

## Smart Shopping for Home Furnishings



# Selecting a Carpet and Pad

*Dr. Leona Hawks*

Home Furnishings & Housing Specialist

1987

HI 05

Shopping for carpet? Carpet as a flooring material is comfortable to walk on, can be cleaned, and offers a luxurious appearance. When shopping for carpet, do not think that just because two carpets look the same in the store they will perform the same once installed. Some carpets look new for a long time, others look old within a short time. The difference is in how well they resist soiling and matting. Most carpets do not wear out. They get soiled, change surface texture, and mat, which makes them look old. To get a high-quality carpet that looks new for a long time, you should be able to answer these questions:

- WHAT'S ON THE MARKET?
- WHAT FIBER TYPES ARE AVAILABLE?
- WHAT STYLES ARE AVAILABLE?
- WHAT TREATMENTS AND FINISHES ARE USED?
- HOW IS CARPET CONSTRUCTED?
- HOW MUCH WILL I NEED?
- WHAT'S ON THE LABEL?
- WHAT'S ON THE WARRANTY?

### WHAT'S ON THE MARKET?

There are many different carpets on the market with beautiful colors, surface textures, and varying qualities. One of the most important aspects of carpet quality is the density of the carpet. Density refers to the number of yarn tufts per square inch of carpet. The denser the carpet, the longer the carpet will look new.

A good way to check carpet density is to fold the back of the carpet onto itself, which allows you to see how tightly packed the yarns are at the fold. If you can see a lot of the backing, the carpet may not be a good buy. You can compare two pieces of carpet by folding each carpet piece onto itself and comparing how closely the yarns are packed together (see Figure 5.1, Density).



Figure 5.1. Density

Sometimes carpet density is confused with pile height and face weight. Just because a carpet has a long pile height or high number for face weight does not mean the carpet is dense or wears well. A long pile height gives carpet a luxurious appearance. However, the longer the pile height, the greater the tendency of the carpet to mat, especially in high traffic areas. If you want a deep pile carpet, select an extra dense carpet. Face weight is a measure of the total amount of yarn on the front of the carpet. Increasing the pile height and the density increases the face weight. The face weight alone, however, does not determine quality because weight can be increased with just pile height. Two carpets could be the same face weight and yet be quite different in quality and performance.

## ***WHAT FIBER TYPES ARE AVAILABLE?***

Carpets are often classified by the type of fiber used to make surface yarns. On the carpet sample, you will find the generic fiber name used for surface yarns. Advantages and disadvantages of the generic fibers used to make carpeting are listed in the following paragraphs.

### **Advantages of Acrylic:**

- wool-like appearance
- low moisture absorption
- cleans easily
- good stain resistance
- resilient and bulky
- resistant to moths and mildew
- resistant to sunlight damage

### **Disadvantages of Acrylic:**

- not as strong as other synthetics
- produced in short fibers and crimped
- poor resistance to matting
- stained by oil and grease

### **Advantages of Nylon:**

- easy to clean
- extremely strong
- excellent resistance to matting
- available in a wide price range
- good abrasion resistance
- absorbs little moisture
- resists moths, mildew, and fungi
- good stain resistance
- third and fourth generation fibers are anti-static
- fibers modified to hide soiling

### **Disadvantages of Nylon:**

- stained by oil and grease
- degrades and fades in sunlight

**Advantages of Olefin (polypropylene):**

- easy to clean
- colorfast
- strong fiber
- soil and water resistant
- good stain resistance
- no static problem
- resistant to moths and mildew
- makes good short pile indoor/outdoor carpet

**Disadvantages of Olefin (polypropylene):**

- depending on construction, tends to mat
- grabs onto oil and grease
- dry-cleaning solvents degrade fibers

**Advantages of Polyester:**

- soft luxurious feel
- excellent resistance to abrasion
- excellent resistance to mildew
- good stain resistance
- less expensive than nylon

**Disadvantages of Polyester:**

- prolonged exposure to sunlight weakens fiber
- grabs onto oil and grease

**Advantages of Wool:**

- crush resistant
- limited pilling problems
- durable

**Disadvantages of Wool:**

- soils easily
- imported because domestic fibers are finer and weaker
- expensive

**WHAT STYLES ARE AVAILABLE?**

The style of a carpet is determined by surface texture. Surface texture has a great deal to do with wearability and the degree of maintenance the carpet will need. The most common carpet surface textures can be divided into three groups: loop piles, cut piles, and combinations. Within each group there are two or three varieties (see Figure 5.2, Carpet Surface Textures).

Loop pile consists of yarns that are looped and uncut. During manufacture, most carpeting starts out as loop pile. Major types of loop pile are level-loop pile and multi-level-loop pile. Both wear well in high traffic areas. The level-loop pile is the same height and uncut, making the carpet surface smooth and level. Levels vary from low and tight construction to a more



Level Loop Pile



Multi-Level Loop Pile



Frieze



Saxony



Plush



Sculptured

**Figure 5.2. Carpet Surface Textures**

luxurious high-level loop pile. The multi-level loop pile consists of different height loops, two or three heights being common. This height difference creates a sculptured pattern, which appears to be carved into the carpet surface. The sculpture surfaced texture is often used in a semi-formal atmosphere.

A cut pile carpet consists of yarns that are cut at the ends. The differences in the cut pile varieties are largely due to the amount of twist in the yarns. The cut pile falls into four types: velvet or plush, frieze, Saxony, and shag. The plush surface texture consists of yarns cut the same height, which gives a luxurious formal appearance. The plush comes in long pile and short pile. Long pile plush shows footprints and mats in heavy traffic areas. Short pile plush resists matting better than the long pile plush. Both however, show some shading. Shading is where the carpet pile changes direction and looks a different color. The frieze is made from tightly twisted yarns that give a nubby appearance. The frieze yarns are more twisted than the plush and do not always point upward.

Frieze-constructed carpets are very rugged carpets and wear well in high traffic areas. The Saxony surface texture consists of dense cut pile made from heavy yarns that have been specially treated to make each tuft appear separate, whereas the plush yarns blend in together. The shag carpet surface texture is made of long twisted yarns cut at the same length. The longer the shag, the greater the tendency to mat. Shag carpet is more appropriate for an informal atmosphere and light traffic areas.

There are also many different surface textures, which are combinations of cut pile and loop pile. For example, tip sheared carpet is made by cutting the high loops to the level of the uncut lower loops. With this type, dense construction and heat set yarns are needed to resist matting in heavy traffic areas.

## **WHAT TREATMENTS AND FINISHES ARE USED?**

How well the carpet performs over a period of time depends a great deal on the treatments and finishes applied to the carpet and the way the fiber has been modified to reduce soiling, staining, and a buildup of static electricity. Some of the new fibers called fourth generation fibers have been modified to offer extra soil resistance, anti-static properties, and stain resistance.

Many different treatments and finishes are used to make carpets perform better. The anti-static, anti-soil, anti-stain, and anti-microbial are the most common. Anti-static features are applied during manufacture or after manufacture as a coating on the carpet surface. Anti-static sprays can be applied at home, but these are not as effective as those applied during manufacture.

The anti-soil and anti-stain features of a carpet can be achieved by modifying the carpet fiber so it does not show or cling to dirt and stains. Treatments are applied in two ways: during manufacture and after the carpet has been made. During manufacture anti-soil and anti-stain features may be incorporated into the production of the carpet yarns. After the carpet is made, anti-soil and anti-stain finishes are applied to the carpet surface. Not all of these finishes last forever. Some wear off and some breakdown when the carpet is cleaned.

The new anti-microbial treatments prevent growth of bacterial organisms that cause odor. This treatment is applied during the manufacture of the carpet fibers.

## **HOW IS CARPET CONSTRUCTED?**

The three most common types of carpet construction techniques used are tufted, needle-punched, and woven. Carpet construction also includes the way the yarn is put together and what is applied to the back of the carpet.

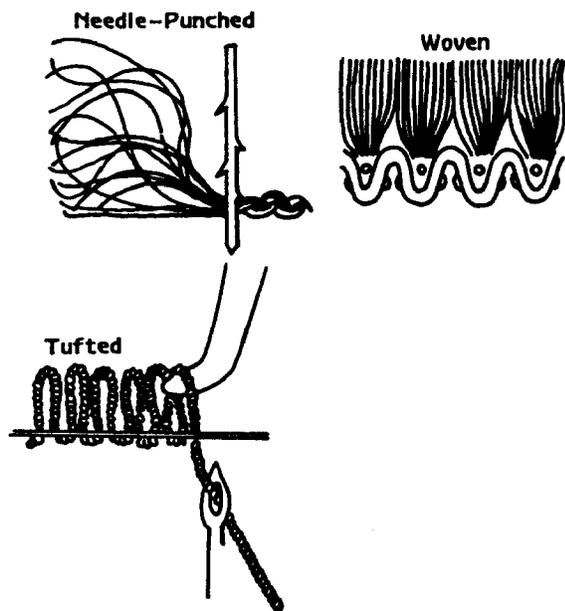


Figure 5.3. Carpet Construction

Ninety percent of the carpet constructed today is tufted. Tufted means that hundreds of yarn-threaded needles go through the back of the primary backing fabric to form loops or tufts on the front side. The loops are either cut or left in loops (see Figure 5.3, Carpet Construction). Then the secondary backing is glued to the primary backing to hold the yarns in place and make the carpet stable so it will not stretch out of shape.

The second most common type of carpet construction is called needle punched. Needle punched construction consists of layers of carpet fibers layed onto a fiber mesh, then thousands of needles are punched through the fiber layers to produce a thick, felt-like carpet. The back is coated with a latex material. This type of carpet is very durable in high traffic areas such as kitchens or hallways.

Another type of carpet construction found on the market is woven. Woven carpets are made by weaving a surface yarn and backing material into a carpet. It is easy to identify because the carpet rolls only in the direction that it is woven. Woven carpets are uncommon today because of the higher cost due to slower construction.

Carpet construction also includes the yarn and how it is constructed. Yarn twist is important in determining quality carpet. Yarn twist affects a carpet's appearance, durability, and resistance to matting. If the yarn is tightly twisted and heat set, the carpet resists matting and is more durable than the loosely twisted yarn (see Figure 5.4, Yarn Twist). Generally, tightly twisted yarns are denser than loosely twisted yarns because when the yarn is tightly twisted, the diameter gets smaller, which necessitates using more yarns per square inch. The yarn twist must stay twisted to be effective. If the yarn twist unravels, the carpet loses some of its ability to resist matting. Heat setting makes the yarn less likely to unravel.

Another important part of carpet construction is the back of the carpet. Carpet backing consists of two layers, a primary and secondary backing. The primary backing is found just under the carpet yarns. Some manufacturers color the primary backing the same as the surface yarns so that the carpet looks denser. The yarns should be firmly attached to the primary backing. The secondary backing is generally made out of polypropylene, jute, sponge rubber, urethane, or foam, and glued to the primary backing. One disadvantage of jute is that it mildews if damp for a period of time, therefore, carpet with a jute backing should never be put on a concrete floor. Polypropylene (olefin fiber) provides an excellent secondary backing because it is unaffected by moisture, resists mildew growth, and is strong and durable. The secondary backing can also be made out of sponge rubber or urethane. On some carpets, like kitchen carpets, the padding is attached to the back of the carpet. Some of these padding fibers are the same materials used to make the separate carpet pads.

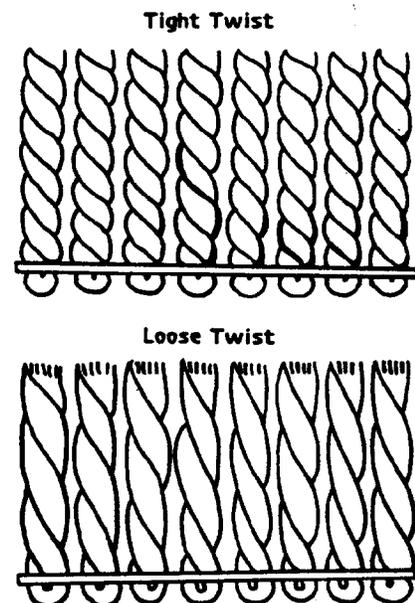


Figure 5.4. Yarn Twist

## **HOW MUCH WILL I NEED?**

You can estimate how much carpet you need by multiplying the length by the width of the room in feet to get the square feet. Divide that figure by 9 to get the square yards needed to carpet the floor, since carpet is sold by the square yard. You will need extra carpet for matching patterns and seam placement. If a room is not exactly 9 feet, 12 feet, or 15 feet, which are the usual widths carpeting is sold in, you lose some carpet when the sections are trimmed off.

To figure the actual cost of carpet, you will need to add two more costs: carpet pad and installation. Some carpets come with the pad attached to the back, which reduces the total cost of carpeting. A great deal of carpet sold includes a less expensive pad and installation.

## **WHAT'S ON THE LABEL?**

Being able to read and understand the carpet sample label helps you know what you are getting for your money. The Textile Fiber Products Identification Act of 1960 requires that the carpet label must list: (1) Manufacturer's register number; (2) Pattern and color names of the carpet; and (3) Generic fiber name of all surface fibers, in percentages listed according to weight predominance. When the fiber quantity is less than 5%, the label lists "other fibers." It is important to remember that the Textile Fiber Products Identification Act requires the labeling of carpet pile, not the backing or padding. You may, however, find additional labeling information on the back of the store sample concerning backing, padding, and other carpet features. The dealer is permitted to replace the original label with the store's label if the same information is on the store's label.

Labels may also contain additional information such as: special treatments; anti-soil, anti-static, and anti-stain finishes; type of traffic for which the carpet is intended whether heavy, moderate, or light; and whether the yarn is heat set.

Some of the better quality fiber manufacturers have quality control programs the carpet manufacturer must follow in order to use their fiber. If you are aware of this, the fiber producer's trademark indicates that the carpet manufacturer has met its quality standards. These standards generally include pile density, yarn quality, and in some cases backing quality and construction method. The label may also indicate that the carpet meets certain standards established by agencies such as the American National Standards Institute and the Carpet and Rug Institute, or government housing agencies such as Housing and Urban Development, Federal Housing Administration, and Farmer's Home Administration.

The Flammable Fabrics Act requires that all wall-to-wall carpets meet government flammability standards in order to be sold. It is not required that carpets be labeled since they must meet this standard or they cannot be sold. Scatter and area rugs must also be tested for flammability. If they fail the test, they can still be sold if they are labeled "flammable."

## **WHAT'S ON THE WARRANTY?**

A good warranty available on a carpet is a limited warranty for five years. On some carpet warranties, if the wear of the carpet exceeds 10% in five years, the carpet will be replaced. Other warranties indicate that if the carpet shows 10% wear in any one area, the carpet will be replaced. The manufacturer determines this from a sample of your carpet, which is analyzed for wear. Some of the less expensive carpets do not have any warranty.

## ✓QUALITY CHECKLIST

After each question, answer with a yes\* or no.

1. Did you check the density of the carpet by folding the carpet back on itself?
2. Did you select the surface design according to the amount of traffic the carpet will receive or the use of the room?
3. Did you select a fiber that fits your family needs for wearability and clean ability?
4. Did you check the twist of the yarns by unraveling the yarns in the fingers and letting go to see if they go back into place?
5. Does the carpet have an anti-static feature?
6. Does the carpet have an anti-soil and anti-stain feature?
7. Does the carpet have an anti-microbial feature?
8. Is the secondary backing made of a synthetic material?
9. If nylon, is the fiber a fourth generation fiber?
10. Did you figure how much carpeting you will need?
11. Did you read the carpet sample label?
12. Did you read the warranty?
13. Did you get a copy of the warranty?

\* If you answered all these questions with a yes, you can be assured of getting a high-quality carpet.

## SHOPPING FOR CARPET PAD?

Most consumers usually take the carpet pad that is included in the price of the carpet. Sometimes this is not a good idea, since you might be getting a poor quality carpet pad.

High-quality carpet pad adds to the life of your carpet by reducing wear and tear. Carpet will last longer if it has a pad. The reason that carpet mats faster without a pad is that greater pressure is put onto the carpet yarns and backing when people walk on the carpet. To get a high-quality carpet pad, you should be able to answer these questions.

- WHAT'S ON THE MARKET?
- WHAT THICKNESS OF CARPET PAD DO I NEED?
- WHAT TREATMENTS AND FINISHES ARE USED?
- WHAT'S ON THE WARRANTY?

## WHAT'S ON THE MARKET?

There are several varieties of carpet pad on the market. Some are more appropriate in certain circumstances than in others. The most common varieties include felt, rubber, and urethane pads (see Figure 5.5, Carpet Pads). All of these pads are sold in a variety of densities, thicknesses, and weights.

**Felt.** This pad is made by needle-punching various materials together. Felt pads are made in a variety of ways. Some are made by using 100 percent hair, 100 percent various fibers, or a combination of hair and other fibers. When the hair is combined with jute, the pad

is less resilient, absorbs more moisture, and has a shorter life than the 100 percent hair. Some of the characteristics of the felt pad include:

- wears well
- resilient when 100 percent hair sheds
- may cause problems to people with allergies
- collects dust
- mildews in damp areas such as on concrete
- stretches out of shape

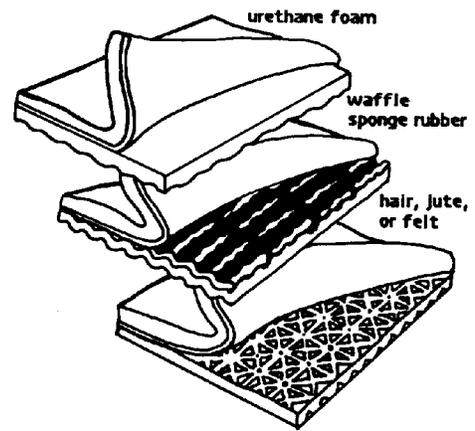


Figure 5.5. Carpet Pads

**Felt** (rubberized or latexed). The rubberized felt pad is like the regular felt pad except it has a latex or rubber coating on one or both sides of the felt. The coating covers the pad surface so it is less likely to stretch out of shape, slide, absorb moisture, or cause allergic reactions.

**Foam Rubber.** Foam rubber is not exactly the same as real rubber. Foam rubber is made from a latex rubber base, which can be made from different combinations of natural or synthetic latex. It is generally manufactured in flat continuous sheets with a covering on one side for easy installation.

This type of pad is often glued to the back of kitchen carpet rather than being a separate pad. When glued to the back of a carpet, the pad is generally thinner and less dense than a separate pad. Characteristics of the foam rubber include:

- insect proof
- mildew and moth proof
- non-allergenic

**Sponge Rubber** (flat and waffle sponge). The flat or waffle sponge rubber pad consists of a combination of natural and/or synthetic rubber and other chemicals. The flat sponge rubber type is made into a continuous sheet. The waffled sponge rubber is first made into a continuous flat sheet, then formed into the waffle shape. Both the flat and waffle sponge have a material glued to the top side for ease of installation. The characteristics of the rubber pad include:

- sensitive to heat
- good resilience
- waffle pad holds moisture
- damaged by dry cleaning solvents
- loss of resilience with age
- moth, beetle, mildew, and mold proof
- non-allergenic

**Urethane (prime and densified prime).** Prime urethane is manufactured by a reaction process of polymeric materials. Densified prime urethane is manufactured by changing the cell structure of the prime urethane. Both the prime and densified urethane have a material applied to one or both sides for easy installation. Prime and densified prime carpet pad has the following characteristics:

- non-flammable
- not as resilient as rubber
- not affected by heat
- not affected by dampness or insects

used on concrete slabs and in basements  
non-allergenic

**Urethane (bonded).** Bonded urethane is nothing more than little pieces of prime urethane bonded together by pressure and a gluing agent.

Characteristics include:

resistant to heat, dampness, and insects  
not as resilient as rubber or plain urethane  
non-flammable  
used on concrete slab and in basements

## ***WHAT THICKNESS OF CARPET PAD DO I NEED?***

The carpet pad thickness is important. If the pad is too thin, the carpet may look old faster. If the pad is too thick, the carpet is more difficult to stretch when it is being laid and ripples occur over time. The way to select a pad is put it under the carpet you plan to purchase and walk on the two layers to see if it feels too thin or too thick.

Another point to consider is to select the pad thickness that fits into the type of room where it will be used. The thickest carpet pads are used in formal rooms with less traffic. Rooms with the thinner carpet pads are informal rooms with high traffic.

Never lay a new carpet pad over an old carpet pad. This makes the layers too thick, which causes ripples.

## ***WHAT'S ON THE LABEL?***

On the carpet pad sample you should find the name of the manufacturer and the pad name. You may also find the generic name for the fiber used to make the pad. If the generic fiber is not on the sample label, ask the sales clerk. The sales clerk may not know the generic fiber and may have to look it up in the manufacturer's catalog. Knowing the generic fiber name helps you determine if the pad is appropriate for your floor.

## ***WHAT'S ON THE WARRANTY?***

You can purchase a carpet pad with a warranty or without a warranty. The better warranties are that the pad will last the life of the carpet placed over it. Some warranties are for the life of two carpets. The carpet pad has to be properly installed for the warranty to be effective.

Most warranties are limited, which means that the warranty coverage is reduced according to the number of years since purchase. Make sure you remember to obtain a written copy of the warranty at the time of purchase. Sometimes the sales clerk forgets to give you a copy, so you may have to ask.

## ***✓ QUALITY CHECKLIST***

After each question, answer with a yes\* or no.

1. Did you select the appropriate carpet pad for your floor conditions?
2. Did you check for the correct pad thickness by walking on the pad and carpet?
3. Did you read all the labeling on the pad sample?

4. Did you find out what fiber the pad is made of?
5. Did you read the warranty?
6. Did you get a copy of the warranty?

\* If you answered all these questions with a yes, you can be assured of getting a high-quality carpet pad.

**Utah State University is an Equal Opportunity/Affirmative Action Institution**

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert L. Gilliland, Vice President and Director, Cooperative Extension Service, Utah State University. (EP/05-95/DF)