



Standard Practice for Radiographic Examination of Metallic Castings¹

This standard is issued under the fixed designation E1030/E1030M; 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 practice² provides a uniform procedure for radiographic examination of metallic castings using radiographic film as the recording medium.

1.2 This standard addresses the achievement of, or protocols for achieving, common or practical levels of radiographic coverage for castings, to detect primarily volumetric discontinuities to sensitivity levels measured by nominated image quality indicators. All departures, including alternate means or methods to increase coverage, or address challenges of detecting non-volumetric planar-type discontinuities, shall be agreed upon between the purchaser and supplier and shall consider [Appendix X1](#) and [Appendix X2](#).

1.3 The radiographic techniques stated herein provide adequate assurance for defect detectability; however, it is recognized that, for special applications, specific techniques using more or less stringent requirements may be required than those specified. In these cases, the use of alternate radiographic techniques shall be as agreed upon between purchaser and supplier (also see [Section 5](#)).

1.4 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.*

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.

Current edition approved Dec. 1, 2015. Published January 2016. Originally approved in 1984. Last previous edition approved in 2011 as E1030 - 05(2011). DOI: 10.1520/E1030_E1030M-15.

² For ASME Boiler and Pressure Vessel Code applications see related Test Method SE-1030 in Section II of that Code.

2. Referenced Documents

2.1 ASTM Standards:³

- E94 Guide for Radiographic Examination
- E155 Reference Radiographs for Inspection of Aluminum and Magnesium Castings
- E186 Reference Radiographs for Heavy-Walled (2 to 4½ in. (50.8 to 114 mm)) Steel Castings
- E192 Reference Radiographs of Investment Steel Castings for Aerospace Applications
- E272 Reference Radiographs for High-Strength Copper-Base and Nickel-Copper Alloy Castings
- E280 Reference Radiographs for Heavy-Walled (4½ to 12 in. (114 to 305 mm)) Steel Castings
- E310 Reference Radiographs for Tin Bronze Castings
- E446 Reference Radiographs for Steel Castings Up to 2 in. (50.8 mm) in Thickness
- E505 Reference Radiographs for Inspection of Aluminum and Magnesium Die Castings
- E543 Specification for Agencies Performing Nondestructive Testing
- E689 Reference Radiographs for Ductile Iron Castings
- E747 Practice for Design, Manufacture and Material Grouping Classification of Wire Image Quality Indicators (IQI) Used for Radiology
- E802 Reference Radiographs for Gray Iron Castings Up to 4½ in. (114 mm) in Thickness
- 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
- E1079 Practice for Calibration of Transmission Densitometers
- E1254 Guide for Storage of Radiographs and Unexposed Industrial Radiographic Films
- E1316 Terminology for Nondestructive Examinations

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.