



Guidelines for Selecting Storage Supplies

Summary: Choosing appropriate shelving and supplies to store permanent records can be complicated. This handout seeks to simplify the process by providing descriptions of products commonly used by the archival and records management community. Definitions of some of the terms appear at the end of the handout.

ARCHIVAL SUPPLIES

Providing appropriate storage and housing for permanent records offers many benefits — it protects them from light and dust, acts a buffer against fluctuations in temperature and relative humidity, and allows for safe handling and transport. Supplies intended for the safe, long term storage of permanent records should be chemically stable and non-damaging physically to the items they are protecting. Following are guidelines and specifications for commonly used containers to store archival records including shelving, boxes, folders, and sleeves.

Always purchase supplies for housing permanent records from reputable archival and conservation vendors. Supplies that meet the specifications provided below **cannot** be found at local stationery, office supply, or art stores. When purchasing archival supplies be sure to specify exactly what you want (i.e. the pH range of file folders) to the vendor or supplier. Inspect new shipments for potential damage to records (i.e. sharp edges), and spot test supplies for acid content using a pH pen.

Record Storage Boxes

Reinforced corrugated cardboard storage boxes are the industry standard for the transport and storage of large quantities of permanent records. Each box holds a cubic foot of records of either legal or letter size. Boxes should have separate lids; double layer flat bottoms are preferred for superior strength during handling and stacking. Avoid automatic set-up-type boxes with collapsing bottoms because they will not hold up when filled with heavy files. Record storage boxes typically measure 12"x15"x10". Anything larger is too heavy when filled and is more likely to cause injury to staff while retrieving and transporting boxes.

Record Storage Boxes— acid-neutral

Use for: Appropriate for storing large quantities of modern records. Meets the minimum standard for the storage of permanent records.

Specifications:

- Constructed of sturdy, corrugated board
- Double strength end walls and double thickness bottom
- Color should be light fast and non-bleeding, such as tan or off white
- Have a pH not lower than 7.0
- Should not have glued or stapled seams



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Record Storage Boxes — acid-free/ low-lignin, buffered

Use for: Preferred container for permanent storage of a variety of paper records, especially older records with long term value including photographic materials.

Specifications:

- Constructed of sturdy, corrugated board
- Double strength end walls and double thickness bottom
- Color should be light fast and non-bleeding, such as tan or off white
- Have a pH between 7.0 and 9.5
- Contain a minimum 2% calcium carbonate alkaline reserve
- Contain no more than 1% lignin
- Be made from cellulose fibers (cotton or purified wood pulp)
- Should not have glued or stapled seams

Document Cases

Use for: Long term storage of smaller quantities or heavily used archival records.

These upright, hinged-lid boxes with reinforced metal edges are commonly used for the permanent storage of smaller collections or heavily used permanent records. Because they are lighter in weight than a record storage box, document cases allow for easy retrieval. Document cases come in two depths and in letter and legal size. Choose a consistent box size according to the predominant size of the documents within a single collection or series.

Specifications:

- Constructed of sturdy, chemically stable, 60-point board
- Should not have seams or protruding edges that could pose damage to the contents
- Should fully close without gaps or handle holes (Cases with pull strings are preferred.)
- Have a pH between 7.0 and 9.5
- Contain a minimum 2% calcium carbonate alkaline reserve
- Contain no more than 1% lignin

File Folders

Use for: Secondary support for storing similarly sized letter and legal size documents before placing into document cases or record storage boxes.

File folders provide an additional layer of protection for loose records. They keep records in order, provide a place for labeling, and facilitate retrieval and use. Folders are made from a single piece of paper board folded along the primary score line. Folders with a reinforced tab that extends across the length of the folder provides added durability.

Specifications:

- Constructed of 10 point folder stock

- Reinforced 1" tab across the top of the back flap for identification
- At least two additional score lines above the primary score line on the front flap
- Color should be light fast and non-bleeding, such as tan or off white
- Have a pH between 7.0 and 9.5
- Contain a minimum 2% calcium carbonate alkaline reserve
- Contain no more than 1% lignin
- Made from cellulose fibers

Map and Print Folders

Use for: Permanent storage of oversize flat paper items such as maps, newspapers, prints, and posters. The folder provides secondary support and should always be used in conjunction with a primary enclosure (large flat oversize/newspaper storage box) or a map filing cabinet.

Oversize folders are made from large sheets of folder stock folded flush and straight cut along the longest dimension. They range in size from 18" x 24" up to 36" x 48".

Specifications:

- Constructed of 10 or 20 point folder stock
- Should not be glued
- Color should be light fast and non-bleeding, such as tan or off white
- Have a pH between 7.0 and 9.5
- Contain a minimum 2% calcium carbonate alkaline reserve
- Contain no more than 1% lignin
- Made from cellulose fibers

Photographic Enclosures

Photographic materials (prints, negatives, slides, etc.) should be stored individually in a high quality paper or plastic enclosure and then placed in standard size boxes. Paper enclosures are less expensive than plastic and provide physical support and protection from light. Plastic enclosures facilitate handling and use without potentially damaging an item from pulling it in and out of a paper sleeve. The three types of plastics that are acceptable for archival storage are polyester, polypropylene, and polyethylene. All enclosures and materials used to house photographs should pass the Photographic Activity Test or (PAT) and also meet the criteria specified in ISO 18902, which specifies the components used to make the enclosure. Suppliers of photographic enclosures should be familiar with both the PAT and ISO 18902.

Paper Enclosures for Photos

Use for: Storing most all types of black and white and color negatives and prints, slides, as well as color processes, cyanotypes, blueprints, and albumen prints.

Paper envelopes and sleeves come in a variety of sizes for storing photographic materials. Orient photos in envelopes or sleeves so that the emulsion is facing away from any seams to prevent damage from the seam edge or staining from the adhesive.

Specifications:

- Envelopes should have side seams, which are sealed on the outside
- Envelopes should not have flaps if they are to be placed into boxes
- pH neutral adhesive used to fasten the seams
- Have a pH between 7.0 and 9.5
- Contain a minimum 2% calcium carbonate alkaline reserve
- Contain no more than 1% lignin
- Passes the Photograph Activity Test (PAT), if being used to store photographic materials. (Vendor should be able to certify that the material passes the PAT)

Plastic Enclosures for Photos

Use for: Storing most types of heavily used black and white and color negatives and prints. (Fragile paper single paged documents may also be stored in plastic enclosures.)

Plastic envelopes and sleeves made of polyester, polyethylene and polypropylene come in a variety of sizes. Group images by size if possible and house each individually.

Specifications:

- Pure and chemically inert
- Naturally flexible, no added plasticizers
- Have adequate strength
- Should be clear; no coloring, dyes, or coatings
- No additives, such as UV inhibitors or slip-agents
- Flexibility of the film should match the need

Photograph and Print Boxes

Use for: Storing photographic materials in envelopes or sleeves.

Photo boxes come in a variety of sizes. Store 8" x 10" and smaller items in upright boxes. Add alkaline buffered rigid boards every six inches for added support. Larger items should be stored in flat (clamshell, drop front, or full lid telescoping) boxes.

Specifications:

- Constructed of sturdy, chemically stable, 60-point board
- Should have reinforcing metal edges
- Should not have seams or protruding edges that could pose damage to the contents
- Should fully close without gaps or handle holes
- Have a pH between 7.0 and 9.5
- Contain a minimum 2% calcium carbonate alkaline reserve
- Contain no more than 1% lignin
- Passes the Photograph Activity Test (PAT), if being used to store photographic materials. (Vendor should be able to certify that the material passes the PAT.)

SHELVING AND STORAGE FURNITURE

Shelving and storage furniture used to house permanent records must be sturdy and chemically stable, it should not off gas (smell like paint or lacquer) or have sharp corners or protruding edges. Stationary

ranges of industrial type shelving is commonly used to store records housed in document, record storage, or flat boxes. Shelving should be installed parallel to the direction of air flow and away from exterior walls and windows. The shelving units should have four post construction, be bolted to the floor and adjacent units, and they should also have side bracing. Depending on needs and budget, there is a variety of specialty cabinets and shelving available for purchase, as well as compact or mobile shelving to maximize space. Wood shelving, and especially wood cabinets with unsealed wooden interiors (such as filing cabinets) are not recommended for storing materials of permanent value because the acidic gases given off by the wood as it ages can hasten deterioration of materials.

Specifications:

- Constructed of heavy gauge steel
- Smooth and non-abrasive with rounded corners and no sharp edges
- Finish should be chemically stable; powder coating finish is preferred
- Adjustable shelves
- Shelves should be wide enough to fully support oversized volumes and various box sizes

DEFINITIONS

Alkaline reserve: Creates a buffering effect by neutralizing acidic gases that can be emitted by acidic documents stored in an enclosure.

Cellulose fibers: Cotton or purified wood pulp.

Lignin: A highly acidic substance that occurs naturally in plant matter, which if not removed causes paper to deteriorate and turn yellow rapidly.

Photograph Activity Test (PAT): The Photographic Activity Test (PAT) is a worldwide standard (ISO Standard 14523) for archival quality in photographic enclosures. Developed by the Image Permanence Institute at the Rochester Institute of Technology, this test predicts possible interactions between photographic images and the enclosures in which they are stored. The PAT is also used to test the components of enclosures, such as adhesives, inks, paints, labels, and tapes.

pH: pH values are calculated in powers of ten. When the pH is above seven, the solution is basic (alkaline), and when it is below seven, the solution is acidic. Storing permanent records in acidic boxes and folders can hasten deterioration.

pH Pen– a pen that contains a chemical that looks yellow when exposed to acid or purple when alkaline. Available from archival and conservation supplier to be used to test supplies (not for use on the records themselves.)