

The Library of Virginia  
 STANDARDS FOR THE MICROFILMING OF PUBLIC RECORDS  
~~For Archival Retention~~

17 VAC 15-20

REV: 99

PART I

17 VAC 15-20-10

AUTHORITY

These standards are established by the Library Board in accordance with the provisions of the Virginia Public Records Act (Section 42.1-76 et seq.) of Title 42 of the Code of Virginia

PART 2

17 VAC 15-20-20

SCOPE

These standards apply to all records that have ~~been appraised as being archival:~~  
~~having~~ administrative, legal, fiscal, or historical value as defined in Section 42.1-77 of the Code of Virginia, ~~to warrant their permanent preservation.~~  
~~and to~~  
~~the procedural microfilming process used in the Circuit Court Clerk's offices.~~

Such determinations are included in the officially approved retention and disposition schedules. When the informational contents of such ~~archival~~ public records are to be maintained on microfilm, the silver gelatin camera microfilm produced by source document methods is to be considered the permanent archival security copy. For Computer- Output Microfilm, refer to Standards For Computer Output Microfilm (COM) For ~~Archival Retention~~ Public Records (17VAC15-50). The

camera negative film shall not be used for reference purposes. ~~Whenever the original record is recommended for disposal, authorization will be given after the camera microfilm has been inspected, approved and accessioned by the Information Imaging Branch, Virginia State Library and Archives (VSL&A).~~

When disposal of the original **permanent** public record (identified as such in the State retention and disposition schedule) is recommended after microfilming, the camera negative must first meet these standards and conform with the Library of Virginia's "Guidelines for Film, Microfiche or Optical Media for Security Storage at The Library of Virginia" (LVA). Upon receipt of the camera negative for storage with LVA, it will be inspected, approved and accessioned by the Imaging Services Branch, Records Management & Imaging Services Division. If the film fails to meet the requirements, it will be returned to the office of origin.

### PART 3

17 VAC 15-20-30

### STANDARDS

The microfilm, microfilming, film processing, and film storage of archival public records on microfilm shall comply with the following standards approved by the American National Standards Institute (ANSI), Association for Information and Image Management International (AIIM), and the International Standards Organization (ISO).

#### ANSI:

IT 9.1 - ~~1989~~1992 Imaging Media (Film) - Silver-Gelatin Type - Specifications for Stability

IT 9.2 - ~~1988~~1991 Imaging Media - Photographic Processed Films, Plates, and Papers -  
Filing Enclosures and Storage Containers

IT 9.17- 1993 Photography - Determination of Residual Thiosulfate and Other Related  
Chemicals in Processed Photographic Materials - Methods Using Iodine-Amylose,  
Methylene Blue and Silver Sulfide

IT 9.11- ~~1991~~1993 ~~Photography(Film) - Processing Safety Photographic Film - Storage~~  
Imaging Media - Processed Safety Photographic Film - Storage

PH2.19 - 1986 Conditions for Diffuse and Doubly Diffuse Transmission Measurements

~~PH4.8 - 1985 Photography (chemicals) - Residual Thiosulfate and other Chemicals in  
Films, Plates, and Papers - Determination and Measurement~~

**ANSI/AIIM:**

ANSI/AIIM MS08-1988 Image Mark (Blip) Used in Image Mark Retrieval Systems

ANSI/AIIM MS14-1988 Specifications for 16 & 35mm Microfilms in Roll Form

ANSI/AIIM MS18-1987 Splices for Imaged Film - Dimensions and Operational  
Constraints

ANSI/AIIM MS19-~~1987~~1993 Recommended Practice Identification of Microforms

ANSI/AIIM MS23-~~1990~~1998 Practice for Operational Procedures/Inspection and Quality  
Control of First Generation Silver Gelatin Microfilm of  
Documents

ANSI/AIIM MS42-1989 Recommended Practice for the Expungement, Deletion,  
Correction or Amendment of Records on Microforms

ANSI/AIIM MS45-1990 Recommended Practice for Inspection of Stored Silver -  
Gelatin Microforms for Evidence of Deterioration

ANSI/AIIM MS48-~~1990~~1999 Recommended Practice for Microfilming Public Records on  
Silver-Gelatin Film

AIIM/AIIM TR02 -~~1991~~1992 Glossary of Imaging Technology

**Other:**

ISO 3334 -~~1989~~1991 Microcopying: ISO Test Chart No. 2: Description and Use in  
Photographic Documentary Reproduction,

Y14.2M -~~1987~~1992 Engineering Drawing and Related Documentation Practices -  
Line Conventions and Lettering

**PART 4**

**17 VAC 15-20-40**

**MICROFILM STOCK**

The film stock used to make permanent archival security photographic or  
microphotographic copies of ~~archival~~ public records shall be safety-based  
archival microfilm as specified in IT9.1-~~1988~~1992 Imaging Media (Film) Silver-

Gelatin type - Specifications for Stability

**PART 5**

**17 VAC 15-20-50**

**MICROFILMING PROCEDURES**

Procedures to be followed in establishing and operating a micrographic program for filming ~~archival~~ public records shall conform to standards set down in ANSI/AIIM MS23-~~1990~~1997 Practice for Operational Procedures/Inspection and Quality Control of First-Generation Silver-Gelatin Microfilm of Documents.

**17 VAC 15-20-60**

Microimages, including the generation intended for use, shall contain all the significant record detail shown on the originals. Microimages of the records shall be arranged, identified and indexed so that any individual document or component of the records can be easily located. All engineering drawings submitted for microfilming should conform to ANSI Y14.2M-1987.

**17 VAC 15-20-70**

All densities shall be as consistent as possible throughout the microform. The background density of the camera negative microfilm shall be within the ranges shown on the following chart when measured on a blank area of the filmed document.

TABLE 1 BACKGROUND DENSITIES

Classification	Description of Documents	Density
Group 1	High quality, high contrast	1.00-1.20

documents or printed material  
 and black typing; fine line  
 originals, black opaque pencil  
 writing and documents with  
 small high-contrast printing;  
 Pencil and ink drawings, faded  
 printing and very small printing.

Group 2 Low-contrast manuscripts and drawings .80-1.00  
 graph paper with pale, fine-colored  
 lines; letters typed with a worn ribbon;  
 poorly printed, faint documents; positive  
 appearing Photostats and blueprints.

Background density on positive appearing camera microfilm shall be no higher than 0.30. The base-plus-fog density of unexposed, processed, clear-based film must not exceed 0.10. When a tinted base film is used, the density shall not exceed 0.3. Measurements are made using a densitometer calibrated with a step tablet provided by the Imaging Services Branch, LVA. In certain instances, some poor contrast documents may require lower densities to make the entire image legible and reproducible as stated in ANSI/AIIM MS23-~~1990~~1997. Mixed quality documents should be filmed at the lower densities. A system of inspection and quality control to ensure compliance with this standard must be established and consistently maintained in conformance with ANSI/AIIM MS23-~~1990~~1997 Practice for Operational Procedures/Inspection and Quality Control of First-Generation, Silver-Gelatin Microfilm of Documents.

17 VAC 15-20-80

Resolution Requirements

#### Resolution requirements for microfilming

A minimum resolution of 90 lines per millimeter shall be obtained regardless of reduction ratio used or the type of camera used and the 4.0 pattern must be resolved for 16mm microfilm and the 6.3 pattern for 35mm microfilm. This shall be determined by the line count and direction method using the National Bureau of Standards Standard Reference material 1010a (ANSI and ISO Test Chart No. 2) for planetary cameras and the AIIM MS-113 Test Chart for rotary cameras. No other test charts shall be used unless approved by the VSL&ALVA. The test charts are composed of two groups of five line pairs, the line pairs in the two groups being oriented perpendicular to one another, and each pattern is numbered and progressively reduced. Five vertical and five horizontal line pairs shall be clearly defined in both directions. The resolution test chart shall be photographed at the beginning and at the end of each reel of camera microfilm at least three times in succession.

NOTE: Resolution of duplicates should generally be only one pattern lower than the original from which the duplicate was reproduced. Pattern resolved times the reduction ratio equals Lines per millimeter.

#### Resolution requirements for procedural microfilm recording

A minimum resolution of 120 lines per millimeter shall be obtained regardless of reduction ratio used or the type of camera used and the 5.0 pattern must be resolved for 16mm microfilm or the 3.2 pattern for 16mm microfilm being generated by the same office using digital imaging as a recording process. This shall be determined by the line count and direction method using the National Bureau of Standards Standard Reference material 1010a (ANSI and ISO

Test Chart No. 2) for planetary cameras and the AIIM MS-113 Test Chart for rotary cameras. No other test charts shall be used unless approved by the VSL&A. The test charts are composed of two groups of five parallel line pairs, the line pairs in the two groups being oriented perpendicular to one another, and each pattern is numbered and progressively reduced. Five vertical and five horizontal line pairs shall be clearly defined in both directions. The resolution test chart shall be photographed at the beginning and at the end of each reel of camera microfilm at least three times in succession.

NOTE: Resolution of duplicates should generally be only one pattern lower than the original from which the duplicate was reproduced. Pattern resolved times the reduction ratio equals Lines per millimeter.

**17 VAC 15-20-90**

Microform identification of each reel of film shall conform to ANSI/AIIM MS19-~~1987~~1993 Identification of Microforms. The targets shall provide documentation that ensures that the microfilm copy can be substituted in place of the original document. Minimum documentation should include the following targets in the order listed: 1) *start target*, 2) *reel number*, 3) resolution chart (filmed three times), 4) plain white sheet of paper 5) *Title page*, 6) custodian's certificate, 7) End of Records or Volume, 8) operator's declaration, 9) end of reel or continued on reel #, 10) resolution target (three times). And any other technical targets are needed. MS23 and MS19 list additional technical targets.

**PART 6**

**17 VAC 15-20-100**

**PROCESSING**

Processors shall be certified by the manufacturer as capable of producing



archival quality processed film as required by ~~ANSI PH4.8 - 1985 Photography (chemicals) - Residual Thiosulfate and other Chemicals in films, plates, and papers - Determination and Measurement~~ IT 9.17- 1993 Photography - Determination of Residual Thiosulfate and Other Related Chemicals I Processed Photographic Materials - Methods Using Iodine-Amylose, Methylene Blue and Silver Sulfide.

**17 VAC 15-20-110**

Certification for archival quality processing shall be based upon the Methylene blue test analysis. Processed microfilm ~~shall~~ must have a concentration of greater than zero but shall not exceed .014 g/m<sup>2</sup> in a clear film area. This concentration is different for fine-grain archival films, see ANSI9.1-~~1988~~1992 for these settings. **Film processed in-house shall be tested and certified once every two weeks or as deemed necessary by ~~the Information Imaging Branch, Virginia State Library and Archives~~ the Imaging Services Branch, The Library of Virginia.** Processing services performed off-site shall include provisions requiring that the Methylene blue test be performed every 24 hours.

**17VAC15-20-120**

A certificate documenting that the microfilm passes the Methylene blue test shall be sent to the Imaging Services Branch, LVA. The certificate shall contain the name of the agency whose film was processed, the date of processing, the date the Methylene blue test was performed, the test results, processor used and the signature of the person who did the test. Records documenting the daily off-site testing shall be maintained and provided to the ~~Information Imaging Branch, Virginia State Library and Archives~~ Imaging Services Branch, LVA at least once a month.

## PART 7

## 17 VAC 15-20-130

## HANDLING AND INSPECTION

The total microfilming system shall be evaluated to ensure that micro-images conforming to the standards are produced. The final reproduction, whether film or hard copy print from the film, must be retrievable, readable and reproducible.

## 17 VAC 15-20-140

Clean, lint free, white cotton or nylon gloves shall be worn when handling the film. Food, smoking and other contaminants shall not be allowed in microfilming areas.

## 17 VAC 15-20-150

The camera negatives shall be handled only during the inspection procedure and when generating an intermediate master. In systems generating two camera microfilms, one shall be designated as the archival camera microfilm and shall not be used for duplication, loaded into a cartridge or inserted in a viewer. The second camera negative shall be designated as the working master. In systems generating a single camera ~~microfilm~~ negative, the ~~film~~ camera negative shall be used only for the production of an intermediate master from which copies will be generated.

## 17 VAC 15-20-160

Splicing is not permitted on the camera negative, except at the beginning of the reel ~~or for a court ordered expungement conducted in accordance with MS42~~ before

all beginning targets but after the clear leader. Splicing can be done in place on the intermediate master up to a total of five splices. An unexposed area of film must be used between the splice and the beginning titling targets.

Ultrasonic splicing is recommended for polyester film.

NOTE: Due to the required filming procedures, more than five splices within a single 16mm reel are permitted for procedural microfilming. However, each days filming sequence shall be discarded and refilmed when defects obliterating or obscuring information or missing pages are noted within that sequence. Splicing within the daily film sequence is not allowed.

#### PART 8

#### 17 VAC 15-20-170

#### STORAGE

Camera negatives shall be verified for completeness and accuracy, then transferred promptly to ~~the Information Imaging Branch, VSL&A Imaging Services Branch, LVA~~ for storage as required in the appropriate Retention and Disposition Schedule. Each film container shall be labeled with the following: office of origin, records series, reel number, inclusive information, density and resolution readings. Camera microfilm shall be stored according to ~~ANSI PH 1.43 - 1985 Photography (Film) Storage of Processed Safety Film~~ IT 9.2-~~1989~~1991 Imaging Media - Photographic Processed Films, Plates, and Papers - Filing Enclosures and storage Containers.

#### 17 VAC 15-20-180

At approximately two year intervals, a sample of randomly selected reels of microfilm in storage shall be inspected according to MS45-1990 Recommended Practice for Inspection of Stored Silver-Gelatin Microforms for Evidence of

Deterioration.