

## 7 STORAGE

Security or preservation films shall not be used as a daily work record. Additionally, security and preservation microfilms shall not be stored either within the same room or in rooms connected by ventilating ducts with working copy microfilm, due to the off-gassing of non-silver films. Security or preservation films shall be stored in a vault meeting the standards cited below.

### 7.1 Security or Preservation Film Cores and Containers

7.1.1 Cores and Reels - Roll microfilm will be wound on cores and reels as specified in ANSI/AIIM MS34-1990 (*American National Standard Dimensions for Reels Used for 16mm and 35mm Microfilm*). The material for cores and reels shall be made of an inert plastic, which does not off-gas reactive fumes, such as those containing peroxides. Metal may be used as long as it is non-corrodible and free from sharp edges. Rubber bands shall not be used on microfilm rolls; strips of an acid and lignin free buffered paper with strong ties will be used to secure the film on the roll.

7.1.2 Storage Containers - Microfilm shall be stored in closed containers made of an inert material such as paper, plastic, or metal which conforms with ANSI IT9.2-1991 (*American National Standard for Imaging Media –Photographic Processed Films, Plates, and Papers – Filing Enclosures and Storage Containers*). Because of the lack of suitable tests to guarantee the inert quality of plastics currently used for film containers, paper storage containers are recommended.

7.1.2.1 Paper - The material shall be comprised of one piece, with hinged lid, made from .020" thick bleached kraft pulp board with a pH of not less than 7.2 nor more than 9.5 with at least a 2 % calcium carbonate buffer. The board shall be free of lignin, metal particles, waxes, plasticizers, adhesives and peroxide-generating materials. If the container is dyed, it should be dyed with a light, fast-drying, non-bleeding dye only on the outside of the container.

7.1.2.2 Plastic - The container shall be constructed of a chemically inert material that does not give off reactive fumes such as those which contain peroxides. Uncoated polyester materials, polyethylene and polypropylene are acceptable.

7.1.2.3 Metal - The metal used for containers shall be non-corrodible. Anodized aluminum and stainless steel are acceptable. Any surface protector on steel, which contains reactive fumes or peroxides, shall not be used.

## 7.2 Security or Preservation Film Storage

Storage should be in accord with ANSI/NAPM IT9.11-1993 (*American National Standard for Imaging Media – Processed Safety Photographic Films – Storage*), with minimum standards as follows:

- 7.2.1 Temperature - The temperature should not exceed 68° F.
- 7.2.2 Humidity - The optimum relative humidity varies with the temperature at which the microfilm is stored. At 68° ± 2° F., 35% ± 5% relative humidity is suggested. In no case should relative humidity exceed 50% or fall below 15%. Short-term, non-routine fluctuations in humidity should be avoided. Routine fluctuations should not exceed 5% over a 24-hour period.
- 7.2.3 Monitoring - Temperature and humidity levels for security film storage facilities should be checked and recorded daily.
- 7.2.4 Atmospheric Controls - Properly controlled air conditioning may be necessary for maintaining temperature and humidity. The controls should meet the specifications as outlined in ANSI/NAPM IT9.11-1993 and as follows.
- 7.2.5 Air Purity - It is important to protect security microfilm against airborne particles that might abrade or degrade the film image or film base. Solid particles should be removed by mechanical filters having an arrestment rate of 85 percent. Filters must be of non-combustible material. Gaseous impurities can be adequately eliminated by location of the security vault in an area as far as possible from urban or industrial areas where contaminants may be present in harmful concentrations. Where protection is not afforded by the above, air washers or absorbers are required.
- 7.2.6 Light - Film should be kept in dark conditions, with lights remaining off except when someone is in the storage area.
- 7.2.7 Fire and Associated Hazards - Protection can be achieved by placing security film in either fire-resistive vaults or insulated records containers (class 150). If fire-resistive vaults are used, they should be constructed in accordance with ANSI/NFPA 232-1991, Protection of Records.

**Note:** Damage to photographic film records by high temperatures can happen even if the film is not destroyed by fire. Silver gelatin images can withstand temperatures as high as 302° Fahrenheit for several hours without significant loss in image quality. However, in addition to potential

image loss, photographic films may become so severely distorted at high temperatures that they can be viewed, projected or printed only with difficulty. One danger to film as a result of high temperature exposure, is the sticking or blotching of adjacent sheets or laps, particularly with film having gelatin or special backings. Film must be protected against steam, otherwise sticking, gelatin emulsion melting, and severe distortion will result.

Ultimately the best protection against fire is keeping duplicate copies of the film in separate storage areas. If you use the three-copy system, the printing master should not be kept with the camera negative.

### **7.3 Working Copy Films Storage**

7.3.1 Temperature - Preferably below 70 degrees with maximum temperature not to exceed 77 degrees.

7.3.2 Relative Humidity - Preferably 20-50%, with a maximum not to exceed 60%.

7.3.3 Atmospheric Controls - Not necessary unless film is subjected to frequent or sustained high humidity or temperatures, or stored in an area known for air pollution problems.

### **7.4 Custody of Microfilms/Security Storage**

Security or preservation microfilms of public records must remain in public custody and must be retained in the office of record, or stored in a publicly owned facility subject to inspection and approval for security storage in accord with State microfilm storage standards. Security microfilm can be transferred to the State Archives for storage.<sup>21</sup> Instructions for use of security vaults may be obtained from the State Archives.

### **7.5 Use and Removal of Security Microfilm**

Security microfilm is for use only as a master for authorized film duplication. Security microfilm will not be removed from the state archives storage facility except for permanent return to the agency of origin upon a sixty-day notification by the agency or the division of archives. Any relocation of security microfilm must be to facilities meeting security film storage standards. (WAC 434-677-060)

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<sup>21</sup> RCW 40.14.020 "All Public records shall be and remain the property of the state of Washington." See also RCW 40.10.020 "The state archivist is authorized to reproduce those documents designated as essential by the several elected and appointed officials of the state and local government by microfilm...and to assist and cooperate in the storage and safeguarding of such reproductions in such a place as is recommended by the state archivist..."

## 8 FILM HANDLING

All microfilms should be handled only on their edges to prevent fingerprint smudges that can attract airborne particles that will abrade the film emulsion or contain oils that may have a detrimental effect on the film.

- 8.1 Security or preservation microfilms should always be handled on their edges and handlers are required to wear thin cotton gloves.
- 8.2 All films should be handled by film laboratory staff, after film processing and until the film is released to the custodian, as above.

## 9 FILM MAINTENANCE/INSPECTION

- 9.1 Security microfilms should be inspected annually for any signs of deterioration as per the requirements in ANSI/AIIM MS45-1990 (*American National Standard for Information and Image Management – Recommended Practice for Inspection of Stored Silver-Gelatin Microforms for Evidence of Deterioration*) and ANSI/AIIM MS48-1990. If any problems are encountered, notify the State Archives immediately for assistance.

9.1.1 Sampling - As a rule, if security microfilm storage is under 100 rolls, all films should be inspected. If the number is over 100 rolls, a representative sample may be inspected. An adequate number of properly selected lot samples should be inspected each year; this number should total 0.1% of the collection or 100 rolls, whichever is greater. The sampling pattern shall be created to ensure that all parts of the collection will be inspected. Samples should be selected so as to overlap with film previously inspected for the purpose of determining if any changes have occurred in the interim.

9.1.2 Inspection - Inspection should take place in a clean room, near the storage area to prevent damage during transit, with a relatively dust free atmosphere and with atmospheric conditions as close as possible to the storage area (see section 7). Additionally, the above standards concerning the handling of microfilm apply during inspection (see section 8).

9.1.2.1 Inspectors should look for mold, fungus, oxidation blemishes (redox), film curl, discoloration, excessive brittleness, emulsion separation, and sticking film.

9.1.2.2 The inspection process should also include re-reading the resolution test and re-measuring the density to ensure image stability.

9.1.2.3 The inspectors should also check for signs of rust, corrosion, or other deterioration on the cores, reels, and storage containers.

9.2 Working copy microfilms should be periodically inspected to determine the extent of abrasive damage that may have occurred during use. If the damage appears significant and if the film is to be retained and used for an extended period of time, it is probably cost effective to have it copied for security purposes.

## **10 DISPOSAL OF MICROFILM**

### **10.1 Destruction Authorization**

The State or Local Records Committee, in accord with RCW 40.14, must authorize the destruction of original camera and silver copy security microfilms.

For records destruction authorization procedures, state agencies should refer to the Division of Archives and Records Management's Records Handbook Number 2, and consult the agency Records Officer. Local agencies should refer to the applicable Local Government Records Retention Schedule and Records Management manuals, both published by the Division of Archives and Records Management.

### **10.2 Physical Disposal of Microfilms**

When either the State or Local Records Committee has authorized the disposal of microfilms it shall be the responsibility of the agency having requested authorization, to destroy such records promptly and effectively. Such disposal should reduce the microfilm to an illegible condition. The most appropriate method of accomplishing destruction is by use of a cross-cut shredder.

## **11 MICROFILM PROGRAM, MATERIALS AND SYSTEMS APPROVAL**

11.1 State Agencies may convert public records to microfilm provided that:

1. The records to be filmed are properly approved for filming and disposition by the State Records Committee in accord with the provisions of RCW 40.14.060.

2. The microfilm system meets state standards and the microfilm project is approved by the State Archivist in accord with the provisions of RCW 40.14.060 and 40.20.
3. Any planning and acquisition requirements of the Department of Information Services are met.

11.1.1 Records Retention and Disposition Authorization - Form SSA-53B, Records Retention Schedule, is used to schedule the retention and disposition of state records and must be presented to the State Records Committee for approval. The Agency Records Officer should be consulted on retention scheduling, and by law, has agency level responsibility for approving microfilm systems and projects.<sup>22</sup>

Record scheduling decisions to use microfilm which affect the retention of the original record must be accompanied by a cost benefit analysis which compares the cost of converting to, using and maintaining the microfilm system with the cost of the present system, alternate film systems, and other alternatives.

11.1.2 Microfilm Project and System Approval - Requests for microfilm project/equipment acquisition are made to the Division of Archives. The Archives will also provide consultative assistance in system and equipment selection, and will assist with cost benefit analysis.

11.2 Local Government Agencies may convert public records to microfilm upon approval of the Local Records Committee, in accord with Chapter 40.14.070 RCW, except as otherwise provided by law, and provided the microfilm material and system has the approval of the State Auditor, in accord with Chapter 40.20 RCW.

11.2.1 Approval by the Local Records Committee is obtained by submitting a *Public Records Retention Schedule and Destruction Authorization* form SSA-24, citing the records to be filmed, their retention in the original form and retention of the microfilm.

11.2.2 Approval of the Microfilm Material and System by the State Auditor may be obtained by submitting a form SSA-31, *Local Agency Microfilm Project Authorization Request*, through the State Archivist.

## 12 AVAILABLE MICROFILM SERVICES

12.1 Use of State Archives Imaging Services - The State Archives provides microfilm services for use by state and local agencies through interagency agreement or competitive bid. Cost estimates are provided and use of the

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<sup>22</sup> See RCW 40.14.040 "...The records officer shall...Coordinate all aspects of the records management program."