

**State of Michigan
Records Management Services**

Recommended Environmental Conditions for Storing Various Recording Media

Information can be recorded on a variety of storage media including paper, photographs, audio/visual media, microfilm, magnetic tape cartridges, optical discs, etc. All of these recording media are unstable and are capable of losing the information stored on them. Recording media require specific environmental conditions if they contain information that needs to be retained for a significant length of time. Proper storage conditions are especially important for records with permanent or archival value.

Extreme environmental conditions including heat, cold and dampness will destroy records very quickly. As a result, the facility used to store valuable records should be designed to provide an environment that will promote the preservation of the media and the information therein. Some agencies have created in-house storage vaults for their valuable records, others have selected outside facilities for their storage needs. Regardless of where valuable records are stored, proper environmental conditions are essential for preserving records.

Agencies should know how long their records need to be retained, and if the records have archival value, before they select a storage facility. All records should be inventoried, and their retention periods should be identified on an approved Retention and Disposal Schedule. State agencies and local governments should contact the Records Management Services if they have questions about Retention and Disposal Schedules (see information below).

The following environmental conditions should be addressed when selecting or designing a storage facility for records:

1. **Size:** Can the facility hold the volume of records to be stored, as well as future accumulations?
2. **Location:** Should the records be stored above ground or below ground? How easy is it to retrieve records from the storage facility?
3. **Security:** How is access granted to the records? What locks or guards protect the records?
4. **Fire Prevention/Suppression System:** What fire alarms exist? Is there an emergency plan; are emergency exits clearly marked and accessible? Is there a water sprinkler or chemical suppression system? Are wet pipes located in a place that could damage records if they leaked?
5. **Temperature/Humidity Controls:** What system is in place to create and monitor ideal environmental conditions; can the facility accommodate the needs of the records?
6. **Pests:** Has the facility had trouble with bugs and rodents? What precautions are in place to prevent infestation; how is infestation treated; are new shipments screened for pests?

The control of temperature and relative humidity is often cited as the initial step in the environmental protection of records with permanent or archival value. The following environmental and storage conditions are recommended for records that need to be retained for long periods of time:

Storage	Media Temperature	Relative Humidity	Storage Containers
Paper (preferably acid-free paper), bound or unbound records	68°F	55%	Baked enamel steel shelves or cabinets. Acid-free boxes, envelopes, folders, etc.
Magnetic recording media, including audio/video tapes, and computer tapes	65°F	35-45%	Shelve vertically in dust-proof containers
Microforms, including film, fiche, aperture cards, etc. (master negatives only)	68°F	45-55%	Shelve vertically. Boxes/reels should be stored in non-ferrous metal or inert plastic.
Photographs (black and white, color)	68°F	35-40%	Individually store in acid-free, seamless envelopes.
Negatives (safety-based film)	68°F	45-55%	Individually store in acid-free, seamless envelopes. (Do not store negatives with prints)
Slides	68°F	45-55%	Store vertically in an inert plastic container or carousel.
Optical disks	65-75°F	30-50%	Store each optical storage disk in a protective cartridge and shelve vertically.
Combined media	68-72°F	45-49%	Store each media type separately.

The most important environmental consideration is to protect against daily fluctuations in temperature and relative humidity. The above noted conditions should not vary more than 2-3% during any 24-hour period.

For further information, please contact:

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<http://www.michigan.gov/recordsmanagement/>