



Standard Guide for Storage of Media That Contains Analog or Digital Radioscopic Data¹

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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 radioscopy.

1.2 *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:

E 1000 Guide for Radioscopy²

E 1255 Practice for Radioscopy²

2.2 ANSI Standards:³

X3.40 Unrecorded Magnetic Tape

X3.39 Recorded Magnetic Tape

X3.125 Two-Sided, Double Density Disk

X3.46 Six-Disk Pack

X3.48 Magnetic Tape Cassettes

2.3 NIST Standard:

NBS Handbook, NBS SP 500.101⁴

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 radioscopy 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 E 1000 and Practice E 1255.

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, the longer the time required to reach room temperature. If containers are opened too soon, condensation could cause the media to stick to whatever is touching their surfaces. If the relative humidity falls below 10 % and the moisture in the media is reduced sufficiently, damage can occur during handling after opening the sealed containers, and the media may be subjected to static electrical discharges. Storage humidities over 60 % can also cause the media to stick to whatever is touching their surfaces.

4.2 *Opened Containers*—The same considerations described in 4.1 for un-opened containers apply. Opened containers are those on which the manufacturers inner bag around the media has been opened. This can cause the unrecorded media

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

³ Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

⁴ Available from National Institute of Standards and Technology (NIST), Gaithersburg, MD 20899.