



## Standard Practice for Radioscopy<sup>1</sup>

This standard is issued under the fixed designation E1255; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This practice<sup>2</sup> provides application details for radiosopic examination using penetrating radiation. This includes dynamic radioscopy and for the purposes of this practice, radioscopy where there is no motion of the object during exposure (referred to as static radiosopic imaging) both using an analog component such as an electro-optic device or analog camera. Since the techniques involved and the applications for radiosopic examination are diverse, this practice is not intended to be limiting or restrictive, but rather to address the general applications of the technology and thereby facilitate its use. Refer to Guides E94 and E1000, Terminology E1316, Practice E747, Practice E1025, Practice E2698, and Fed. Std. Nos. 21 CFR 1020.40 and 29 CFR 1910.96 for a list of documents that provide additional information and guidance.

1.2 The general principles discussed in this practice apply broadly to penetrating radiation radiosopic systems. However, this document is written specifically for use with X-ray and gamma-ray systems. Other radiosopic systems, such as those employing neutrons, will involve equipment and application details unique to such systems.

1.3 The former mandatory Annex “A1. DEPARTMENT OF DEFENSE CONTRACTS, SUPPLEMENTAL REQUIREMENTS” was deleted and the detailed requirements are appended now in the non-mandatory Appendix X1. Appendix X1 may be used to fulfill existing contracts.

1.4 The user of this practice shall note that energies higher than 320keV may require different methods other than those described within this practice.

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.* For specific safety

statements, see Section 9 and Fed. Std. Nos. 21 CFR 1020.40 and 29 CFR 1910.96.

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>3</sup>

- 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
- E1000 Guide for Radioscopy
- E1025 Practice for Design, Manufacture, and Material Grouping Classification of Hole-Type Image Quality Indicators (IQI) Used for Radiology
- E1165 Test Method for Measurement of Focal Spots of Industrial X-Ray Tubes by Pinhole Imaging
- E1316 Terminology for Nondestructive Examinations
- E1411 Practice for Qualification of Radioscopic Systems
- E1453 Guide for Storage of Magnetic Tape Media that Contains Analog or Digital Radioscopic Data
- E1475 Guide for Data Fields for Computerized Transfer of Digital Radiological Examination Data
- E1742 Practice for Radiographic Examination
- E2002 Practice for Determining Total Image Unsharpness and Basic Spatial Resolution in Radiography and Radioscopy
- E2339 Practice for Digital Imaging and Communication in Nondestructive Evaluation (DICONDE)
- E2698 Practice for Radiological Examination Using Digital Detector Arrays
- E2903 Test Method for Measurement of the Effective Focal Spot Size of Mini and Micro Focus X-ray Tubes

#### 2.2 ASNT Standard:<sup>4</sup>

- SNT-TC-1A Recommended Practice for Personnel Qualification and Certification in Nondestructive Testing
- ANSI/ASNT CP-189 Standard for Qualification and Certification of Nondestructive Testing Personnel

<sup>1</sup> 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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<sup>2</sup> For ASME Boiler and Pressure Vessel Code applications see related Practice SE-1255 in Section II of that code.

<sup>3</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>4</sup> Available from American Society for Nondestructive Testing (ASNT), P.O. Box 28518, 1711 Arlingate Ln., Columbus, OH 43228-0518, <http://www.asnt.org>.