CHOOSING RESILIENT FLOOR COVERINGS

A PACIFIC NORTHWEST EXTENSION PUBLICATION

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The term "floor coverings" is used for all of the materials that can be put over a subfloor to provide the finished surface upon which people walk, stand, and carry out a variety of activities. Floor coverings get more use than any other surface in the home. The covering is not only the background for the room decor, but it can help insulate the floor, provide cushioning, and absorb sound. Performance is therefore an important consideration in selection, along with color, pattern, and texture.

Floor coverings can be grouped into hard, resilient, and soft. Each grouping has different performance characteristics, and there are variations within each group.

Hard floors include slate, brick, concrete, ceramic tile, wood, and plastic coatings. They do not have any cushioning effect, although some, such as wood, are less hard than others, such as concrete. They are slippery when wet, and a fall can mean broken bones. They are noisy when walked on and reflect sounds back into the air. However, they are very durable and useful in certain areas of the home.

By contrast, soft coverings (rugs and carpets) provide softness and warmth underfoot, insulate the floor from cold, absorb sound, and are not slippery. These advantages, coupled with the decorative effect, have resulted in the manufacture of carpets for kitchens, bathrooms, laundry rooms, and outside living areas. Man-made fibers and special waterproof backings are combined in constructions that are easy to keep clean and give satisfactory service.

In between the hard and soft floor coverings are those that are termed resilient. They are more comfortable underfoot than the hard floors and vary from a slight resilience to a considerable amount of cushion. The publication contains information about the various types of resilient floor coverings.

Kinds of Resilient Floor Coverings

ASPHALT TILE is still available, but has largely been replaced by vinyl asbestos tile. Asphalt tile is low in price, but is harmed by grease, food spatters, and petroleum-based cleaning solutions and water may soften and stain, has a grainy surface, and is difficult to maintain. It must be waxed regularly.

LINOLEUM is made of a combination of oxidized linseed oil, resins, wood flour, and coloring material pressed into a felt base. The word "linoleum" should be used only for this product, since it does not perform like vinyl floor coverings and requires different care. While it is resistant to grease, it can be harmed by alkalis. This means that it cannot be installed on concrete that is in direct contact with the ground. Because moisture and alkali can move up through the concrete and felt backing into the linoleum, it is often necessary to seal them on the linoleum every two or three years.

The surface of linoleum is porous and should be sealed before a wax or liquid floor dressing is applied. Traffic leaves tiny scratches and scuff marks on linoleum so that it may have a worn appearance before its useful life is over.

VINYL-ASBESTOS TILES are composed of vinyl resins and asbestos fillers. They are moderate in cost, very durable, and easily cleaned. They can be used over on-grade and below-grade concrete as well as on suspended wood subfloors. Resistance to alkali and grease is exceptionally good.

HOMOGENEOUS VINYL TILE is unbacked and usually has uniform composition throughout. It is higher in cost than vinyl-asbestos tile. It can be installed on suspended wood subfloors or over on-grade and below-grade concrete. It is durable and easily cleaned.

VINYL SHEET FLOORING is available as "inlaid" (the pattern going throughout the wear layer of vinyl), and as "rotogravure" (the pattern is printed on a sheet that is then covered with a layer of clear vinyl as the wearing surface). The thickness of both types of wear layers varies with the price of the floor covering. Vinyl sheet floor coverings range from having no cushion at all to a thick cushion beneath the wear layer. Special backing material is applied to some vinyl coverings so they can be used on concrete that is in contact with the ground.

NO-WAX SHEET FLOORING produced by one manufacturer is not a vinyl surface but a new product to which it is claimed wax will not stick. If the gloss becomes lowered after several years of service, the manufacturer can provide a special floor finish for periodic application in traffic areas.

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Characteristics of Resilient Floor Coverings

Gauge or thickness

The durability of the floor covering depends partly on the thickness of the wear layer. Modern manufacturing methods and improved materials have resulted in durable wear layers that are thinner than formerly needed. The wear layer is either that part containing the color and pattern, or is a transparent layer above it. Inlaid vinyl and linoleum, for instance, have the pattern all the way through the wear layer. Printed vinyl sheet flooring and some of the tiles have a wear layer above the pattern, which varies from 6 mils to several times that thickness (at least 10 mils is needed to resist damage by sharp objects).

Quietness and comfort vary with the total thickness of the floor covering, from the backing to the surface. The thicker floor coverings absorb more impact and are therefore less noisy, and at the same time provide more cushion for walking and standing. The cushioned floor coverings vary both in their thickness and in the amount of cushion provided.

Resilience

Resilience is the elasticity of a material that causes it to regain its original shape after being indented. The impact from walking traffic can be several thousand pounds per square inch, especially with tiny heels. It is not possible to control the indentation that a floor may receive, but the results can be minimized. Light, multicolored floorings are chosen in patterns that have swirl, marble-like graining, terrazzo, mosaic, or spatterdash mottling. Embossed floor textures and low gloss also conceal indentations. To reduce the indentation from heavy furniture, floor protectors of adequate size should be used under furniture legs. (Do not use dark composition protectors, as they discolor both vinyl and linoleum.)

Underfoot comfort

Underfoot comfort of resilient floor coverings is affected by the subfloor material as well as the composition of the floor covering. On concrete, a cushioned floor covering will help reduce fatigue from walking and standing. The thicker cushions will also provide additional insulation from cold floors.

Quietness

The sound created by the impact of foot traffic is a common source of annoyance. The sound tends to reverberate to adjoining rooms, and is most pronounced in the room underneath. Most resilient floor coverings produce less noise than hard floors, but cushioned floor coverings create much less sound than the uncushioned resilient coverings. However, this cushion is not enough to stop sounds coming through the floor from the room above.

It should be remembered that room noises, as from voices and equipment, are not absorbed by resilient floor coverings as they are by the textured surface of carpeting. The smooth surface of resilient coverings allows the sound to reverberate.

Light reflectivity

The amount of light that is reflected by the floor covering helps determine how much light is available for seeing tasks. The tints closest to white will reflect the most light, whereas medium and dark colors will absorb a great deal of the light or electric light that reaches the floor.

The amount of gloss on the surface of the floor covering has an effect on the appearance of the finished floor. Smooth, shiny flooring materials tend to show up minor irregularities in the subfloor surfaces, and therefore require more careful subfloor preparation. In addition, indentation of the resilient floor coverings soften the light reflection.

Effect on radiant heating

Tests show there is almost no loss of heating efficiency through the use of resilient flooring materials. No harmful effects on the floor coverings have resulted from their use on radiant heated floors.

Flammability ratings

Floor coverings can be tested for flame spread where this is a concern. Currently, a government directive known as the Hill-Burton Regulations is used to test floor coverings for hospital and medical facilities. Information about the rating of a particular floor covering can be obtained from the manufacturer.

Relative costs of resilient floors

Several factors besides the square-foot cost of the floor coverings should be considered in assessing the cost. Perhaps the most important is the expense of preparing the subfloor and doing the installation work. The most expensive floor covering may not perform well if the subfloor is not suitable, or the adhesive or workmanship is not good quality. Installers vary in their experience and reliability, as is true with any trade.

Manufacturers of resilient floor coverings have manuals that specify the kind of subfloor that is needed for each covering. Retail dealers have this information. The method of installation may make
it possible for a new resilient covering to be placed over an old covering. The advice of the floor covering retailer and a qualified installer are needed. The size and shape of the room may make tile more economical than sheet flooring, because of irregularities that require much fitting and loss of material. The width of the room may require more yardage in sheet coverings than would be needed in tile. Do-it-yourself installing saves a great deal of money where it is feasible. Some floor coverings can be cut and laid without adhesive, using either doubleface tape or adhesive around the edges. Self-adhesive tiles can be laid by an amateur, and some tiles carry a five-year guarantee for bonding to the subfloor.

Installation of Resilient Floor Coverings

Moisture conditions

The harmful effects of moisture on some types of resilient floor coverings make the grade level of the subfloor an important consideration. Because concrete in contact with the ground is never completely dry, special care must be taken to use the right floor covering with the proper adhesives. Wood subfloors constructed over wood strips placed on concrete also are likely to gain moisture from the ground. Therefore, resilient floor coverings are not recommended, even those types that can be installed on concrete, because the moisture could damage and warp the wood floor. Wood subfloors need to have 18 inches of well-ventilated crawl space, or a full room underneath.

Surface moisture in a laundry, bathroom, or kitchen may find its way through seams in the floor covering and attach the adhesive. Sheet floor coverings are less likely to have seepage, especially if there are no seams or the seams have been made waterproof. Covering the floor covering up the wall for a few inches is helpful in preventing spills from seeping under the edges of the floor covering.

Repairing damage

Damaged tile can be replaced by installing new tile, but the replacement will be noticeably different in color from the old. Vinyl that has been charred by cigarettes or other sources of heat can be rubbed with fine steel wool or other abrasives. Cuts and tears in a-tiled vinyl sheets can be sealed with metal foil and a special heat sealer or an electric iron, preferably by an expert. Linoleum can be patched by using a mixture of lacquer and granulated linoleum.

Preparing the subfloor

Covering a floor that has been used formerly as a walking surface can be done if three conditions are met: (1) all wax, oil, paint, varnish, old adhesive, old floor covering is removed (unless the new covering is attached only around the outer edges); (2) the floor is free from surface irregularities that would "telegraph" through the new covering; and (3) the old floor is prepared so it is a satisfactory bonding surface for the adhesive.

Directions for do-it-yourself preparation should be carefully followed. These can be obtained from the retailer of the new floor covering material. Some manufacturers specify certain types of plywood, hardwood, or particle board for underlayments on both old and new wood floors. Mastic-type underlayments generally are used to level concrete subfloors.