



Standard Guide for Storage of Magnetic Tape Media that Contains Analog or Digital Radioscopic Data¹

This standard is issued under the fixed designation E1453; 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 guide may be used for the control and maintenance of recorded and unrecorded magnetic and optical media of analog or digital electronic data from industrial radiology.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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.* For specific precautionary statements, see Section 6.

2. Referenced Documents

2.1 ASTM Standards:²

E1000 Guide for Radiology

E1255 Practice for Radiology

2.2 ANSI Standards:³

INCITS 40 Unrecorded Magnetic Tape

INCITS 39 Recorded Magnetic Tape

INCITS 125 Two-Sided, Double Density Disk

INCITS 46 Six-Disk Pack

INCITS 48 Magnetic Tape Cassettes

2.3 NIST Standard:

NBS Handbook, NBS SP 500.101⁴

¹ This guide 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 Oct. 1, 2014. Published October 2014. Originally approved in 1992. Last previous edition approved in 2009 as E1453-09. DOI: 10.1520/E1453-14.

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 American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

⁴ Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, <http://www.nist.gov>.

3. Significance and Use

3.1 The provisions of this guide are intended to control and maintain the quality of recorded industrial electronic data from radiology and unrecorded magnetic and optical media only, and are not intended to control the acceptability of the materials or products examined. It is further intended that this guide be used as an adjunct to Guide E1000 and Practice E1255.

3.2 The necessity for applying specific control procedures such as those described in this guide is dependent to a certain extent, on the degree to which the user adheres to good recording and storage practices as a matter of routine procedure.

4. Unrecorded Media Storage

4.1 Un-Opened Containers:

4.1.1 *Storage Recommendations*—Any media in containers sealed by the manufacturer and not opened should be stored as shipped, whenever possible, to avoid container damage and possible media damage. Storage temperature should be $60^{\circ} \pm 20^{\circ}\text{F}$ ($16 \pm 11^{\circ}\text{C}$), relative humidity range of $45 \pm 15\%$, at a pressure range of 12.5 ± 2.5 psi and a maximum magnetic field strength of 50 Oe. The optimum storage conditions are 65°F (18°C) at 40 % relative humidity, 14.7 psi and a maximum magnetic field strength of 30 Oe. Damaging stresses in the media can be produced by large temperature and humidity variations even if they remain within the specified ranges. Specific media manufacturer's recommendations should be consulted when large variations in temperature or humidity, or both, are anticipated or experienced.

4.1.2 *Higher or Lower Storage Conditions*—When temperature exceeds 90°F (32°C) or humidity exceeds 90 %, or pressure exceeds 15 psi, some unrecorded media should be used under normal existing conditions to test for degradation. If degradation is found on these samples, subsequent sampling may be done on other media to avoid unnecessary scrap. If storage temperature falls below 30°F (-1°C), media stored at these lower temperatures in unopened containers should be allowed to stabilize at a room temperature (60° to 90°F (16° to 32°C)) before opening the containers. The stabilization time will vary with the bulk of the stored media and the storage temperature. The lower the temperature and greater the bulk,