§ 1238.5) or a commercially available certifiable target manufactured to comply with this standard, and read the patterns following the instructions of ANSI/ISO 3334. Agencies must use the smallest character used to display information to determine the height used in the Quality Index formula. Agencies must use a Quality Index of five at the third generation level.

(ii) *COM.* COM must meet the requirements of ANSI/AIIM MS1 (incorporated by reference, see § 1238.5).

(2) *Background density of images.* Agencies must use the background ISO standard visual diffuse transmission density on microforms appropriate to the type of documents being filmed. Agencies must use the procedure for density measurement described in ANSI/AIIM MS23 (incorporated by reference, see § 1238.5). The densitometer must meet with ANSI/NAPM IT2.18 (incorporated by reference, see § 1238.5) for spectral conditions and ANSI/NAPM IT2.19 (incorporated by reference, see § 1238.5) for geometric conditions for transmission density.

(i) Recommended visual diffuse transmission background densities for images of documents are as follows:

Classification	Description of document	Background density
Group 1	High-quality, high contrast printed book, periodicals, and black typing	1.3–1.5
Group 2	Fine-line originals, black opaque pencil writing, and documents with small high contrast printing.	1.15–1.4
Group 3	Pencil and ink drawings, faded printing, and very small printing, such as footnotes at the bottom of a printed page.	1.0–1.2
Group 4	Low-contrast manuscripts and drawing, graph paper with pale, fine-colored lines; letters typed with a worn ribbon; and poorly printed, faint documents.	0.8–1.0
Group 5	Poor-contrast documents (special exception).	0.7–0.85

(ii) Recommended visual diffuse transmission densities for computer generated images are as follows:

Film type	Process	Density measurement method	Min. Dmax [1]	Max. Dmin [1]	Minimum density difference
Silver gelatin	Conventional	Printing or diffuse	0.75	0.15	0.60
Silver gelatin	Full reversal	Printing	1.50	0.20	1.30

[1] Character or line density, measured with a microdensitometer or by comparing the microfilm under a microscope with an image of a known density.

(3) *Base plus fog density of microfilms.* The base plus fog density of unexposed, processed microfilms must not exceed 0.10. When a tinted base film is used, the density will be increased. The difference must be added to the values given in the tables in paragraph (d)(2) of this section.

(4) *Line or stroke width.* Due to optical limitations in most micrographic systems, microfilm images of thin lines appearing in the source documents will tend to fill in as a function of their width and density. Therefore, as the reduction ratio of a given system is increased, reduce the background density as needed to ensure that the copies will be legible.

§ 1238.16 What are the microfilming requirements for temporary records, duplicates, and user copies?

(a) *Temporary records with a retention period over 99 years.* Agencies must use the microfilming requirements in § 1238.14.

(b) *Temporary records to be kept for less than 99 years, duplicates, and user copies.* NARA does not require the use of specific standards for these microforms. Agencies may select a film stock that meets their needs and ensures the preservation of the microforms for their full retention period. NARA recommends that agencies consult appropriate standards, available as noted in § 1238.3, and manufacturer's instructions for processing production, and

maintenance of microform to ensure that the images are accessible and usable for the entire retention period of the records.

Subpart C—Storage, Use, and Disposition of Microform Records

§ 1238.20 How must microform records be stored?

(a) *Permanent and unscheduled records.* Agencies must store permanent and unscheduled microform records under the extended term storage conditions specified in ISO 18911 and ANSI/PIMA IT9.2 (both incorporated by reference, see § 1238.5), except that the relative humidity of the storage area must be a constant 35 percent RH, plus or minus 5 percent. Non-silver copies of microforms must be maintained in a different storage area than are silver gelatin originals or duplicate copies).

(b) *Temporary records.* Agencies must store temporary microform records under conditions that will ensure their preservation for their authorized retention period. NARA suggests that agencies may consult Life Expectance (LE) guidelines in ISO 18901 (incorporated by reference, see § 1238.5).

§ 1238.22 What are the inspection requirements for permanent and unscheduled microform records?

(a) Agencies must inspect, or arrange for a contractor or NARA to inspect master microform of permanent or unscheduled records following the inspection requirements in paragraph (b) of this section.

(b) The microforms listed in paragraph (a) of this section must be inspected initially in accordance with ANSI/AIIM MS45 (incorporated by reference, see § 1238.5). All microforms must be inspected when they are two years old. After the initial two-year inspection, unless there is a catastrophic event, the microforms must be inspected as follows until they are transferred to NARA:

(1) For microfilm produced after 1990, inspect the microfilm every 5 years.

(2) For microfilm produced prior to 1990, inspect the microfilm every 2 years.

(c) To facilitate inspection, the agency must maintain an inventory that lists each microform series or publication by production date, producer, processor, format, and results of previous inspections.

(d) The inspection must include the following elements:

(1) An inspection for aging blemishes following ANSI/AIIM MS45 (incorporated by reference, see § 1238.5);

(2) A rereading of resolution targets;

(3) A remeasurement of density; and

(4) A certification of the environmental conditions under which the microforms are stored, as specified in § 1238.20(a).

(e) The agency must prepare an inspection report, and send a copy to NARA in accordance with § 1238.28(c). The inspection report must contain:

(1) A summary of the inspection findings, including:

(i) A list of batches by year that includes the identification numbers of microfilm rolls and microfiche in each batch;

(ii) The quantity of microforms inspected;

(iii) An assessment of the overall condition of the microforms;

(iv) A summary of any defects discovered, e.g., redox blemishes or base deformation; and

(v) A summary of corrective actions taken.

(2) A detailed inspection log created during the inspection that contains the following information:

(i) A complete description of all records inspected (title; roll or fiche number or other unique identifier for each unit of film inspected; security classification, if any; and inclusive dates, names, or other data identifying the records on the unit of film);

(ii) The date of inspection;

(iii) The elements of inspection (see paragraph (d) of this section);

(iv) Any defects uncovered; and

(v) The corrective action taken.

(f) If an inspection finds that a master microform is deteriorating, the agency must make a silver duplicate in accordance with § 1238.14 to replace the deteriorating master. The duplicate microform must meet inspection requirements (see § 1238.22) before it may be transferred to a record center or NARA.