Designation: E 1742 – 06

Standard Practice for Radiographic Examination[1]

This standard is issued under the fixed designation E 1742; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice[2] 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, 6.18.4.
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 *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]

E 543 Specification for Agencies Performing Nondestructive Testing
E 747 Practice for Design, Manufacture and Material Grouping Classification of Wire Image Quality Indicators (IQI) Used for Radiology
E 801 Practice for Controlling Quality of Radiological Examination of Electronic Devices
E 999 Guide for Controlling the Quality of Industrial Radiographic Film Processing
E 1025 Practice for Design, Manufacture, and Material Grouping Classification of Hole-Type Image Quality Indicators (IQI) Used for Radiology
E 1030 Test Method for Radiographic Examination of Metallic Castings
E 1032 Test Method for Radiographic Examination of Weldments
E 1079 Practice for Calibration of Transmission Densitometers
E 1165 Test Method for Measurement of Focal Spots of Industrial X-Ray Tubes by Pinhole Imaging
E 1254 Guide for Storage of Radiographs and Unexposed Industrial Radiographic Films
E 1255 Practice for Radioscopy
E 1316 Terminology for Nondestructive Examinations
E 1390 Guide for Illuminators Used for Viewing Industrial Radiographs
E 1411 Practice for Qualification of Radioscopic Systems
E 1416 Test Method for Radioscopic Examination of Weldments
E 1815 Test Method for Classification of Film Systems for Industrial Radiography

2.3 *AWS Document:*

[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.

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