

Carpeting your library

By Evelyn Minick, J. Thomas Becker, and Stacia Brokaw

Advice from those with experience in textiles

Carpets have long been the floor covering of choice for libraries, and for good reason. In addition to their obvious aesthetic qualities, carpets provide sound absorption, thermal insulation, and create a safe walking surface for library users. Unfortunately, librarians often face carpet selection and specifying decisions with little warning. Like most people, our knowledge is limited to our last household purchase, or visions of the crazed toddler on the TV ad who flings food from his high chair and is ultimately saved by "DuPont Stainmaster." In our moment of need, relying on our architect's expertise (or, heaven forbid, the salesperson) can leave you with a glorious-looking product, but one that retains that look only weeks beyond the library's dedication.

Before you enter into discussions with your architect or designer, there are a few things you should know about carpet fibers, construction, density, padding, installation, and maintenance. As all carpeting decisions should be based on the intended use of the product, we are focusing here on those high-traffic, public areas of libraries that are most problematic for library managers.

Choosing the right fiber

The fiber content of your carpet will determine how well it will wear and resist dirt and stains. There are two fibers that should be considered for library applications: nylon and olefin. Nearly 80% of commercial carpeting produced today is made of nylon because of its excellent performance, appearance, and competitive cost. Olefin is commonly used for indoor/outdoor

carpeting because it is virtually indestructible and does not absorb moisture. It is available in softer constructions for commercial applications but, because of its dye process, olefins have limited color and design choices. Olefin crushes easily, but if it is limited to very dense, low-pile carpeting, it remains a viable option, particularly if your library has moisture problems.

Our first choice for library installations is the new generation nylons. They are especially stain, static, and soil resistant, easy to maintain, won't mildew, and hold up well to abrasion and crushing. They will cost more than regular nylon carpets, but are well worth the investment.

Cut pile or loop pile?

Most carpets are produced by a process in which hundreds of yarn "tufts" are threaded through rows of needles and pushed through a backing material in a process called "tufting." The yarn tufts are then locked in place with a latex backcoating. The two most common constructions for commercial use are "cut pile" where each loop of yarn is cut so that the strands of yarn stand upright on the carpet's surface (illustration #1) and "loop pile" where the yarns on the face of the carpet form a loop with both ends anchored in the carpet backing (illustration #2).

Cut pile carpets such as velvet, saxony, frieze and plush are far more popular in residential use and can achieve different looks and feels with the amount of twist and heat applied to the yarns. If you have a preference for the smooth, soft appearance of cut pile, make sure it is very short and dense to cut down on crushing and soil collection.

For high-traffic library applications, we recommend loop pile construction. High-density

Evelyn Minick is library director at the Philadelphia College of Textiles and Science (PCTS), e-mail: minick@shrsys.bsic.org; J. Thomas Becker is assistant vice-president for operations at PCTS; and Stacia Brokaw is associate professor of textiles at PCTS

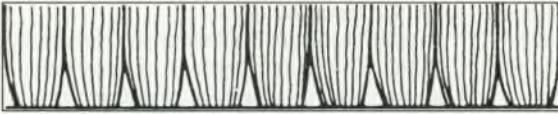


Illustration 1. Cut pile construction.

loop pile offers fewer opportunities for dirt to collect and absorb, is more durable, and shows very little visible crushing under constant foot traffic. You will lose some of the soft luxurious look, but loop pile will be much easier to maintain and it will retain a new look long past your tenure at the library.

Carpet tiles or broadloom?

Carpet tiles offer an enticing feature—the ability to replace only the worn areas of your library's carpet, while leaving the unworn areas in tact. However, it is important to note that you cannot expect the color of the replaced carpet tiles to match after any length of time. If you are interested in that flexibility, use color to define the areas where you anticipate the greatest wear and the change won't be so noticeable. Carpet tiles come in an amazing array of colors and patterns. To ensure that they lay flat and resist buckling, they are often manufactured with a thick, stiff backing which makes for a harder walking surface. Although easier to install, good quality carpet tiles are more expensive than broadloom. The decision to go with broadloom in our library was motivated by our desire for padding and loop pile construction, features that were not available in carpet tiles.

Denser wears better

As we mentioned before, carpets are made by hundreds of needles pushing yarn through a backing and forming loops as the needles push in and out. The spacing between those needles, the spacing between the rows of tufts of yarn, and the thickness of each of those yarn tufts all contribute to the total face yarn or the density of your carpet. As a basic rule, the denser the carpet the better. The denser the carpet the less chance of dirt or soil working its way into the carpet and wearing it from the inside out. The denser the carpet the tougher it is to crush and bend the yarns underfoot, thus wearing away the sides of the yarns. Carpet will wear much better if you restrict the abrasion to the top surface of the yarn.

The best way to judge the density of a carpet is to simply feel the sample. Is it easy to

wiggle your fingers down to the backing? Press down on the carpet and see how easily it flattens. Bend the carpet yarn side out and see how much of the carpet backing is exposed. Because yarn tufts support each other in dense carpeting they are more likely to remain standing up than matting down.



Illustration 2. Loop pile construction.

If you look at the back of your carpet samples, you will see density expressed as tufted yarn weight, gauge, tufted pile height, and stitches per inch. Trust your senses and look at a large number of samples. The quality of each carpet will be obvious to you.

Extend a carpet's life with padding

Most architects and designers will argue that padding is not required in a commercial installation. There are several reasons to challenge this assumption. For starters, padding will extend the life of your carpet by up to 40%. For libraries struggling with finances (and who isn't?), that is a significant figure. Another reason for padding is comfort. Many librarians stand at service desks for hours and padding can reduce leg strain. When you throw enhanced sound absorption and thermal insulation into the mix, padding becomes quite cost effective.

The quality of padding, just like carpeting, is measured by its density, not its thickness. Pads of equal thickness can be of widely varying densities.

The type and method of carpet pad application is critical to the success of your overall installation. The most common methods are: tackless, double stick, and direct bonding. With direct bonding, padding is actually fused to the backing of the carpet during the manufacturing process. In a tackless installation, the padding is fastened to the floor and then the carpet is stretched over the pad with no direct bond between the carpet and pad. In a doublestick installation, the padding is glued to the floor and then the carpet is glued to the pad.

We recommend the direct bonding approach. Direct bonding can actually increase your carpet's strength as the padding becomes

a unified part of the carpet during construction. These products come in various densities and can also be purchased with a scrim for ease of future removal or repair. The trick here is to find an installer who is certified to handle this product. If not, you may end up with sloppy seams and bubbles where the carpet comes unstuck. If you go with a tackless installation, you may have the problem of needing to restretch the carpet periodically, not an easy task with a library's heavy loads. The doublestick method can give you a quality installation if done correctly. However, look out for carpet buckling and carpets separating from the padding.

You can't overvacuum

All of this information is meaningless if you don't take care of your carpet once it is installed in your library. The most critical issues in carpet maintenance, however, are decided before the carpet is selected. The simplest rule is to keep dirt as far away from your carpet as possible. If you have the luxury of designing your facility from scratch, keep the carpeted areas as far from the outside entrance as possible. Use grates or walk-off mats to eliminate as much of the dirt, mud, snow, and salt coming in before it hits your carpet surface.

The color and pattern you choose can also simplify your maintenance. Avoid solid colors, or if you must have a solid, keep to a mid-range color value. A carpet that is not too dark and not too light will hide soil. There are literally hundreds of carpets on the market in wonderful multicolored tweeds, speckles, textures, and patterns that conceal dirt effectively. Limit your rich, dark, solid carpets to areas you can easily replace.

Once your carpet is installed, the very best thing you can do is commit your cleaning personnel to consistent, systematic vacuuming—you cannot overvacuum a carpet. The more dirt you pick up, the less gets ground in. In a busy library, your carpet must be vacuumed at least once a day. Also, all stains or spills should be dealt with immediately. Whether you treat stains with a wet or dry process will depend on the instructions from your carpet's manufacturer.

Cost vs. budget

You may agree that following our recommendations will ensure a high-quality installation, but will cost you upwards of \$40 per square yard, way out of reach of most library budgets. Carpet selection, like all phases of design and construction, is a series of compromises. To add to the problem, carpet decisions generally take place near the end of the building process when cost overruns have already put an uncomfortable edge on your deliberations.

In our case, we were attempting to balance a very assertive creative team with an equally challenging budget. Our total budget for carpeting the 5,200 square yards of our new library was \$22.00 per square yard installed.

Our designers presented a palette of colors and blends to our major donors and administration that, while spectacular, was difficult to replicate in standard commercially produced goods. By disregarding our request for loop

pile construction, the designers put us in the awkward position of choosing to delay the project while they re-designed and re-presented the interiors, or to have custom carpets produced. We chose the latter, but our advice would be to try to avoid this expense. There are literally thousands of great "standard" carpets. Even though we were struggling with budgets, we still felt very

strongly that carpet padding was a long-term value that could not be sacrificed. We decided to lower our yarn weight from our preferred 32 oz. to 28 oz. This allowed us to afford the top-of-the-line Dow Enhancer III padding for all three floors of our library. Our affiliation with the textile industry also allowed us to buy the bulk of our carpets directly from the mills. This saved us about \$2.00 per square yard. After much hard work, haggling, and persistence, our net cost for installed carpet came in at \$22.11 per square yard. If we had used all standard carpets, we just might have made budget.

So when it's time to make your carpet decisions, don't be afraid to ask the hard questions, and make sure you are prepared with clear priorities. You just might end up with a beautiful installation that will remain that way for years to come. ■

... our knowledge is limited to visions of the crazed toddler on the TV ad who flings food from his high chair and is ultimately saved by "DuPont Stainmaster."

ELECTRONIC PRODUCTS

American Mathematical Society



The AMS's MathSci® Products provide comprehensive coverage of research in mathematics, computer science and statistics in a variety of formats.

MathSci Disc

MathSci Disc is the compact disc version of *Mathematical Reviews (MR)* and *Current Mathematical Publications (CMP)*.

- MathSci disc provides instant access to over 53 years of data—*MR* and *CMP* from 1940–present.
- SilverPlatter search software (SPIRS/MacSPIRS) makes MathSci Disc easy to search and integrates well into existing environments (e.g., library jukebox system).
- SPIRS allows boolean searching, easy printing and downloading.
- SilverPlatter has a networking option that allows simultaneous access for network users.
- MathSci Disc is available for both the Macintosh and MS-DOS platforms.



MathSci Online

MathSci Online is an electronic version of *MR*, *CMP*, *Guide to Computing Literature*, *Computing Reviews*, *Technical Reports in Computer Science*, *Current Index to Statistics*, and the *Index to Statistics and Probability*, available from commercially supported online systems including DIALOG, CompuServe, ESA, and NACSIS. Anyone with a computer and modem can get an account to search MathSci Online.

- Over 600 journals are reviewed cover-to-cover; over 1,700 are covered selectively.
- Over 7,500 monographs, conference proceedings, theses, and technical reports are reviewed annually.
- Abstracts, reviews, and bibliographic citations are available.



For more information call 800-321-4AMS (321-4267).

e-mail: eps@math.ams.org

MathSci Tapes • MathSci Disc • MathSci Online • T_EX Software • e-MATH