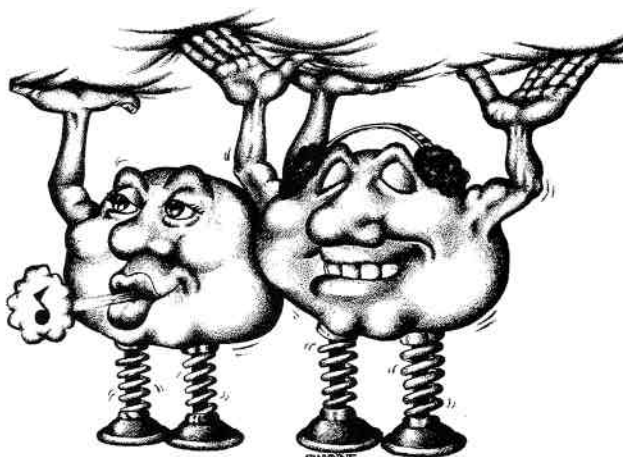


The Supporting Facts About Carpet Cushion



Published by the
carpet cushion council

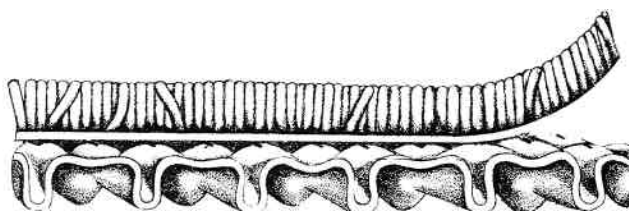
Floorward

This booklet is presented by the Carpet Cushion Council in the interest of providing authoritative information on the characteristics of carpet cushion.

With so many choices in floor covering, it's important you know how carpet cushion can help make your investment in carpet last longer and look better.

Types of Installation

There are three types of carpet installations:



Carpet installed over separate cushion. This can be done by stretching the carpet in over tack strip, or by glueing the cushion to the floor and the carpet to the cushion.



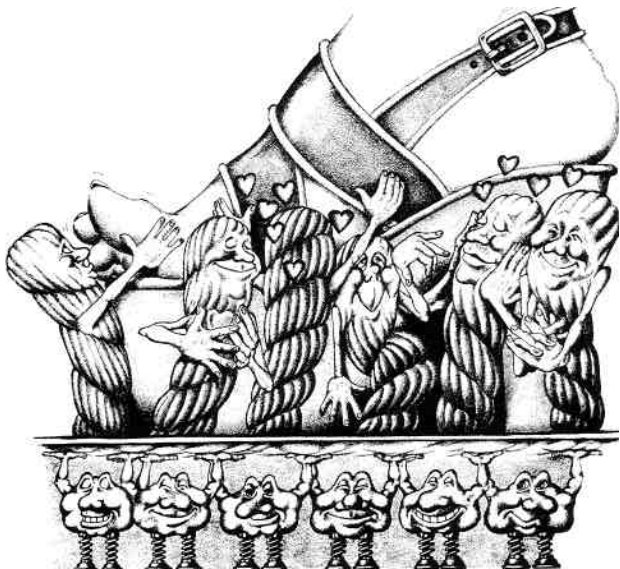
2. Carpet with attached cushion.



3. Direct glue down: carpet cemented directly to the floor without any cushion.

In our judgement, a carpet over separate cushion is the superior installation method, and here's why.

Carpet cushion makes a carpet seem richer and more luxurious.



The most universally accepted benefits of carpet cushion are that it makes a carpet feel better and look better longer.

While luxury is a subjective quality and cannot be measured, cushion does impart resiliency and resistance to pressure which contribute to a carpet's feeling of luxury.

In research conducted by an Independent Textile Testing Service, a test was used whereby different carpet/cushion systems were subjected to rolling a chair with a 150 lb. weight over them 20,000 times. The results indicated that carpets with no cushion had an average 19.3% loss in pile height (thickness) as opposed to a 5-10% loss in thickness for carpets with a separate cushion. The favorable effect of cushion in reducing the appearance of wear was indicated by decreased loss in thickness. So since carpets with a separate cushion remain thicker, they could also appear more luxurious for a longer period of time. And with separate cushion, it's possible to select the degree of luxury or firmness of tread you desire.

Carpet cushion can significantly improve a carpet's acoustical properties.



A carpeted environment is quiet because the pile surface absorbs surface noise at the source. But a carpet installed with separate cushion can make the room even more quiet.

Tests conducted in the Kodaras Acoustical Laboratories reverberation chambers substantiate this. For example, in floor sound absorption tests, a carpet laid directly on concrete floor, with no cushion, measured a Noise Reduction Coefficient of 0.25. In a like test, the same carpet with a cushion on a concrete floor measured a Noise Reduction Coefficient of 0.65, a considerably better performance.

Separate cushion can also reduce impact noise transmission. On a concrete floor with no cushion, a carpet registered an impact noise rating of + 14. The same carpet with separate cushion had an impact noise rating of + 25, again significant improvement.

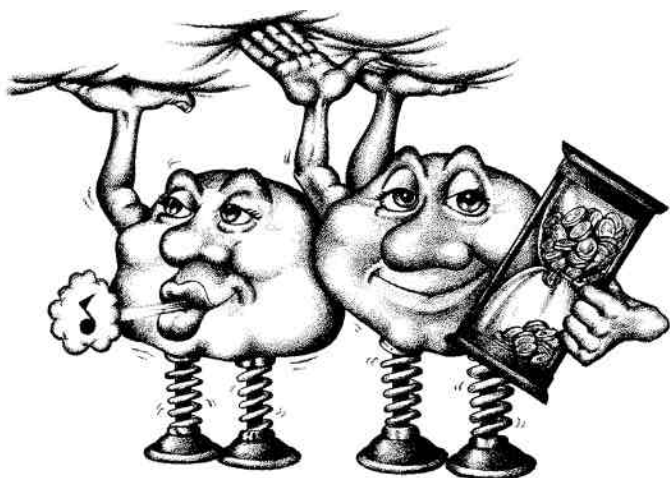
Carpet cushion can improve the thermal insulation properties of the floor covering.



Another of the undisputed qualities of carpet cushion is that it improves the overall thermal insulation properties of a floor covering.

In fact, typical carpet cushions have been measured to have "R-values" from .75 to 2.0. R-values are commonly used to measure a material's resistance to heat flow.

A carpet installed over separate cushion can be more economical.



Separate cushion can prove to be the most economical installation over a period of time.

In wear resistance tests done by Independent Textile Testing Service, a variety of cushion types added to the wear resistance of carpet.

And in a test to determine loss of pile height, which gives the appearance of wear, carpets without cushion showed a 19.3% loss in thickness. Carpets with cushion may suffer only about 5-10% the pile height loss. So an installation with cushion can be more economical since most carpets without any form of cushion may need to be replaced sooner. The fibers of a carpet installed without cushion can become compacted more easily, and the "new" look of the carpet may disappear more quickly.

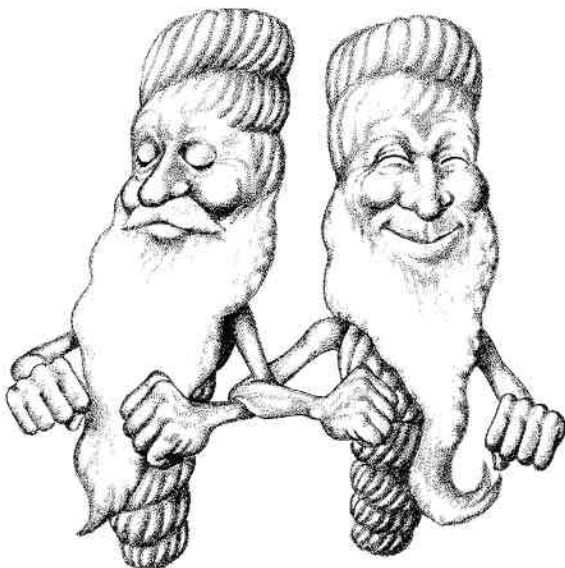
Carpet cushion can reduce the impact exerted on floor covering by one-half.



Another factor related to luxury is the underfoot cushioning properties imparted by carpet cushion.

In tests conducted at the University of Chicago, the effects of people actually walking over carpet and cushion were measured. The tests revealed that carpet by itself and cushion by itself have only a limited impact absorption value. However, when the carpet and cushion are combined into a proper system, the ability of the floor covering to absorb walking impact rises dramatically. And this can improve your comfort by reducing walking fatigue.

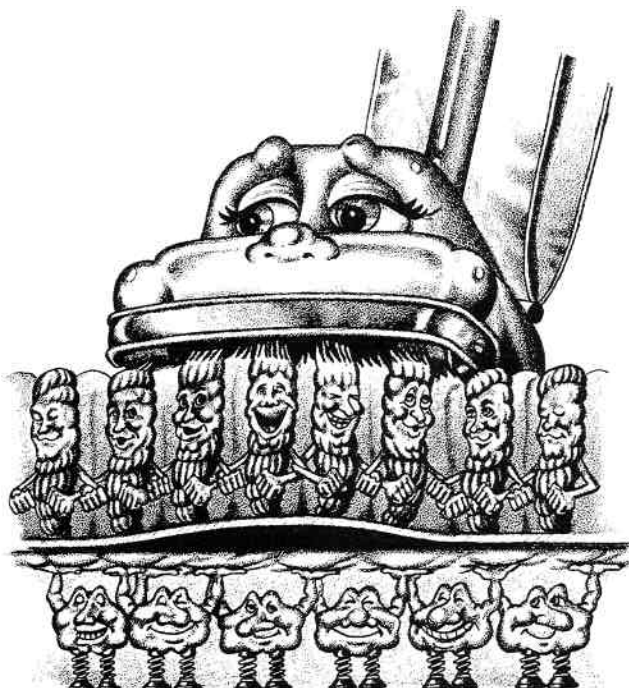
Carpet cushion can add useful life to a carpet.



A common misconception made about cushion is that you can save money by increasing the pile weight of a carpet and eliminating the cushion. Actually, a cushion may result in more useful life in some carpet applications than slightly heavier unprotected carpet can offer.

Carpet is seldom replaced because it "wears" out. It is usually changed because it "uglies" out or loses its fresh, new appearance. By reducing pile height loss and pile crushing, cushion can help keep a carpet "new" looking and therefore stretch its usable life span.

Carpet cushion makes a carpet easier to maintain.



Maintenance costs are often lower during a cushioned carpet's life.

Vacuum cleaning is more efficient with separate cushion since most machines "lift" the carpet to provide air circulation, thus insuring maximum cleaning power. This can help reduce the grinding action of embedded dirt that can cut and fray fiber.

Carpets with separate cushion can be less costly to install.



At first glance, carpet installations without separate cushion seem less costly. But upon further examination, it can be argued that they represent a false economy.

First, direct glue down or attached cushion installations may be less expensive initially. But the difference could be made up in removing worn carpet in a glue-down installation when labor costs for removal and clean up of the floor will most likely outweigh the original savings.

A carpet with separate cushion will mask surface irregularities. A carpet alone cannot mask cracks and trowel marks as effectively as a carpet with cushion. This often means that less floor preparation is required before the carpet is installed.

In fact, a study of carpet workrooms (professional installers) indicated that when all installation factors are taken into account—floor preparation, carpet installation, carpet removal, and cleaning and repair of the floor after removal—the costs of a separate cushion installation are significantly reduced over that of a direct glue down installation.

Cushion Glossary

Most types of carpet cushion fall into one of these categories:

1. Fiber
2. Sponge Rubber
3. Prime Urethane Foam
4. Bonded Urethane Foam
5. Mechanically Frothed Urethane Foam

Today, each category of cushion is made in a variety of grades for use in different residential traffic areas. Determine what areas of your home need more supportive cushion and insist on cushion made to perform properly in the area you are carpeting. Each type of cushion is available for use in light, moderate and heavy traffic areas.

Fiber. There are three basic types of fiber carpet cushion: natural fiber (such as animal hair and jute), synthetic carpet fiber (like nylon, polypropylene, and polyester), and resonated recycled textile fiber (synthetic fibers recycled from textile manufacturing processes). The grade of fiber cushion is determined by its weight in ounces per square yard. Fiber cushions tend to have a firm "walk" or "feel."

Sponge Rubber. There are two specific types of sponge rubber carpet cushion: flat sponge (smooth or flat surface) and rippled sponge (rippled or waffled surface). Flat sponge offers a firm feel; rippled sponge is softer. Grades are measured by weight in ounces per square yard.

Prime Urethane Foam. There are three types of prime urethane carpet cushion: conventional prime, grafted prime and densified prime cushion. Conventional prime and grafted prime urethane cushion are manufactured by a chemical mixing reaction process. There are many types of prime urethane available today with a variety of density and firmness. The best products are those which combine the right balance of properties for comfort and durability. In densified prime, the chemical structure is modified during the manufacturing process to produce a product with specific performance characteristics. Grades of densified prime urethane are determined by the foam **density**, or weight of the material per cubic foot.

Bonded Foam. Bonded foam cushions are made by combining shredded pieces of urethane through a fusion process into a single sheet of material. Bonded foam grades are also measured by density.

Mechanically Frothed Urethane Foam. Frothed urethane foam cushions are made from a process originally developed to apply cushioned backings to carpet. The urethane foam cushioning is applied to a sheet of non-woven material, forming a carpet cushion product with a typically higher

See the Carpet Cushion Council's brochure on residential cushion guidelines for specific details on product types.

How to shop for carpet cushion.

Here are some simple rules to follow when choosing the right cushion to go with your new carpet.

1. The heavier the traffic, the thinner the cushion. In heavy traffic areas like hallways, stairs, rooms with lots of activity and rooms with heavy furniture, such as dining rooms, choose thinner ($\frac{3}{8}$ inch and less) and heavier cushion to better protect the carpet.

2. For bedrooms, dens, and areas where a more luxurious feel is desired, thicker and more resilient cushion can be used.

But again, it's best to go with higher ounce weight or higher density products to help make the carpet last longer.

3. Visual appearances of cushion are nice, but remember, once it's installed, you'll never see the cushion again. Pay more attention to ounce weights, densities, and thicknesses when buying.

4. Don't scrimp. Remember, your new floor covering is a system of both carpet and cushion. If you cut corners on cushion, you could be cutting the usable life of your carpet.

5. Ask about the installers. Most stores use their own professional installers or a reputable installation firm to make sure your new floor covering is properly installed. It doesn't hurt to make sure that your new carpet will be put down right by people who know how.



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