The Following Are Alternatives To Air Drying Methods.

3. Vacuum Freeze-Drying
Description: Frozen books and documents are placed in a vacuum chamber. The vacuum is pulled, a source of heat introduced, and the collections, dried at temperatures below 32 F, remain frozen. The physical process known as sublimation takes place--i.e., ice crystals vaporize without melting. This means that there is no additional swelling or distortion beyond that incurred before the materials were placed in the chamber.

Use for: Large numbers of very wet books and documents.

Types of material: Books and paper. Best method for successfully drying coated paper (if frozen or treated within six hours of getting wet). May damage leather and vellum. Not suitable for photographic material.

Equipment: Specialized commercial chambers; large mobile units may be brought directly to the site.

Personnel. Professional operators.

Cost: Moderate cost per book if large numbers of books must be treated. Results are often so satisfactory additional funds for rebinding are not necessary.

Resources: Contact Conservation Department.

4. Freeze-Drying
Description: Books and documents are placed in a chamber frozen but at ambient pressures. Very cold coils are used to condense water vapor out of the air from around the books, a process which encourages the further sublimation of ice on the books to water vapor; this water vapor in turn is attracted to the cold condensing coils.

Use for: Large numbers of wet books and documents.

Type of material: Books and paper. Similar to vacuum freeze-drying.

Equipment: Specialized commercial equipment.
Personnel: Professional operators.

Cost: Low cost per book, if large numbers of books must be treated. Some distortion may occur in the process and some volumes may need rebinding.

Resources: Contact Conservation Department.

5. Vacuum Thermal-Drying

Description: Books and documents are placed in a vacuum thermal-drying chamber either wet or frozen. The vacuum is drawn, heat is introduced, and the materials are dried above 32 F°. This means that the materials stay wet while they dry.

Use for: Large numbers of materials with extensive water damage.

Types of materials: Good for paper documents; books are often distorted and will need extensive rebinding and paper sometimes loses some flexibility. Causes blocking (adhesion) of coated paper.

Equipment: Specialized commercial equipment.

Personnel: Professional operators.

Cost: Depending on circumstances, can be less expensive than air drying for large numbers of materials.

Resources: Contact Conservation Department.