

Conservator Hack for April 7, 2021

Freezers; upright or chest?

By Jane Dalley, CSP Conservator

A freezer is a useful appliance to have, especially in museums. In our homes, it keeps the ice cream handy and the meat packs cold until BBQ season. In museums, it can also be used to kill insects in infested artifacts, preserve deteriorating plastics, store water-damaged artifacts while deciding how to dry them, or safely store mouldy artifacts prior to disposal.

Any freezer that will cool efficiently to -20°C and maintain that temperature is suitable for the above-mentioned use, but there are two general configurations - upright freezers and chest freezers – and different features to choose among. I have put together a chart (below) with the pros and cons of each.

Options/Type	Upright Freezer	Chest Freezer
Auto defrost	Yes	No; must be done manually.
Capacity	Usually no more than 20 ft ³ ; 15 ft ³ taking into account door bins, shelves, etc	Chest freezers can go up to 22 ft ³ but usually have 20% more capacity than upright freezers since they don't have shelves, door bins, etc.
Ease of Access	Easy, especially for smaller items	You may have to dig down to the bottom; artifacts at the bottom can get crushed by the weight on top.
Configurable	Fully adjustable shelving can allow different sizes of boxes on different shelves to maximize interior space	Hanging baskets may be available. Otherwise, it is a big cold box.
Footprint	An upright 22-cubic-foot freezer takes up 2.5 feet by 2.5 feet of floor space	A 22-cubic-foot chest freezer uses a rectangle floor space of 2 feet by 6 feet. You can put shelving above it if you allow space for the door opening.
Cost	More expensive than a chest freezer	Cheaper than an upright freezer
Temperature	Door bins may be warmer than interior.	Constant cold temperature.
Noise	Noisier than a chest freezer.	Quieter than an upright freezer; stays colder during a power outage; uses less electricity.

Additional options such as an exterior digital display, an alarm that sounds when the door is left open and a lock are useful. It is better to have adjustable wire (not glass) shelves in an upright freezer as they are usually stronger.

The National Parks Service has a great series of videos on how to choose a freezer at <https://www.nps.gov/subjects/hfc/cold-storage-in-upright-freezers.htm>

I hope this info helps you plan your freezer purchase. Next week, I will go over the procedures for using the freezer for storage, salvage and pest control.

As always, I am available to answer questions and offer advice through the Cultural Stewardship Program. [Email](#) me anytime.