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a consumer's guide

Carpet & Rug Selection

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BUYING A CARPET is a major home furnishing investment. An informed buyer is better able to make a selection that gives long-term satisfaction. Today's market offers a wide variety of choices, and modern technology continually develops new products. The consumer's decision is further complicated by the many retail outlets handling soft floor coverings. There are dealers who specialize in carpet sales as well as volume outlets that can sell at lower cost. Usually the more experienced specialist is a better source of reliable information, but the well-informed consumer may find a quality product in many different places.

This bulletin will help you think through the carpet selection process so you can plan your purchases carefully. It contains information to help you make preliminary decisions before you shop and to help you evaluate products once you get to the store.

Before you shop

. . . consider these questions:

Where will you use the carpet? In a heavily trafficked area opening directly to the outside, a dining area with good chance of food spillage, or a bedroom where little wear will be expected?

Who will use it? Children? Adults? How many?

How long will it be used? As a temporary covering? Or wall-to-wall expected to last many years?

What kind of care will you give it? Will you vacuum it regularly? Can you clean it in place or send it to a professional cleaner? Can you wash it in a commercial washer? Can you turn it to equalize wear?

What can you afford? How much do you need? What quality can you afford? What will padding and installation cost?

Do you want a wall-to-wall carpet? Or would you prefer a room-size or area rug?

Answering these questions ahead of time will help you know the kind of service and appearance you expect from your carpet.

How much?

Figuring the yardage needed will tell you how much investment your new carpet will require. Usually there are three items of cost to be figured in estimating the approximate total cost. Carpet is priced by the yard, so *carpet cost* can be estimated by measuring the room and finding the number of square yards needed to cover the floor area. (Example: a 12- by 16-foot room = 180 square feet, 180 ÷ 9 = 20 square yards.) Since broadloom carpet comes in 12-foot widths, you must pay for excess yardage that has to be trimmed off to make the carpet fit your room if it does not conform exactly to these standard sizes. When carpeting L-shaped rooms, adjoining hallways, etc., remember that the carpeting must "run" all in the same direction, which may require additional yardage, as will matching patterns. In addition, you must consider the **costs of padding** and, if you are buying wall-to-wall carpeting, **professional installation.**

What colors?

Color choice is an important and personal decision. Because floor space is one of the largest areas of a room and provides a background for room furnishings, choice of color can set the room mood. In addition, some colors show soil less than others. Very light colors (pastels) and white show soil quickly and will lose their original appearance. Dark colors show lint and dust, especially if the carpet is a darker shade than the soil normally tracked in. Though color choice may assist in concealing soil, carpet must still be vacuumed frequently to prevent dirt particles from settling down into the pile where they can create unnecessary wear.

Before you decide on a particular style and color, take several carpet samples home to see how they look under normal and artificial light and with your room furnishings.

Evaluating carpets and rugs

How well the carpet or rug you select retains its original appearance over time of use is an important consideration. Two factors that contribute to maintenance of appearance are 1) resistance to wear and 2) ease of care. The chart on pages 2–3 provides a framework to organize and evaluate information about a carpet so you can estimate its potential durability and care requirements. The value you place on each of these factors—resistance to wear, ease of care—will depend upon your family's lifestyle, the use and care which the carpet will receive and your expectation of the carpet's performance in its intended use.

Serviceability Factor

Resistance To Wear

CRITERIA: Three criteria can help you evaluate carpet or rug resistance to wear:
—**Strength**—the ability to withstand pulling forces.
—**Abrasion resistance**—the ability to withstand rubbing forces.
—**Dimensional stability**—the ability to maintain shape over time.

Each criterion applies to one or some, ***but not all,*** *components of the carpet product—fiber content, yarn type, structure and finish.*

FIBER CONTENT

Fiber content alone is no indication of quality. Carpets of excellent and poor quality are made from all fibers. All fibers have advantages and disadvantages. Also, a fiber's basic characteristics may be enhanced or altered in the carpet production process.

In general, the strength and abrasion resistance of specific fibers are as follows:[1]

High: nylon, olefin, polyester
Medium: acrylic, wool

Most carpet for homes is made of nylon or polyester, with olefin being the most common fiber in kitchen carpeting. You can find carpets of acrylic or wool fibers, but wool only at a premium price.

YARN TYPE

The face pile of a carpet is composed of yarns that are made of two or more single yarns (ply) twisted together. On some carpet products the number of ply in the carpet yarn is indicated on the label, but this is not required. *Multi-ply* yarns with high *twist* give a carpet increased strength and abrasion resistance. To examine a carpet yarn for these qualities, give it the reverse-twist test. As the yarn separates you will be able to count the number of ply; upon release it should recover its original degree of twist. In low-pile carpets, *loop* (uncut) yarns have better resistance to abrasion than cut yarns.

STRUCTURE

Ninety-five percent of the carpet produced in the U.S. is made by a tufting process. Woven carpets are available, but at a higher price. *Pile density* is the significant factor in judging any carpet's durability. Firm, dense carpets have the greatest resistance to wear from abrasion and retain dimensional stability during rigorous cleaning. Yarns densely packed into the carpet face support each other and can't bend or rub against the backing when under pressure. To visually judge a carpet's density, fold back a corner of the sample to see how close the rows are. Even the highest quality carpets reveal some space between the rows, but this should be kept to a minimum.

In carpets of comparable density, increased *pile height* will add to wear resistance, though for high traffic areas a dense, low-level, loop construction is most serviceable. A multi-level pile also hides foot traffic well. *Shag* carpets are less densely constructed to achieve the characteristic "lay" of the yarns. A good wearing shag should have yarns long enough to cover the spaces between tufted rows. Both shag and plush carpets show traffic paths, but this is an appearance rather than a wear factor.

A small percentage of carpet is produced by a *needlepunch* process. The result is a very dense, felt-like product that is usually sold as indoor-outdoor or kitchen carpet. It has high dimensional stability, but low resistance to the abrasion of chairs and scraping of sharp heels. However, its density does make it suitable for high traffic.

Backing—Quality tufted carpets have: a *primary* backing into which the tufts are locked, and a *secondary* backing which adds to dimensional stability. A latex coating is often applied between the two backings to secure the tufts. Most primary backings are of manmade fibers, either woven or nonwoven, because of improved tuft-binding, dimensional stability and dyeability. Some may be woven of jute. A fine-gauge woven backing allows for precision tufting and good dimensional stability. Secondary backings may be either jute or man-made fibers.

[1]*Source: 1974* Textile Handbook. *American Home Economics Assoc.*

Serviceability Factor

Ease of Care

CRITERIA: Criteria for evaluating the care requirements of a carpet or rug include:
—**Resilience**—the ability to withstand wrinkling or crushing.
—**Moisture Absorption**—the ability to attract and hold moisture.
—**Heat Tolerance**—the ability to resist burning.
—**Resistance to Moths and Mildew**—the ability to resist deterioration by micro-organisms.

Each criterion applies to one or some, ***but not all,*** *components of the carpet product—fiber content, yarn type, structure and finish.*

FIBER CONTENT

Resilient fibers helps to improve *crush resistance* in a carpet. Wool and the manmade fibers—acrylic, nylon, and polyester—have high resilience.[2]

The manmade fibers have low moisture absorption—olefin has almost zero absorbency—which gives good *stain resistance* to a carpet or rug. However, nylon, polyester and olefin fibers have an affinity for oily stains, so these must be attended to quickly. (See MSU Extension Bulletin E-819, "Guide to Care for Carpets and Rugs," for specific care and cleaning recommendations.) Wool has medium to high moisture absorption, so good cleanability.

Manmade fibers (except olefin) present a *static* problem in low humidity environments because they retard moisture absorption. Four anti-static nylon fibers developed for carpet production are: *Antron III, Anso-X, Zefstat* and *X-Static.* Fine, stainless steel wires tufted into the face pile help reduce the potential for static in carpets of manmade fibers.

Except for mod-acrylic fibers, which are often blended with other fibers to reduce **flammability,** the manmade fibers have low heat tolerance; the careless use of smoking materials and hot grease spills could cause these fibers to melt and/or char. Wool has high tolerance to heat.

Acrylic, nylon, polyester and olefin have high resistance to moths and mildew and would be suitable for use in areas where moisture may be a problem. Wool has low resistance to biological organisms, so must be moth-proofed.

YARN TYPE

High *twist* in carpet yarns increases crush resistance. Yarn twist is sometimes heat-set in, and label information will often indicate if this process has been done. In polyester carpeting, heat-set twist is particularly important to give sustained resilience to the soft, luxurious yarns. *Loop* (uncut) yarns give better crush resistance than cut yarns, especially in carpets of low-pile construction. Low twist, cut yarns are more absorbant and more vulnerable to picking up spills than high twist, loop yarns.

STRUCTURE

A firm, **dense pile** will have the best loft, or crush resistance. Low-level, loop construction is very resilient and recovers well from the pressure of heavy traffic. The resilience of plush carpets depends upon dense construction and improves with increase in **pile height.** Plush and random-sheared (cut and uncut, level yarns) carpets show soiling and lint more readily than other styles.

Fibers that normally have low heat tolerance can be constructed into carpets that meet government regulations for **flammability.** Tight yarn twist, short pile, dense and compact construction all improve a carpet's resistance to burning.

The dense, felted construction of **needlepunched** carpets give them good crush resistance and high tolerance for spills and stains since they do not readily absorb moisture.

Backing—In areas of the home where moisture may be a problem, use carpets with manmade primary and secondary backing. Jute will mildew and rot when exposed to moisture for any length of time. Although carpet backings are not subject to government regulations for flammability, some flame retardant backings are available for home use. Jute has high heat tolerance.

FINISH

Anti-soil and **anti-stain** finishes are available for carpets and rugs. Best results are obtained from finishes applied at the factory or by the professional. These finishes are not permanent, nor do they imply neglect of routine care procedures. They will inhibit rather than prevent soiling and staining.

Anti-static agents are available for home application. Home sprays are temporary and in some cases may increase soiling rate over time.

Most wool carpeting is treated with a **moth-proofing** finish and should be so labeled.

[2]*Source: 1974* Textile Handbook. *American Home Economics Assoc.*

FEDERAL REGULATIONS

Labeling

The Textile Fiber Products Identification Act requires that certain information be disclosed by label on all carpet samples and rugs. No labels are required on cut orders of carpet for installation, but you can ask for this information on the invoice. Each label is required to identify:

—the generic name of fibers in the face pile and the percentage of each fiber by weight.
—manufacturer's or distributor's name, or his Federal Trade Commission registration number (RN).
—the country of origin of an imported carpet.

The Flammable Fabrics Act requires that all large rugs, carpets and carpet tiles manufactured or imported after Apr. 16, 1971, and all small rugs manufactured or imported after Dec. 20, 1971, comply with Department of Commerce standards for surface flammability, FF1-70 and FF2-70. Small rugs that *do not* meet the imposed standard may be sold, but **must be labeled** *"Flammable: Should Not Be Used Near Sources of Ignition or Flammable Furnishings."* Since compliance with the standard is mandatory for all room-size rugs and carpets, labeling is not required but may be included by some manufacturers.

Both standards were established to protect consumers against an unreasonable risk of carpet fire from small ignition sources such as fireplace embers, lighted cigarettes, matches, etc. Neither standard insures complete fire resistance. Carpet backing and underlays are not covered by the regulations, though some materials used are flame resistant.

THERMAL PROPERTIES

Several studies verify the advantages of carpet and rugs in energy conservation.[3] Tests show that the thermal resistance of carpet and padding combine to provide effective insulation against heat loss in winter or heat gain in summer. Total thickness and pile density seem to have a direct relation to insulation value. Air spaces or pockets between fibers trap warm air and prevent it from escaping. Fiber content and yarn type do not seem to be significant variables, according to the tests.

In extreme climate conditions, significant savings on heating bills are possible where carpeted floors are otherwise uninsulated—either wood floor over a crawl space or concrete slab. According to test data, savings on fuel costs for homes in Michigan could range from 9 to 13 percent for one-story houses. Cost savings would vary according to geographic location, size and shape of house, local fuel rates, seasonal degree days and type of carpet and underlayment.

CARPET PADDING

A good pad lengthens the wear life of the carpet or rug. It helps absorb shocks from everyday traffic and legs of furniture, thereby reducing loss of pile weight and thickness. Carpet padding also provides extra insulation from heat and cold and a measure of sound absorbency. It adds comfort underfoot and makes the carpet seem more luxurious.

Carpet padding is made from several materials. Some of the most common for residential use include the following:

1. Foam rubber gives uniform support and long wear. These pads are not affected by moisture, and so are suitable in basements. For home use, a three-eighths-inch pad is recommended.

2. Urethane foam pads are lighter in weight and vary in quality. The more serviceable products are thicker and have greater degree of firmness. Urethane is unaffected by moisture and is recommended for use in basements. A three-eighths or one-half-inch pad is minimum for residential use.

3. Sponge rubber pads are available in a flat or waffled style. For normal family traffic, a one-fourth-inch thickness and 48-ounce weight is satisfactory. A heavier weight will give quieter service on stairs and upstairs hallways. Sponge rubber is not affected by moths and mildew and is nonallergenic. However, it is not recommended for installation below-grade because it will deteriorate with repeated exposure to moisture.

4. Felted pads are made from animal hair or hair blended with jute. High costs have all but removed this product from the home market, but it is available for consumers who prefer it. Felt pads are sturdy and absorb impact well but tend to matt. A rubberized coating gives added stability as well as protection from moths and mildw. For moderate home traffic, select a 40-ounce weight pad at least one-fourth-inch thick. For heavier traffic such as on stairs, a three-eighths-inch, 50-ounce weight pad will give better service.

Attached pads may be either sponge rubber or foam (latex) rubber. Sponge rubber is heavier and is considered to be the superior product; it also is more expensive. Latex foam comes in varying qualities, with lower grades being pliable and lacking firmness and resilience. Attached pads reduce the initial cost of your carpet investment but may be more expensive to have professionally installed. A minimum thickness of one-eighth-inch is recommended for home use.

INSTALLATION

Wall-to-wall installations are best done by a professional who has the skills and tools to achieve an attractive and long-lasting fit. Stairs, hallways and other areas that receive heavy traffic need the attention of an expert. Wrinkling and buckling, or "grinning" seams are signs of improper installation. Carpet tiles or self-cushioned carpet in smaller rooms may be handled by the experienced do-it-yourselfer.

Installation methods include tack, tackless strip, tape and glue-down. Glue down is not recommended for home installation because removal for replacement is difficult and costly.

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[3]Haynes, B. C., *et al.* "Thermal Properties of Carpets and Draperies," Research Bulletin 68. Univ. of Georgia, College of Agr. Exp. Sta. November, 1969; and "Advantages of Carpet and Rugs in Energy Conservation." The Carpet and Rug Institute. Dalton, Georgia, June 1977.

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