

Guidelines for the Conversion of Digital Images to Microfilm Format

South Carolina Department
of Archives and History

**Archives and Records
Management Division**

Introduction

The Department of Archives and History has allowed for, and has encouraged the production of, security microfilm copies of permanent records that have been digitally created (born digital) or imaged from paper. Further, the Department recognizes that the recent development of new hardware and software capable of producing quality archival microfilm, directly from digital images, offers several advantages. Chief among these is that it is fast, easy, and economical to produce. These reasons, combined with the fact that archival microfilm still offers the greatest potential for long-term survival of valuable records, makes a strong case for support from the Archives for this approach. Subsequently, it becomes important that some guidelines be in place. Microfilm produced from scanned images offers some unique challenges. These guidelines attempt to provide the necessary controls to ensure reasonable quality in this hybrid of new and old technology.

Policy

The format of the microfilm shall be such that people with access to microfilm readers can readily find items on the film by using the index, in the same way they do now with microfilm created from paper systems. These microfilming procedures shall not be a substitute for normal system backup procedures. Rather, they are regarded as an additional safeguard for permanent records of a critical nature. These guidelines provided by the South Carolina Department of Archives and History, Records Management Division, outline the following requirements:





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Microfilm type The microfilm produced must be silver halide, processed for archival storage, in conformity with SC Archives standards as outlined in *Quality Standards and Practices for the Microfilming of Public Records* (Regulations 12-200 through 12-203, *Code of Laws of South Carolina, 1976*, as amended (www.lpitr.state.sc.us/coderegs/c012.htm#12-200)). Readings from Methylene Blue testing for residual thiosulfate must be included with microfilm transmittals. The original test results should be retained on file, in a state approved processing facility.

Reduction ratio The reduction chosen for the microfilm output should be consistent with recommended practices for microfilm of records of permanent retention. Space savings should be secondary to the goal of providing for good clarity, sufficient detail, and reproducibility in the duplication process, and in paper prints. As a general rule, lower reductions serve to provide a better quality image.

Indexing The content of all index fields associated with the images on individual rolls shall be provided, in a microfilm format, and shall be a part of the microfilmed series submitted for deposit.

Order of the Images The prevailing method accepted by the user community (book and page for recorded instruments) shall be used. The Archives prefers that only one records series be placed on a roll of microfilm. Requests for exceptions to this provision must be made in writing to the SC Department of Archives and History.

Title Targets Targets must include all those specified in Public Records Leaflet #4, *Targeting and Certification of Microfilm* (www.state.sc.us/scdah/armmfmcert.htm#targets). Targets such as “start;” “roll number/reduction ratio;” “end of file” (or amended versions); and “end of roll” must be eye-readable. The “Certificate of Intent and Purpose” must be completed and signed by the records custodian from the respective government office. The “Certificate of Authenticity” shall be signed by the scanner operator, and should be included at the end of each roll. This document must include the following information: (1) name of agency/office; (2) records series title; (3) span date(s) of records; and (4) starting and/or ending indexing information.

Quality Monitoring of Scanners All operations using the Kodak Archive Writer and subscribing to the Kodak Infoguard program should conduct all tests as provided for in the program, and as recommended by Kodak quality assurance personnel.



**Quality Monitoring
of Scanners** *CONTINUED*

All operations using the Kodak Archive Writer that are NOT participating in the Infoguard Program should follow procedures outlined in ANSI/AIIM MS44 *Recommended Practice for Quality Control of Image Scanners*. AIIM Scanner Test Chart #2 should be scanned and included on the front and rear of representative weekly rolls. The scan chart at the beginning shall correspond to the week of the earliest scanned record on the roll, and the one at the end shall be scanned during the week of the last scan on the roll. The date that each chart was scanned must be displayed on the film.

Computer output microfilm of scanned images should utilize AIIM Scanner Test Chart #2, and follow ANSI/AIIM MS44 recommended procedures as outlined above.

Resolution Test Targets

All operations producing microfilm for deposit utilizing the Kodak Archive Writer must incorporate the Kodak recommended test target, designed specifically for use with the Archive Writer. This target must be presented unscaled, in the positive mode, via the Kodak TIFF file, on the beginning and end of each roll of microfilm.

Computer output microfilm of scanned or born digital images should include resolution charts as recommended in ANSI/AIIM MS 62 1999 *Recommended Practice for COM Recording Systems Having an Internal Electronic Forms Generating System—Operational Practices for Inspection and Quality Control*.

Density The minimum background density on microfilm output must be within the ranges prescribed for the Archive Writer or for COM.

Print Test The South Carolina Department of Archives and History reserves the right to “test” the quality of any given roll of microfilm from scanned or born digital images. This will be done through film duplication (to the generation required for the records schedule application) to a final paper print. The vendor or service provider will be billed a standard fee for this quality check.

Filmer/Scanners There are currently available filmer/scanners that have the ability to film and scan simultaneously. This type of equipment actually films the paper record utilizing a variation of a conventional photographic system, for the production of the film roll. With this equipment, standard microfilm resolution charts and density targets should be used to monitor film quality and measured in conformity with Quality Standards and Practices for the Microfilming of Public Records (Regulations 12-200 through 12-203, *Code of Laws of South Carolina, 1976*, as amended).



 **Public records information leaflet no. 27**

- Public information leaflets from the Archives***
- no. 1 *Legal requirements for microfilming public records (1992)*
 - no. 2 *On choosing records for microfilming (1992)*
 - no. 3 *Service bureau or in-house microfilming (1992)*
 - no. 4 *Targeting and certification of microfilm (1996 revised)*
 - no. 5 *Choosing a microfilm camera (1992)*
 - no. 6 *Quality testing of microfilm (1992)*
 - no. 7 *Microfilm and microforms (1992)*
 - no. 8 *Choosing a micrographics service bureau (1992)*
 - no. 9 *Choosing microfilm readers and reader/printers (1992)*
 - no. 10 *Computer assisted retrieval systems (1992)*
 - no. 11 *Microfilm storage (1992)*
 - no. 12 *Preservation microfilming (1992)*
 - no. 13 *Optical Disk: policy statement and recommended practices (1996 revised)*
 - no. 14 *Storing records in the State Records Center (1993)*
 - no. 15 *The deposit of security microfilm (1993)*
 - no. 16 *Disaster preparedness and recovery in state and local government records offices (1993)*
 - no. 17 *How to conduct a records inventory (1993)*
 - no. 18 *How to establish records retention schedules (1993)*
 - no. 19 *Photographic media (to be announced)*
 - no. 20 *Editing and splicing roll microfilm of long-term or archival value (1994)*
 - no. 21 *Managing e-mail (1998)*
 - no. 22 *Standards for microfilm service bureau certification (1996)*
 - no. 23 *Sample e-mail policies (1998)*
 - no. 24 *Storage and handling guidelines for maintenance of electronic records of long-term or enduring value (1998)*
 - no. 25 *Preserving evidence: recommended practices for creating and maintaining legally-admissible records on automated systems (1999)*
 - no. 26 *Managing public records on web sites (2002)*
 - no. 27 *Guidelines for the conversion of digital images to microfilm format (2003)*

*Many of these leaflets are available electronically through our WEB page at www.sc.state.us/scdah/techflft.htm

