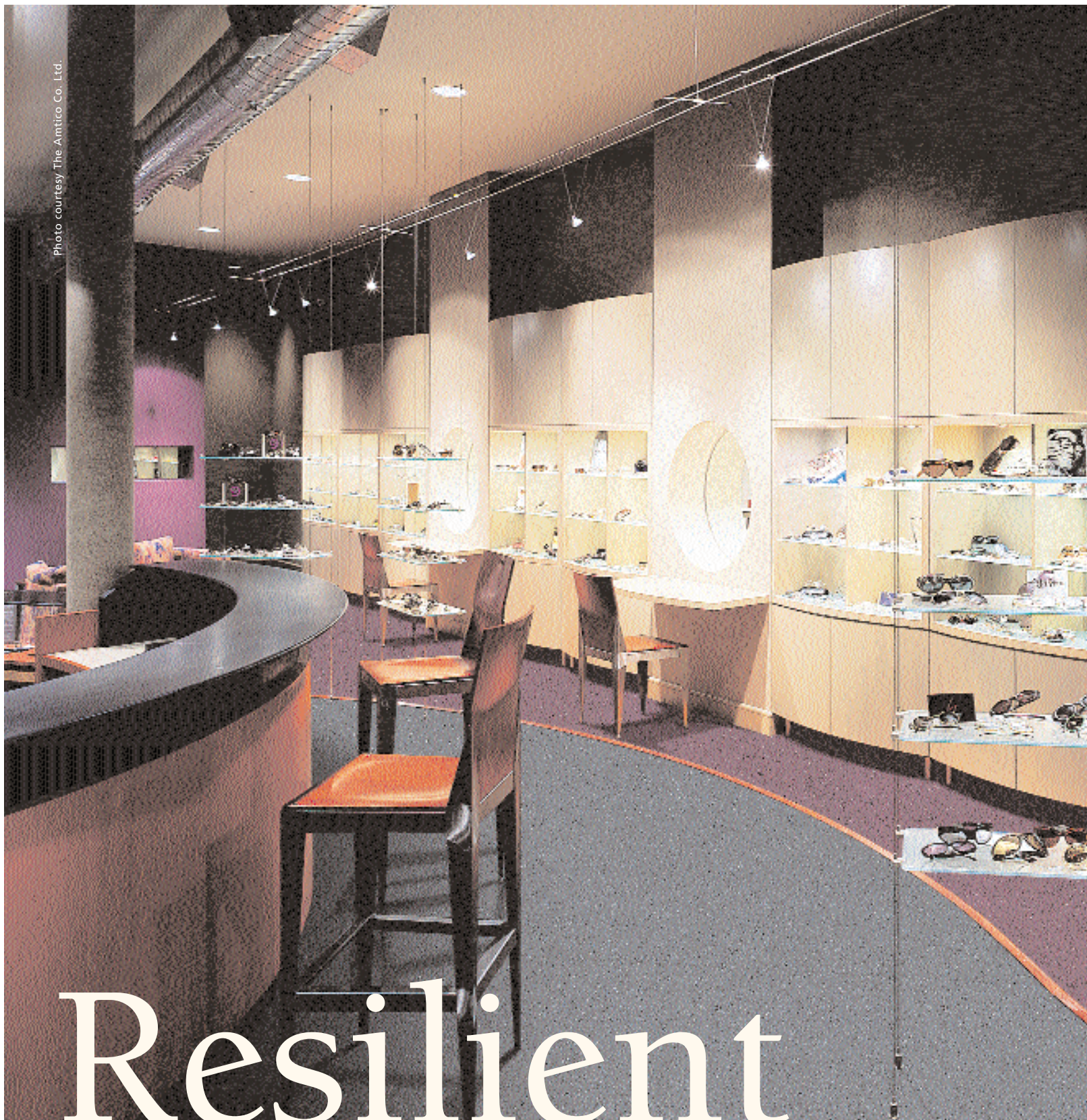


Photo courtesy The Amtico Co. Ltd.



# Resilient Vinyl Flooring



**(This page)** Resilient vinyl flooring is the perfect choice for busy retail environments—with minimal effort, it maintains its looks and enhances the space's public image.

**(On the cover)** The refurbished Floral Hall of the Winter Gardens in Blackpool, United Kingdom, employs resilient vinyl flooring to maintain the beauty of the historic structure, as well as the safety of patrons. Photo courtesy The Amtico Co. Ltd.

modern materials

# Beautiful interior spaces stand the test of time

By Erik Missio

**T**he innovators of today's interior vinyl products artfully blend traditional materials with advanced technologies to produce versatile, durable, and beautiful flooring. Many interior designers and architects recognize resilient vinyl flooring as an important material, particularly when creating spaces with heavy traffic or that have to be kept meticulously clean. Design flexibility provides an added bonus.

Vinyl flooring is referred to as 'resilient' because it characteristically bounces back from the weight of objects compressing its surface. This feature also contributes to favorable acoustics and comfort underfoot. Originally used only in high-traffic areas, vinyl flooring is now used in just about every hard-surface application. Durability, ease of maintenance, and moisture resistance top the list of attributes explaining its wide acceptance.

Commercial vinyl flooring is manufactured in either 305-mm or 230-mm (12-in. or 9-in.) square tiles, or continuous sheets 2-m or 4-m (6-ft or 12-ft) wide. Floor tile is sold as either solid vinyl or vinyl composition tile (VCT). Sheet flooring can be homogeneous, inlaid, or layered composite.

Vinyl flooring formulations differ widely, and many are proprietary. The actual vinyl content of these floors ranges from 11 to 55 percent. Other raw materials used include: fillers such as calcium carbonate (limestone), or clay; plasticizer additives to soften the vinyl and provide flexibility; stabilizers to minimize degradation and discoloration from heat and light; and pigments.



Studies suggest the use of easy-to-clean surfaces like vinyl flooring in healthcare settings is a sensible approach to controlling pathogens. Sheet vinyl floors help maintain stringent hygienic conditions, receiving high ratings where infection control is an issue.

## Versatility in design

Vinyl sheet and tile flooring creations come in myriad styles and extensive color palettes, but the material's versatility is particularly evident in the seemingly limitless, often intricate patterns flooring manufacturers are capable of producing. Tile can be custom cut and laid out in patterns using different colors or finishes. Corporate logos can be made from VCT to become part of the floor design, as can geometric icons or other shapes. The latter can be used, for example, to guide traffic in a hospital, school, or retail setting.

Custom designs are easily created using vinyl sheet and strip plank flooring, as well. Designers have been known to generate CAD drawings of the floor pattern they want from just a fabric sample as their inspiration. Virtually any look can be obtained to suit any decor, including classic looks simulating wood and ceramic tile.

## Job one: durable, dependable performance

Building owners can (and should) expect long-lasting beauty, even in heavily traveled areas, from properly specified, installed, and maintained vinyl floors. New technologies have improved resilient flooring's performance, making it tougher than ever—resisting rips, tears, gouging, scratching, scuffing, staining, indentation, and other physical abuse.

A floor's durability is rated according to standards judging criteria

such as: abrasion, gouge, puncture, cut, and impact resistance; how dynamic and static loads affect the life of the floor; how color is affected by heat and light exposure; and chemical resistance. Upon request, vinyl flooring manufacturers can provide much of this information, showing exactly how their products measure up to these various performance standards.

A single flooring product may not meet the demands of every location in a building, so specifiers must check with the manufacturer to determine the best product for a particular application. Manufacturers can also recommend proper installation and maintenance techniques for ensuring the new floor performs as intended.

Some of the areas in which vinyl flooring manufacturers provide guidance include:

### *Loads*

Consideration should be given to a floor's ability to recover from indentation after a load has been placed on it for 24 hours. Test results show load limits to which products can be subjected with no permanent indentation after load removal.

### *Chemical and stain resistance*

Special vinyl flooring formulations can be used in areas prone to chemical and staining reagent exposure. Manufacturers can



provide test results for a variety of chemicals and reagents on individual product lines. In general, vinyl floors resist alkalis, acids, alcohols, oils, greases, and aliphatic hydrocarbons. Ketones, esters, and chlorinated and aromatic hydrocarbons may cause softening. Some rubber materials, such as rug backings and car tires, cause staining.

#### *Static dissipation*

Not many people realize a person walking across a flooring surface can generate a static charge amounting to several thousand volts of electric potential. While not a problem in most venues, it is definitely to be avoided where sensitive electronic equipment is manufactured or operated, as in clean or computer rooms, around fiber optics, and in pharmaceutical manufacturing facilities. The answer is electrostatic discharge (ESD) flooring.

Specifically designed to dissipate unwanted static charges from the human body, it allows electrical charges to flow safely to ground to avoid damaging sensitive equipment or creating an unwanted spark in a highly flammable area. ESD floors based on dense, homogenous, static-dissipative vinyl flooring can be extremely durable, resist the effects of common chemicals and solder, and are not conducive to bacterial or fungal growth.

#### *Slip resistance*

Specifying the appropriate floor surface can help play a significant role in preventing slips and falls—and associated injuries, workers' compensation claims, lost productivity, and lawsuits. Tile and sheet vinyl floors are available with enhanced slip-retardant surfaces suitable for a variety of commercial and institutional applications. Manufacturers recommend flooring with enhanced slip resistance for ramps, pool/spa areas, and locker rooms, as well as areas of high humidity.

The slip resistance of a floor surface is measured by its coefficient of friction. The higher the coefficient, the less slippery the surface. Suitable vinyl flooring products are available in both sheet and tile, with abrasives in the material or a raised profile. While flooring with a raised profile is appropriate in high traffic areas where enhanced slip resistance is needed, it is potentially more difficult to clean than smooth surfaces.

#### **A trusted partner in healthcare settings**

A study published in the *American Journal of Infection Control* suggests the use of easy-to-clean surfaces like vinyl flooring in healthcare settings is a sensible approach to controlling pathogens.<sup>1</sup> Vinyl is one of the few materials that can stand up to the amount of cleaning these settings require.

Sheet vinyl floors help maintain stringent hygienic conditions, receiving high ratings where infection control is an issue because the seams can be chemically sealed or heat welded to keep out moisture and dirt. With fewer seams than most other hard surface flooring, vinyl sheet gives bacteria fewer places to settle in and grow.



## Did You Know?

Vinyl window frames require three times less energy to manufacture than aluminum window frames.



Reflective plastic roofing assemblies bounce sunlight and radiant heat away from a building, helping the structure stay cool while reducing energy use for air-conditioning.

Tile and sheet vinyl floors are available with enhanced slip-retardant surfaces suitable for a variety of commercial and institutional applications. Suitable products are available in both vinyl sheet and tile, with abrasives in the material or a raised profile.



For this reason, vinyl has even been specified in the bone marrow transplant units of hospitals.

Vinyl is also flexible enough to be extended up a wall to form a wall base, keeping dust from collecting where walls intersect the floor. Vinyl flooring is nearly impervious to water. Disinfectant cleaners can help provide a sterile surface without damaging the floor, and most stains are easily removed.

To understand the criteria driving decisions about material choices among healthcare interior designers, The Vinyl Institute commissioned a survey of Healthcare Forum members of the International Interior Design Association (IIDA). Aesthetics, durability, and ease of maintenance were repeatedly called out as being paramount.

Respondents said they specify vinyl flooring most often for the public or community spaces in healthcare facilities. VCT is the most frequently specified, followed closely by sheet vinyl and broadloom carpet. Asked to rate the top five characteristics influencing their decision to specify VCT, three-quarters of respondents said initial cost, 73 percent chose it for durability, 69 percent for aesthetics, 68 percent because the client preferred it, and 51 percent for ease of maintenance. These numbers reflect a material with a strong balance of very desirable characteristics.

For patient and long-term care resident rooms, sheet vinyl is the flooring material of choice, followed by VCT. Sheet vinyl is selected because of its aesthetics, durability, ease/cost of maintenance, client preference, and infection control.

Vinyl plank flooring products are growing in popularity, ranking third in the survey among preferred materials for patient and resident rooms. The trend toward designing these spaces with a warmer, more residential feeling is likely driving this material's popularity.

### Prolonging vinyl flooring's long life

The one person who contributes the most toward ensuring vinyl flooring performs as long and as well as it can is the building owner. All that is required is a commitment to being well informed about floor use and maintenance.

The vinyl floor's wear layer is key to maintenance. The thickness

is generally measured in mils, or thousandths of an inch. Higher-quality vinyl floors may also employ a high-performance wear layer, while lower-priced floors generally feature a vinyl wear layer to protect the underlying pattern. In general, a high-performance wear layer can help make the floor easier to clean and more stain resistant.

Some of the greatest abuse to any floor comes from tracked-in dirt and abrasive grit, which wears away any floor's surface. The good news is proper cleaning and maintenance are the only things required to combat dirt and help preserve vinyl flooring's utility and beauty.

Floors should be swept or mopped daily to remove gritty dirt. Damp mopping should be done with a neutral detergent. Mop treatments with petroleum solvents or silicone compounds should be avoided as they can create slippery conditions. Spills should be wiped up before they dry with a clean white cloth dampened with warm water. To help control tracked-in dirt, grit, or stains from asphalt and oil in driveways, non-staining doormats should be placed at entrances. Some rubber or foam-backed doormats can cause surface staining.

Periodic spray buffing and the application of a high-quality commercial floor polish are also part of the regimen to resist staining and maintain a desirable appearance over time.

### Conclusion

Resilient vinyl flooring's proven long-term durability and safety features, aesthetics, moisture resistance, and low maintenance requirements are indicative of a cost-effective material with a strong balance of desirable characteristics. With vinyl, designers can be assured of delivering performance as well as beauty for the right price. ☺

### Notes

1. Noskin, Gary A.; Bednarz, Patrice; Suriano, Terra; Reiner, Sandra; Peterson, Lance R.; "Persistent contamination of fabric-covered furniture by vancomycin-resistant enterococci: Implications for upholstery selection in hospitals," *American Journal of Infection Control*, August 2000.