



Standard Practice for Design, Manufacture, and Material Grouping Classification of Hole-Type Image Quality Indicators (IQI) Used for Radiology¹

This standard is issued under the fixed designation E 1025; 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 covers the design, material grouping classification, and manufacture of hole-type image quality indicators (IQI) used to indicate the quality of radiologic images.

1.2 This practice is applicable to X-ray and gamma-ray radiology.

1.3 The values stated in inch-pound units are to be regarded as standard.

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:³

B 139 Specification for Phosphor Bronze Rod, Bar, and Shapes

B 150 Specification for Aluminum Bronze Rod, Bar, and Shapes

B 161 Specification for Nickel Seamless Pipe and Tube

B 164 Specification for Nickel-Copper Alloy Rod, Bar, and Wire

B 166 Specification for Nickel-Chromium-Iron Alloys (UNS N06600, N06601, and N06690) and Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617) Rod, Bar, and Wire

E 746 Test Method for Determining Relative Image Quality Response of Industrial Radiographic Film

E 747 Practice for Design, Manufacture, and Material Grouping Classification of Wire Image Quality Indicators (IQI) Used for Radiology

E 1735 Test Method for Determining Relative Image Quality of Industrial Radiographic Film Exposed to X-radiation from 4 to 25 MV

E 1316 Terminology for Nondestructive Testing

3. Terminology

3.1 *Definitions*—The definitions of terms relating to gamma and X-radiology in Terminology **E 1316**, Section D, shall apply to the terms used in this practice.

4. Hole-Type IQI Requirements

4.1 Image quality indicators (IQIs) used to determine radiologic-image quality levels shall conform to the following requirements.

4.1.1 Standard Hole-Type IQIs:

4.1.1.1 Image quality indicators (IQIs) shall be fabricated from materials or alloys identified or listed in accordance with **7.3**. Other materials may be used in accordance with **7.4**.

4.1.1.2 Image quality indicators (IQIs) shall dimensionally conform to the requirements of **Fig. 1**.

4.1.1.3 Both the rectangular and the circular IQI shall be identified with number(s) made of lead or a material of similar radiation opacity. The number shall be bonded to the rectangular IQI's and shall be placed adjacent to circular IQI's to provide identification of the IQI on the image. The identification numbers shall indicate the thickness of the IQI in

¹ This practice is under the jurisdiction of ASTM Committee E07 on Nondestructive Testing and is the direct responsibility of Subcommittee E07.01 on Radiographic Practice and Penetrators.

Current edition approved June 1, 2005. Published June 2005. Originally approved in 1984. Last previous edition approved in 1998 as E 1025 - 98.

² For ASME Boiler and Pressure Vessel Code applications see related Practice SE-1025 in Section II of that Code.

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.