manufacture, and Material Grouping Classification of Hole-Type Image Quality Indicators (IQI) Used for Radiology

E1030 Test Method for Radiographic Examination of Metallic Castings

E1032 Test Method for Radiographic Examination of Weldments

E1079 Practice for Calibration of Transmission Densitometers

E1165 Test Method for Measurement of Focal Spots of Industrial X-Ray Tubes by Pinhole Imaging

E1254 Guide for Storage of Radiographs and Unexposed Industrial Radiographic Films

E1390 Specification for Illuminators Used for Viewing Industrial Radiographs

E1316 Terminology for Nondestructive Examinations

E1815 Test Method for Classification of Film Systems for Industrial Radiography

E1817 Practice for Controlling Quality of Radiological Examination by Using Representative Quality Indicators (RQIs)

E2033 Practice for Computed Radiology (Photostimulable Luminescence Method)

E2698 Practice for Radiological Examination Using Digital Detector Arrays

2.2 AWS Documents:³

ANSI/AWS A2.4 Symbols for Welding and Nondestructive Testing

2.3 AIA Documents:⁴

NAS-410 Certification and Qualification of Nondestructive Test Personnel

2.4 NCRP Documents:⁵

NCRP 51 Radiation Protection Design Guidelines for 0.1-100 MeV Particle Accelerator Facilities

³ Available from American Welding Society (AWS), 550 NW LeJeune Rd., Miami, FL 33126, <http://www.aws.org>.

⁴ Available from Aerospace Industries Association of America, Inc. (AIA), 1000 Wilson Blvd., Suite 1700, Arlington, VA 22209-3928, <http://www.aia-aerospace.org>.

⁵ Available from National Council on Radiation Protection and Measurements (NCRP), NCRP Publications, 7910 Woodmont Ave., Suite 800, Bethesda, MD 20814.