



n e w y o r k s t a t e
a r c h i v e s

Recommendations for Shelving for Inactive Records Storage

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Introduction

The most efficient means of housing records for inactive storage is in standard cubic-foot boxes that protect records from light and dust, but not all shelving is appropriate for storing boxes of records. Wooden shelving is not always strong enough to carry the weight of paper, tends to hold moisture, and provides extra material to feed a fire in your storage area. Through the natural process of decomposition, wooden and particle board shelving emit gases that will degrade paper. All wooden shelving will also retain moisture and will not withstand the weight of storage boxes over time.

Even some steel shelving may be less than ideal for records storage. The standard metal shelving frequently carried by business supply houses is 18" wide X 24" deep, 24" wide X 36" deep, or 24" wide X 48" deep and will not efficiently hold cubic-foot records storage boxes. A shelf 36" wide, for example, will hold 2½ boxes, but few organizations have half-size boxes to fit into the extra space. Some vendors sell shelving with channels to hold each records center carton. Each channel consists of a small steel ledge on either side, designed so that a box can rest between and upon two of these ledges. Unfortunately, boxes are frequently damaged by this type of shelving, or they fall and become wedged between the two jutting ledges.

The State Archives recommends choosing steel shelving with an appropriate weight capacity to handle your organization's records. The following recommendations will help you choose the best records storage shelving for your local government or organization.

Shelving Dimensions

Recommended: 42" wide X 16" or 32" deep (for most applications)

The State Archives generally recommends shelving that is **42 inches wide**, which allows for a row of three standard records center cartons (12" wide x 15" long x 10" high). Depth can vary, depending on the dimensions available and storage needs. Shelves 16" or 32" deep are preferable. For the best use of space in a records center, purchase shelving that is **32 inches deep**, which allows for boxes two-deep on each shelf. If efficient use of space is not a concern, 16"-deep shelving will hold a row of boxes one-deep. Shelving of other depths is suitable for records storage, but is not as preferable. Boxes stored on shelves that are 15" or 30" deep will hang slightly over the edge. Shelves 16" or 32" deep are preferable, since the cover of the shelving provides modest protection to the boxes in the event of a fire or a water leak from the ceiling. You may also consider purchasing shelving that is either 18" or 36" deep. However, such shelving is a little deeper than is necessary and does not make optimal use of space. Organizations with large records centers might consider purchasing special steel shelving that is 8 feet (96") wide, which can hold seven boxes across and reduces the number of uprights needed.

Shelving Gauge

Recommended: Based on weight of records

Weight capacity is key to the shelving you choose. Some manufacturers use a lighter-gauge steel that provides a weight capacity equal to or greater than 18-gauge steel. Based on the manufacturer's printed weight capacity, there may be other types of shelving to consider besides solid steel shelving, such as woven or wire-meshed shelving.

Heavy-duty steel shelving of 18-gauge or lower is generally recommended for records storage. The smaller the gauge number, the stronger the shelving; thus 16-gauge or 12-gauge steel shelving is also appropriate. Shelving higher than 18-gauge is weaker and may not be appropriate for records storage. Paper is heavy and, over time, may cause this weaker shelving to buckle under the weight.

The estimated weight of a standard records storage box is approximately 35 pounds. A 42"-wide shelf 16" deep holds one row of boxes (three across) which is approximately 105 pounds. But a 42"-wide shelf which is double-deep (30" or 32") and stacked two-high will hold twelve boxes and approximately 420 pounds. To choose what shelving would work best for your organization, determine the number of boxes you will be

storing per shelf. Based on the approximate weight of 35 pounds per box, check the weight capacity of the steel shelving and choose accordingly.

Weight capacity is the determining factor when choosing what gauge steel shelving to use for your records storage. If lighter-gauge steel shelving provides the necessary weight capacity for your records, you may choose to purchase it.

Shelving Material

Recommended: Steel only

All parts of the shelving should be made of steel. The best shelving choice is powder-coated or baked enamel metal shelving. Painted shelves are not recommended. If possible, consider purchasing light-toned shelving to optimize lighting in your storage area.

Do not consider shelving with wooden decking, which is inappropriate for records storage. Wooden or particle board decking can emit gases over time due to the natural decomposition of the wood. Gases can aid in the degradation of paper stored in boxes on the shelves. And in the case of fire, any wooden parts of the shelving may aid in the destruction of records. Since paper is heavy, it will often cause wooden shelving to buckle over time. Wood also tends to hold moisture, and when wet, such shelving can deteriorate rapidly.

Shelving Height

Varies with needs and height of room

The appropriate height for shelving will depend on your records storage needs and the size of your records storage facility. Standard heights of shelving range from 5 to 10 feet, with an extra 3 or 4 inches added to allow for space to keep the bottom shelf off the floor. Shelving 6 or 7 feet high is the most common, however. With 6-foot shelving, you should not need any ladders to reach the top boxes on any shelves.

Always allow for at least 1 foot between the cartons on the top shelves and lighting fixtures or ductwork. Sprinkler heads should be at least 1½ feet above the cartons to allow the sprinklers to distribute water evenly.

Other Considerations

Shelving arrangement

Number of shelves per unit

Economy

Design differences

You should always arrange shelving in the most cost-effective scheme possible. For example, you can save money by placing boxes two-high on each shelf, thereby reducing the number of individual shelves that need to be purchased. Some organizations may want easier and quicker access to their records, and so may decide to have only one layer of boxes per shelf. Organizations should also realize that a few long rows of shelving may be more economical than numerous short rows. This is because the shelving unit at the end of each row of shelving (or the starter shelving) is a single free-standing unit with four sides instead of three, and is sometimes more expensive. The add-on units, which must be attached to starter units, are cheaper because they contain fewer sides and less material.

Shelving should run parallel to the direction of airflow and perpendicular to ceiling light fixtures, if possible. Leave a few inches of free space between the shelving unit and the wall to allow for circulation. Bottom shelves should be approximately 4 to 6 inches from the floor to allow for airflow and for protection against flooding. For easy retrieval of records, your shelving arrangement should allow for aisles approximately 36 inches wide. This will also satisfy requirements under the Americans with Disabilities Act.

Records or archival materials should never be housed directly beneath overhead water pipes. If your storage area has water pipes, design it so that the pipes parallel the aisles and do not hang above any of your shelving units.

There are also design differences to consider when choosing shelving. Much of the standard 18-gauge steel shelving that is offered uses a design called “broken flanges.” Flanges refer to the outer four edges of the shelf. When bent under the shelf but not touching or connected through welding, they are referred to as broken flanges. Some manufacturers bend the steel shelf along the edges so that a box is created on all four sides. These boxes are then welded which gives a “box-welded flange.” The box-welded flange is stronger in terms of weight capacity than a broken flange but is more costly to manufacture.

Another design difference is in the corners of the shelves. Rather than using open corners where the flanged sides are not connected, some manufacturers lap the corners and then weld them. This increases the strength of the shelves. By using box-welded flanges and lap-welded corners, manufacturers compensate for the added strength by using lighter-gauge steel to offset the cost of the design improvements.

Conclusion

Selecting the right shelving for your organization will require you to investigate the choices currently available. While many factors will contribute to an efficient and accessible records storage facility, the shelving you choose will be integral to your success. A list of current vendors of steel shelving can be found at:

http://www.archives.nysed.gov/a/nysaservices/ns_mgr_cons_shelf.shtml/