



Standard Practice for Radiographic Examination¹

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This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This practice² establishes the minimum requirements for radiographic examination for metallic and nonmetallic materials.

1.2 *Applicability*—The criteria for the radiographic examination in this practice are applicable to all types of metallic and nonmetallic materials. The requirements expressed in this practice are intended to control the quality of the radiographic images and are not intended to establish acceptance criteria for parts and materials.

1.3 *Basis of Application*—There are areas in this practice that may require agreement between the cognizant engineering organization and the supplier, or specific direction from the cognizant engineering organization. These items should be addressed in the purchase order or the contract.

1.3.1 DoD contracts.

1.3.2 Personnel qualification, 5.1.1.

1.3.3 Agency qualification, 5.1.2.

1.3.4 Digitizing techniques, 5.4.5.

1.3.5 Alternate image quality indicator (IQI) types, 5.5.3.

1.3.6 Examination sequence, 6.6.

1.3.7 Non-film techniques, 6.7.

1.3.8 Radiographic quality levels, 6.9.

1.3.9 Film density, 6.10.

1.3.10 IQI qualification exposure, 6.13.3.

1.3.11 Non-requirement for IQI, 6.18.

1.3.12 Examination coverage for welds, A2.2.2.

1.3.13 Electron beam welds, A2.3.

1.3.14 Geometric unsharpness, 6.23.

1.3.15 Responsibility for examination, 6.27.1.

1.3.16 Examination report, 6.27.2.

1.3.17 Retention of radiographs, 6.27.8.

1.3.18 Storage of radiographs, 6.27.9.

1.3.19 Reproduction of radiographs, 6.27.10 and 6.27.10.1.

1.3.20 Acceptable parts, 6.28.1.

1.4 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.5 *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 The following documents form a part of this practice to the extent specified herein:

2.2 *ASTM Standards*:³

E94 Guide for Radiographic Examination

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

E801 Practice for Controlling Quality of Radiological Examination of Electronic Devices

E999 Guide for Controlling the Quality of Industrial Radiographic Film Processing

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

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 This practice replaced MIL-STD-453.

³ 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.