



Designation: E 802 – 95 (Reapproved 1999)

Standard Reference Radiographs for Gray Iron Castings Up to 4½ in. (114 mm) in Thickness¹

This standard is issued under the fixed designation E 802; 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 approval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 These reference radiographs for gray iron castings consist of one set of illustrations of centerline shrinkage with severity levels 1 to 5 using three radiation source types as follows:

1.1.1 *Volume I: Medium Voltage (nominal 250 kVp) X-Ray Reference Radiographs*—Set of 5 severity levels in a 15 by 17 in. folder.

1.1.2 *Volume II: Iridium-192 Reference Radiographs*—Set of 5 severity levels in a 15 by 17 in. folder.

1.1.3 *Volume III: Cobalt-60 Reference Radiographs*—Set of 5 severity levels in a 15 by 17 in. folder.

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

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:

E 94 Guide for Radiographic Testing²

E 186 Reference Radiographs for Heavy-Walled (2 to 4½ in. (51 to 114-mm)) Steel Castings²

E 446 Reference Radiographs for Steel Castings Up to 2 in. (51 mm) in Thickness²

E 1316 Terminology for Nondestructive Examinations²

2.2 ASTM Adjuncts:³

Reference Radiographs for Gray Iron Castings Up to 4½ in. (114 mm) in Thickness:

Volume I, Medium Voltage (Nominal 250 kVp) X Rays⁴

Volume II, Iridium-192⁵

¹ These reference radiographs are under the jurisdiction of ASTM Committee E-7 on Nondestructive Testing and are the direct responsibility of Subcommittee E07.02 on Reference Radiographs.

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² *Annual Book of ASTM Standards*, Vol 03.03.

³ Available from ASTM Headquarters.

⁴ Order RRE080201.

⁵ Order RRE080202.

Volume III, Cobalt-60⁶

3. Terminology

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

4. Significance and Use

4.1 These reference radiographs, along with the referenced applicable steel casting standards (Reference Radiographs E 186 and E 446), are supplied as a means of establishing categories and severity levels of common internal discontinuity types in gray iron castings subjected to radiographic examination. They may be used in accordance with contractual specifications as agreed upon between purchaser and supplier.

4.2 The use of this standard is not intended to be restricted to the specific energy level or to the absolute thickness limits that are contained in this standard title. The title is intended to be descriptive and not restrictive. This document may be used, where there is no other applicable document, for other energy levels or thicknesses, or both, for which it is found to be applicable and for which agreement has been reached between purchaser and supplier.

5. Method of Preparation

5.1 The original radiographs used to prepare the accompanying reference radiographs were produced on high contrast, fine-grain film by the respective use of radiation energies stated in 1.1.1-1.1.3. The radiographs were made with a penetrometer sensitivity as determined by ASTM penetrometers (see Guide E 94) of 2-2T. The reproductions have been prepared to an H&D density from 2.00 to 2.25 and they have retained substantially the contrast of the original radiographs.

5.2 *Film Deterioration*—Radiographic films are subject to wear and tear from handling and use. The extent to which the image deteriorates over time is a function of storage conditions, care in handling and amount of use. Reference radiograph films are no exception and may exhibit a loss in image quality over time. The radiographs should therefore be periodically examined for signs of wear and tear, including

⁶ Order RRE080203.