

Tips for Hybrid Microfilm

SCOPE:

This document provides guidance for Ohio public sector agencies for the conversion of records to microfilm, which were either born-digital or converted via image processing, for the purpose of maintaining official records in an eye-readable, micrographic format and/or as a redundancy or back-up copy.

EQUIPMENT BASICS:

There are two basic types of equipment that are used to create hybrid microfilm:

- **Archive-writer:** a device that converts digital images to microfilm; while typically more expensive, the agency has the ability to make sure a quality digital image has been captured prior to committing it to microfilm.
- **Scanner/filmer:** an imaging device with two cameras, one that scans a digital image and one that images the document to microfilm; while less expensive, this equipment type is not recommended as it is more complex to correct documents that are scanned poorly.

THE STANDARD OPERATING PROCEDURES:

SOPs should define the basic processes involved in the production of microfilm from a digital or digitized format. Types of functions or processes may include, but may not be limited to:

- A discussion of the role of hybrid microfilm within your organization's records management program
- Equipment testing requirements and frequency
- Required technical specifications

INTENT:

This guidance is intended to assist Ohio state agencies, local governments, and public educational institutions with ensuring that the records they convert from a digital format to microfilm are authentic, reliable, have integrity, and are usable. The ultimate criteria are that the records be legible and accessible for their intended use.

FILM BASICS:

- **Original Master:** The master microfilm for permanent records should be 16mm, 35mm, or 105mm negative non-perforated silver-gelatin on a polyester base, as described in ANSI IT9.1. The film should have an LE-500 rating (Life Expectancy of 500 years).
- **Duplicate:** If the film is expected to be handled more than 10 times during its lifetime, a duplicate copy should be made. The use copy may be silver-gelatin film, diazo film or vesicular film. Diazo film is the recommended and preferred type for usage film.

- Document preparation functions common to all jobs
- Pre-production testing
- Index data and film backup
- Production Quality Control
- Access and security
- Administration and maintenance
- Audit trails
- Disaster recovery
- Employee safety

TECHNICAL SPECIFICATION RECOMMENDATIONS:

There are various technical specifications that an organization needs to consider in the production of hybrid microfilm.

Digital Image Resolution: The resolution of digital images should be a minimum of 300dpi

Reduction Ratio: A reduction ratio should be selected that is capable of producing legible images and is dependent upon the size of film one is creating: 16mm, 35mm, or 105mm.

Image Sequencing: Images on the microfilm should be organized so the records can be accessed in the same way they would if the microfilm had been created from paper systems.

Indexing: It is preferable for the content of all index fields associated with the images on individual rolls to be provided in a microfilm format.

Blip: Image marks or blips that are used to identify the frame number of each frame on a roll of film and may aid your organization in the future migration.

Targets:

At FRONT of Roll of microfilm before images: Background Density, Resolution Test, Certificate of Authenticity, and Title Target

At END of Roll of microfilm after images: Equipment Operator Certificate, Resolution Test, Background Density

Film Leader/Trailer: Its recommended that each roll of microfilm should have a leader of no less than a 3-foot of film before the first target and after the last target.

Silver Film Processing: Film produced for purposes of managing public records should be processed in accordance with ISO 18901:2002 - *Imaging materials - Processed silver-gelatin type black-and-white films - Specifications for stability* (as amended or replaced) and ANSI/AIIM MS23-1998 - *Practice for Operational Procedures / Inspection and Quality Control of First-Generation Silver-Gelatin Microfilm of Documents* (as amended or replaced).

Residual Thiosulfate: It is recommended that testing for residual thiosulfates (commonly known as methylene-blue testing) be performed not less than once per month. LE-500 films should contain no more than 0.014 g of thiosulfate ion per in².

Quality Control/Inspection of Newly Processed Film: Quality control processes should be implemented for each application to be microfilmed. Criteria may include, but may not be limited to:

- Overall legibility
- Smallest detail legibility captured
- Completeness of detail
- Dimensional accuracy compared with the original
- Completeness of overall image area
- Density
- Image skew
- Image orientation
- Index data accuracy
- Image and index format compliance

Splicing and Retakes: The standards do not allow a roll of film produced from digital images to contain splicing or retakes.

