Canadian Council of Archives
Conseil canadien des archives

INFORMATION BULLETIN

Archival Enclosures: Paper Records

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Acknowledgement

The Canadian Council of Archives (CCA) wishes to thank Ms. Rosaleen Hill for her work in updating this bulletin as well as her Preservation Committee colleagues for their assistance.

Canadian Council of Archives
ISBN 0-929115-52-X

Archival Enclosures: Paper Records

Enclosures should provide protection from dust, mishandling, pollutants and should also provide physical support. Most archival enclosures are made from either paper or plastic. The choice of using either a paper or plastic enclosure will depend on the type of record being enclosed and on environmental conditions that the archives is able to provide.

The term 'archival' does not necessarily designate a high quality —safe— material. In many cases it is used simply as an adjective and as such has no relation to quality. Generally, it is better to purchase archival enclosures from a reputable conservation supply company than other retailers as the conservation supply company will provide specific product information in their catalogues or on request. (See CCA: Preservation Committee Information Bulletin 10: Archival Enclosures: An Update for a list of conservation materials suppliers).

Archival enclosures can be divided into two categories: primary and secondary. Primary enclosures (usually envelopes, sleeves or folders) are in direct contact with the document. These should be made of the highest quality materials since they affect the document and its immediate environment most directly. Secondary enclosures (usually boxes) do not touch the documents and have a correspondingly lesser effect on their contents. So this means on should not fill an expensive acid-free/lignin-free box with manila folders. It is the folders that should be acid and lignin-free. In ideal circumstances, boxes should also be made of the best quality materials but, where budgetary constraints apply, lower quality boxes could be used.

Standard Specifications for Paper Enclosures

Enclosures should conform to specifications of maximum permanence -- that is, a life expectancy of several hundred years and a level of durability classed as "high usage". Any enclosure passing the Photographic Activity Test can be said to be more benign and therefore preferable as a container for any type of document.

New products and theories are constantly being advanced in the paper industry. Archives must remain up to date on these developments and be prepared to test new products as they appear and abandon dated ones. For example, new research has indicated that if paper is alkaline, buffered and free of rosin size, a certain percentage of lignin in the paper furnish may not affect permanence as much as previously thought. This research has been incorporated into the recommendations of Canadian General Standards Board Permanence of Paper for Records, Books and Other Documents (CGSB-9.70-2000). CGSB-9.70-2000 where up to 1% lignin is allowable in the paper furnish. It should be noted that ANSI/NISO Z39.48-1992 (R2002) Permanence for Publications and Documents in Libraries and Archives and ISO 9706: 1994 Information and

documentation – Paper for documents – Requirements for permanence — do not allow for any lignin in the paper furnish.

Poor quality acidic enclosures may transfer acids to the enclosed record causing embrittlement, discolouration and may increase the rate of deterioration.

All archival paper enclosures should be made from:

- Acid-free materials
- Fully bleached, alpha cellulose (highly processed wood pulp) or rag (cotton or linen) pulp
- Free of lignin and ground wood (CGSB 9.70-2000 allows up to 1%)
- Paper with a pH between 7 and 8.5 with an alkaline reserve of 2% calcium carbonate or other suitable alkaline buffer (CGSB 9.70-2000 between 7 and 10)
- Paper that is alkaline or neutral sized

Paper enclosures selected for photographic enclosures must meet the above recommendations in addition to passing the Photographic Activity Test (ISO 14523:1997).

Molecular Traps

Some archival enclosures, such as MicroChamber papers, in addition to alkaline buffering have molecular traps. Molecular traps, made from either zeolites or activated carbon, are designed to adsorb specific types of gaseous pollutants. It is thought that the molecular trap will trap or adsorb pollutants from the ambient environment or pollutants being off-gassed by the archival record. These types of enclosures could be particularly useful for archives with poor environmental control and/or high indoor pollutant levels.

Plastics

A wide variety of plastic enclosures are available for archival record storage. Plastic enclosures selected for archival use should not contain plasticizers, slip agents, ultraviolet inhibitors, dyes, coatings or other materials that can break down leading to the deterioration of the enclosed record.

Safe plastics include:

- Polyester (polyethylene terepthalate) Mylar Type D or Melinex 516
- Polypropylene
- Polyethylene – high density
- Polystyrene
- Polycarbonate

(It should be noted that Dupont ceased production of Mylar Type D in 2001. A plastic equivalent to Mylar Type D is Melinex Type 516 and is also made by Dupont.)

Avoid polyvinyl chloride (PVC) plastic. The Beilstein Test outlined in the Canadian Conservation Institute Note N17/1 is simple method to determine if a plastic contains chlorine. (Canadian Conservation Institute Notes can be ordered from www.cci-icc.gc.ca) This test does not specifically identify PVC but if the test is positive, it indicates that chlorine is present and that the plastic would not be an appropriate archival storage material.

Archival Boxes

Archival storage boxes are available in three materials:

- solid-core paper card
- corrugated paper card
- corrugated polypropylene/polyethylene copolymer (Coroplast).

Archival storage boxes made from solid-core paper card are available in either acid-free or acid-free/lignin-free formats, the latter commanding a price premium due to higher manufacturing costs. Manufacturer specifications for solid-core paper card boxes vary from company to company. Some of the variations that can be found in the boxes include: textured coatings, moisture resistance, greater or lesser degrees of abrasion resistance and stiffness and Mylar barriers within the plys of the board.

One of the latest developments in this field is the MicroChamber paper and board recently patented by Conservation Resources International. This material includes a filtering layer of activated carbon and buffers**.** It is promoted by the company as being able to increase the longevity of acidic documents by actively absorbing pollutants from the surrounding environment as well as the degradation products off-gassing from the records themselves. Although expensive, if this product is shown through independent tests to be as effective as claimed, its use could be recommended at least for the storage of more valuable documents.

Corrugated card boxes are also available in acid-free and acid-free/lignin-free form

Coroplast is made from an inert homo or copolymer polypropylene/polyethylene which is extruded into a corrugated sheet having a very high flexural endurance and bursting strength. Like most plastics, Coroplast has some drawbacks including static charge and a low melting point. However, the boxes equal or exceed many of the physical specifications for paper based boxes and do not have any of their chemical problems. Coroplast boxes are priced competitively with paper-based boxes.

Information on other storage enclosures and methods can be found online at the Northeast Document Conservation (NEDCC) website. The NEDCC publication *Preservation of Library & Archival Materials: A Manual – Section 4 Storage and Handling* www.nedcc.org/plam3/index4.htm contains very useful information on housing a wide range of archival records.

References:

CAN/CGSB-9.7-2000 Permanence of Paper for Records, Books and Other Documents, Ottawa, Canadian General Standards Board.

ISO 9706: 1994 Information and documentation – Paper for documents – Requirements for permanence.
Note that ISO 9706 is the same standards as ANSI/NISO Z39.48-1992 (R2002).

ISO 11108:1996 Information and documentation – Archival paper – Requirements for permanence and durability.

ISO14523:1999. *Photographic Activity Test*.

ANSI/NISO Z39.48-1992 (R2002) Permanence for Publications and Documents in Libraries and Archives. www.niso.org/standards/index.htm (available as a free PDF download).
Note that ISO 9706: 1994 is the same standards as ANSI/NISO Z39.48-1992 (R1997).

ANSI/NISO Z39.77-2001 Guidelines for Information About Preservation Products. www.niso.org/standards/index.html (available as a free PDF download).

ISO Standards can be ordered from www.ansi.org . Purchased standards can be received either in electronic format or mailed as a paper document.

Many ANSI/NISO standards and technical reports are available for FREE download. View the complete list of NISO standards and technical reports at: http://www.techstreet.com/nisogate.html

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Revised and Updated Rosaleen Hill 2003