

COMPARISON OF DRYING TECHNIQUES FOR WATER-DAMAGED BOOKS AND RECORDS

<u>TECHNIQUES</u>	<u>PROCEDURE</u>	<u>SPEED</u>	<u>STAFF & LABOR</u>	<u>RESULTS*</u>
Air Drying	Damp items dried by circulating air in a low temperature, low humidity space. Requires large amounts of space and staff time.	days or weeks	high	Uncoated books/paper: swelling, cockling Only option for optical media, photos, vinyl, photographs, all microformats but microfilm Not recommended for magnetic media, motion
Dehumidification	Large, commercial dehumidifiers installed to dry building, furnishings, and collections <i>in situ</i> . Requires vendor.	varies (must be started w/in 24 hours)	low--materials don't have to be moved	Only for slightly damp uncoated books/paper, photographs Not recommended for magnetic media, motion picture film, microformats, optical media, vinyl, coated books/paper Stabilizes environment
Freezer Drying	Items placed in self-defrosting blast freezer (under -10° F) are frozen, ice crystals are slowly sublimated (goes directly from solid to gas). Can be done in-house or by vendor.	months	moderate	Slower alternative to Vacuum Freeze Drying for uncoated books/papers Temporary stabilization for all microformats except microfilm, as well as photographs and negatives except early processes and glass Not recommended for coated books/papers, magnetic media, motion picture film, microfilm, optical media, or vinyl
Vacuum Thermal Drying	Items placed in chamber; vacuum drawn; heat introduced to melt and/or "boil out" water. Temperature stays above 32° F. Requires vendor.	4-6 weeks per load	moderate	Not recommended for uncoated books/papers <u>unless</u> reformatting Not recommended for all other formats
Vacuum Freeze Drying	Frozen items placed in chamber; vacuum drawn; small amount of heat introduced (below 32° F). Ice crystals drawn out by sublimation (goes directly from solid to a gas). Requires vendor.	1-2 weeks per load	moderate	Recommended for uncoated books/paper Only option for coated books/paper--results vary by reaction time Not recommended for all other formats
Film and Tape Reprocessing	If water contaminated, rinse first with distilled water then ship wet/damp to recovery vendor; items are rewashed and dried; reprocessed items may need to be duplicated. Requires vendor.	varies based on condition of media	moderate	Recommended for microfilm, motion picture film, magnetic media that have gotten wet Not recommended for all other formats

For additional resources, see www.lyrasis.org/preservation.

* For leather, vellum, and parchment, consult a conservator.