



CONSERVATION LEAFLET

July 2002 (revised July 2014)

HUMIDIFICATION AND FLATTENING OF ROLLED OR FOLDED DOCUMENTS

Documents that have been rolled or folded for long periods of time resist opening and are likely to be damaged if forced open. Such documents may also be brittle, depending on the paper's age (especially if it was manufactured after about 1885), quality, and the conditions under which the documents were stored. Introducing moisture through humidification, followed by careful flattening, allows documents to safely return to a flat state. Humidification also reduces creases and fold lines that distort the image during microfilming. Great care, however, must be taken in handling fragile documents. Humidification should be closely monitored to prevent excessive moisture and the growth of mold or mildew.

If document exteriors have surface dirt on them, they may be gently brushed before humidifying to prevent dirt from setting into the paper. Do not attempt to open brittle documents for further cleaning. (For more information, see the "Surface Cleaning Documents and Book Pages" leaflet from ADAH.) If possible, strings, rubber bands, paper clips, and other fasteners should be removed before humidifying documents (see the "Removal of Fasteners from Documents" leaflet from ADAH). Should this threaten to cause damage, remove the fasteners after humidification and flattening.

Use extreme caution if humidifying coated (slick, magazine type) paper, photostats, photographs, and documents with water-sensitive ink (red and green). Moisture causes coated papers to stick together, the emulsion layer of photographs to soften, and colored inks to run.

Finding the best humidification method depends on the documents' fragility and how tightly they are rolled or folded. Of the two methods described below, the "humidification sandwich" is less likely to damage documents or encourage mildew. However, the first method should be used if documents are tightly rolled or folded.

Humidification Chambers. This type of humidification chamber is also useful for humidifying large documents, such as architectural drawings or maps. To construct a chamber, use two plastic trash cans—one twenty-gallon and one ten-gallon. Cut several holes in the sides of the ten-gallon can (near the top) to allow moist air to circulate. Pour about two inches of water into the large can, and then place the small can inside it. This arrangement, with the holes high and the water level low, prevents water from seeping into the smaller can and wetting the documents. The water should be tepid, as using warm water may cause condensation and damage the documents. Place a tight-fitting lid on the large can to keep moisture inside the chamber. If the documents are too long to permit the lid to close, cover the container with a large piece of plastic sheeting and tie string around it to create a "tent," thus enclosing the documents and allowing humidification. The small (inner) can should be left open.

A second type of humidification chamber—suitable for tri-folded and similar small documents—can be made from a rectangular plastic storage box with a tight-fitting lid. The box should be approximately three feet long by two feet wide by two feet deep. Preferably, it should also be transparent, so that documents inside may be observed. Pour approximately two inches of water into the box; then set plastic vegetable cartons, a wire screen, or some similar c inside so that it rests high enough (against the sides or on the bottom of the box) to keep documents well above the water, but low enough to permit sealing the lid. Several folded documents may be placed “on end” inside, leaving enough space between for moist air to circulate and for the documents to expand as they begin to regain moisture.

Monitoring Humidification. Monitor the humidification process often to prevent documents from becoming too moist. It is best to begin this process early in the morning and to check periodically throughout the day. Never leave documents in the chamber over a weekend. Remove the documents when they can be unrolled or unfolded without causing damage. Do not allow them to become wet, damp, or soggy. Documents that are sufficiently humidified should feel pliable and show little resistance to opening. Rolled documents will generally start to unroll during humidification. This process can be assisted by gently opening the documents in stages.

Flattening. After documents are removed from the humidification chamber, they should be flattened. Place them between two sheets of silicone release paper and two pieces of chipboard (thin cardboard) or acid-free blotting paper, then between two large pieces of wood (approximately 3/4 inch thick) or a sheet of plexiglass (1/16 inch thick). Place weights on top, and allow the documents to dry and flatten. This process will take from one to two days

Humidification “Sandwich.” To create a “sandwich” that will both humidify and flatten documents, place a sheet of chipboard or blotting paper on a flat surface (glass, plexiglass, or wood); then hold one side of a second sheet of chipboard under a faucet and run water on it. Shake off the excess water and lay this sheet on the first piece, wet side up. Place a third, dry sheet of chipboard on the stack; followed by a sheet of silicone release paper or blotting paper; the document(s) to be humidified; and a second sheet of silicone release paper. Make a second blotting paper/cardboard stack—like the first one, but with the wet side down—for the top of the “sandwich,” so that the documents are in the middle. Place another sheet of glass, wood, or plexiglass on top and then place weights on it. If the documents are not dry and flat after forty-eight hours, repeat the process.

Supplies and Suppliers. The supplies needed for humidification and flattening can be purchased from art supply stores, hardware or discount stores, or archival products catalogs: plastic trash cans or storage boxes; chipboard; blotting paper; silicone release paper; and plastic sheeting. For weights, use lead bars or bricks covered with paper. The following companies specialize in archival products:

- Hollinger Metal Edge: www.metaledgeinc.com
- Light Impressions: www.lightimpressionsdirect.com
- University Products: www.universityproducts.com

Alabama Department of Archives and History
P.O. Box 300100
Montgomery, AL 36130-0100
<http://www.archives.alabama.gov>