



Standard Radiographic Examination for Soundness of Welds in Steel by Comparison to Graded ASTM E 390 Reference Radiographs¹

This standard is issued under the fixed designation E 1955; 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 standard covers requirements for radiographic examination for soundness of welds in fabricated steel by comparison to selected severity levels of Reference Radiographs E 390, Vol II. The base material varies from greater than 0.25 to 3 in. [6.4–76 mm] inclusive in thickness. Volume II is applicable. This standard is not suitable for shipyard use.

NOTE 1—This standard was adopted to replace Mil-Std. 1264-B entitled “Radiographic Inspection For Soundness of Welds In Steel By Comparison To Graded ASTM E 390 Reference Radiographs,” dated 18 January, 1989. This standard is intended to be used for the same applications as the document which it replaced. Users should carefully review its requirements when considering the standard’s use for new and/or different applications.

1.2 The values stated in inch-pound units are to be regarded as the standard. The SI units given in brackets are for information only.

1.3 *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:²

E 94 Guide for Radiographic Examination
E 390 Reference Radiographs for Steel Fusion Welds
E 1742 Practice for Radiographic Examination
E 1316 Terminology for Nondestructive Examinations

2.2 Military Standards:

NAS-410 Certification and Qualification of Nondestructive Test Personnel³

2.3 ASNT Standards:⁴

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

2.4 American Welding Society Standards:

AWS D 1.1 Structural Welding Code Steel⁵

2.5 American Petroleum Institute Standards:

API STD-1104 Standard for Welding Pipelines and Related Facilities⁶

2.6 Adjuncts:

Reference Radiographs for Steel Fusion Welds:

Volume II, Thickness Over ¼ to 3 in. [6.4 to 76 mm], incl⁷

3. Terminology

3.1 *Definitions*—For definitions of terms used in this document, see Terminology E 1316.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *grades*—welds shall be designated Grades I, II, III, or IV as shown in Table 1. A Grade I weld would contain the least or smallest discontinuities, or both, and a Grade IV weld would contain the largest or most numerous discontinuities, or both.

3.2.2 *examination lot*—an examination lot shall consist of all welds of a specific design and size produced at one facility by the same personnel and production technique, and submitted for examination at one time.

4. Significance and Use

4.1 This standard can be used to establish acceptance criteria for weld soundness based on the procedures and reference radiographs of ASTM E 390. The grades specified in this standard, while applicable for general examination use for the materials and thicknesses indicated, may not be suitable for all applications.

¹ This standard is under the jurisdiction of ASTM Committee E07 on Nondestructive Testing and is the direct responsibility of Subcommittee E07.02 on Reference Radiological Images.

Current edition approved February 1, 2004. Published March 2004. Originally approved in 1998. Last previous edition approved in 1998 as E 1955 - 98.

² 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.

³ Available from Aerospace Industries Association, 1050 Eye St., NW, Washington, DC 20005.

⁴ Available from The American Society for Nondestructive Testing (ASNT), P.O. Box 28518, 1711 Arlington Ln., Columbus, OH 43228-0518.

⁵ Available from American Welding Society, 550 N.W. Lajuene Road, Miami, FL 33135.

⁶ Available from American Petroleum Institute, 1801 K Street N.W., Washington, DC 20226.

⁷ Available from ASTM Headquarters. Order PCN 17–503902–22.

