

ENTRANCE FLOORING 101

Factors for Consideration in Design & Selection

AUTOMATIC
CAUTION
DOOR



What are entrance flooring systems and why are they necessary?

In today's construction industry, entrance flooring systems go by many different names. They can be referred to as walk off mats, floor mats, foot grilles, entry grids or any combination of these terms. The name entrance flooring systems encompasses all of these terms into one universally recognized product type.



Prior to 1968, most facilities relied on some form of carpeting to act as entrance flooring. The first commercial grade system was designed in that year to capture dirt from shoes, and contain the dirt below the surface for future cleaning.

Entrance flooring systems have come a long way since 1968. This eBook is designed to give you a better foundation for making the best product selection for your facility.

Get there quickly:

- 3 Maintenance ▶
- 5 Function ▶
- 7 Weather/Environment ▶
- 9 Liability ▶
- 11 Markets ▶
- 13 Sustainability ▶
- 15 Aesthetic ▶
- 17 References ▶



MAINTENANCE



How does maintenance affect your product choices?

There is no getting around it -- building maintenance is a daily responsibility. Taking proactive steps to ensure your building remains clean will not only keep your maintenance staff happy – it will save you time and money as well.

Dirt-Trapping Abilities -Think about how many people enter your building daily and how much dirt and debris is tracked inside because of these visitors. Add that up day after day, month after month, and you will understand why trapping that dirt at the door is crucial.

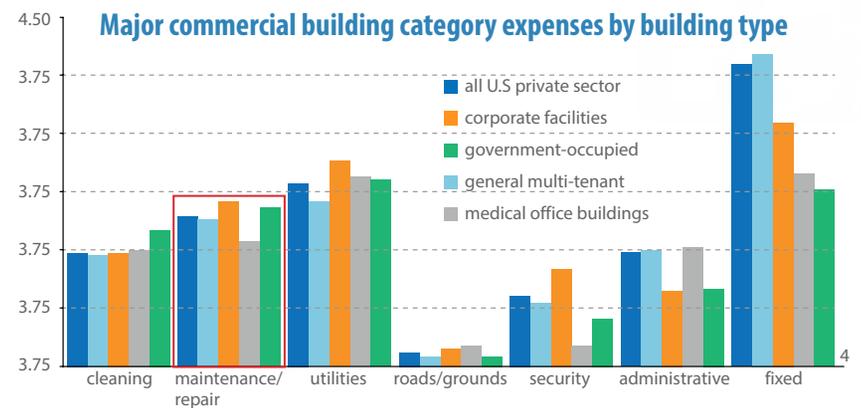
Optimal Performance - Make sure your entrance flooring system's length is long enough, as one that is too short may not be as effective. As stated in *Health Facilities Management*, "the amount of soil retention with these mats is directly proportional to their size. Industry studies have shown that the most effective systems have 18 linear feet of exterior matting in conjunction with 18 linear feet of interior matting," which shows the importance of having the correct entrance flooring length.³ This might not always be possible, but for these products, the more material used correlates to better performance.



A large amount of dirt can be tracked into a building in a short period. Cleaning dirt from floors can add up over time. If you're thinking about forgoing an entrance flooring installation in favor of less expensive tactics, consider these statistics:

- Some experts estimate that "floor maintenance can account for as much as 80 percent of a facility's cleaning budget."⁹
- One dollar spent to keep soil out of a building will save \$10 in removing soil once it's inside.¹
- It costs \$700 to remove only one pound of dirt.³

A building owner can cut these cleaning costs in half by trapping the dirt at the front door with an entrance flooring system.





FUNCTION



Do these systems function as intended?

One important factor in building design and management is the functionality of its parts. Does entrance flooring really work? **Let's look its capabilities:**

Fall-through - Carpet tiles have become popular due to their perceived cost-effectiveness, but they don't allow for adequate fall-through of dirt. Entrance flooring systems should have a minimum of five to ten percent of free area for fall-through, and still maintain rail spacing that is safe, even for the thinnest of high heels.



Tread Inserts - A carpet insert will dry shoes better than a plain metal or rubber surface. Use the inserts that best reflect the weather conditions of the area's climate and provide the look you desire. Entrance flooring ensures that the public's shoes are wiped clean before crossing the threshold of a building.



Mat Length - Various studies show that the more entrance flooring you have, the better it performs, as referenced in *Health Facilities Management*: "Approximately 80 percent of the debris from footwear can be removed after walking over 20 feet of a matting system."⁹





WEATHER/ENVIRONMENT



Why is it important to consider weather and geography?

Your geographic location plays an important role in what type of entrance flooring system you choose. In the United States alone, weather conditions can range from snow, ice and rain to dust and sand, or can be a combination of these elements.



Snow/ice/rain - A system that uses absorbent heavy-duty carpet inserts with aggressive dirt removing capabilities is the best choice for this type of weather.



Dust/sand - Opt for a system with more fall-through capabilities and tread inserts that capture or remove fine particles.

Communicating with the manufacturer on your geographical needs will help you choose the best option.



LIABILITY

How can I reduce my risk of liability?

If you are a building owner or professional designer, you know that injuries by or within your building are possible.

One of the most important decisions that can be made to reduce that risk occurs at the front door of your facility. If you've specified entrance flooring, you've already taken steps to significantly reduce your liability.

Accident Prevention - Slips and falls are high-risk incidents that can occur within a building. Every year, slip, trip and fall accidents cost businesses billions of dollars in legal claims, increased insurance premiums and lost revenue. These incidents are also a leading cause of accidental death for men and women over the age of 75.⁸

Value Engineering - Too often, these risk-reducing entrance flooring systems are an afterthought in both the building's design and function. In the construction phase, they are often eliminated first to cut costs. When considering the average cost of a slip, trip or fall claim, is excluding an entrance flooring system from your building worth it?

If you're thinking about forgoing an entrance flooring installation in favor of less expensive tactics, **consider these statistics:**



"Slip, trip, and fall injuries ...were attributed to hazards such as liquid contamination on the floor, objects on the floor, or ice/snow in parking areas."²



27%

"Falls, slips, and trips accounted for 27 percent (309,060 cases) of the total occupational injuries and illnesses in 2015."⁴

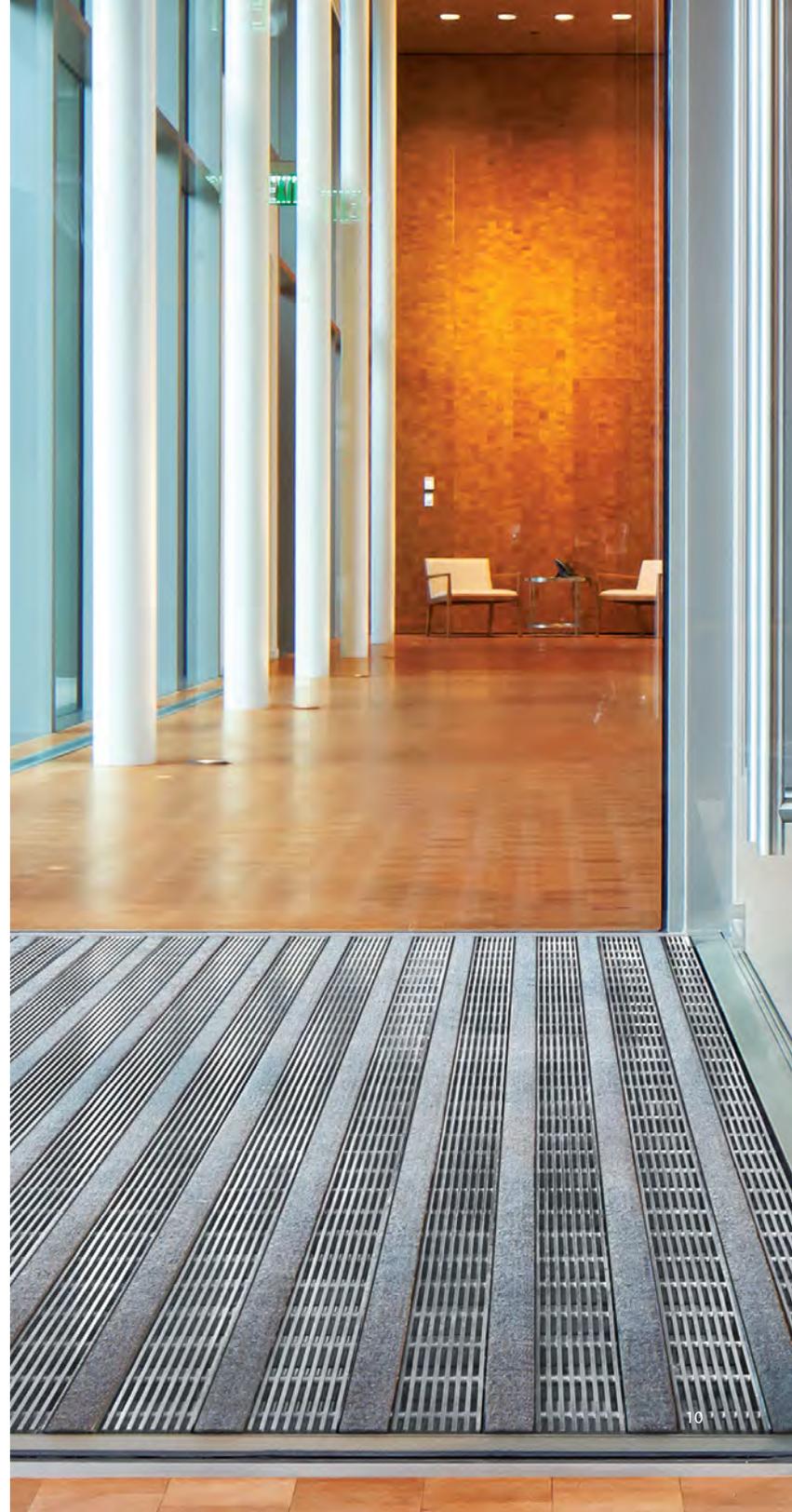


"One out of five falls causes a serious injury such as broken bones or a head injury."⁶



2.8 MM YRLY

"Each year, 2.8 million older people are treated in emergency departments for fall injuries."⁶





MARKETS

Security Phone

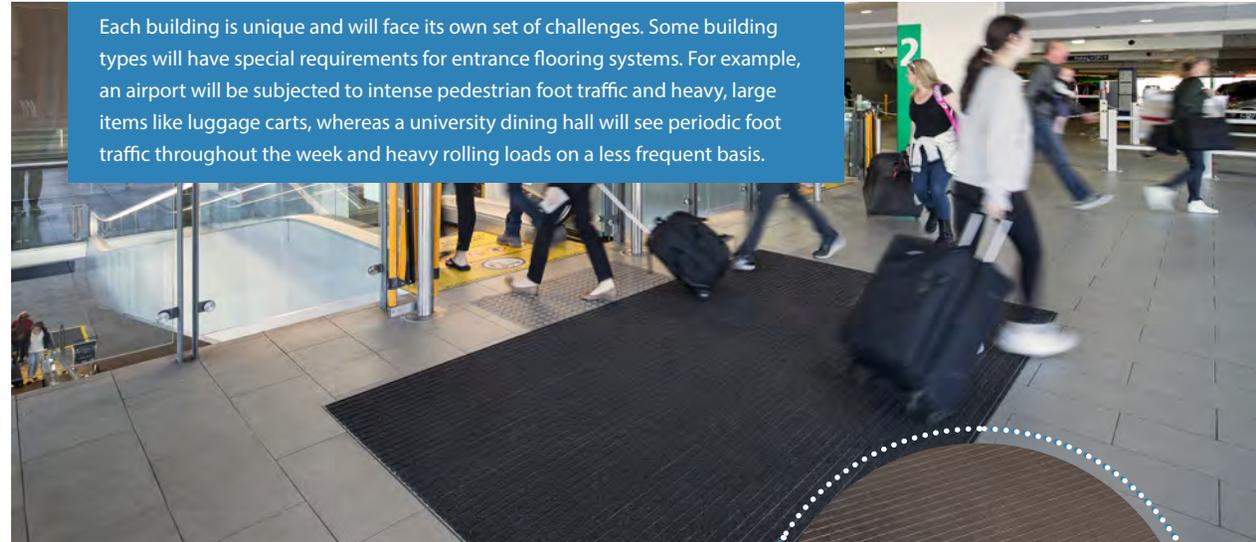
This phone is a lifeline. Use it to report any safety concerns or emergencies to the security team.



Does my building type make a difference?

The type of building makes a substantial difference in the type of entrance flooring system being used.

Each building is unique and will face its own set of challenges. Some building types will have special requirements for entrance flooring systems. For example, an airport will be subjected to intense pedestrian foot traffic and heavy, large items like luggage carts, whereas a university dining hall will see periodic foot traffic throughout the week and heavy rolling loads on a less frequent basis.



Rolling Loads - The sidebar photo shows an aluminum-based system that was not designed for heavy loads, but was installed in an airport that encounters them every day. Significant damage occurred throughout the units due to the rolling load capacity being incorrectly chosen, and because of this, the system ultimately had to be replaced.

Cost Effectiveness - Foot traffic and potential rolling loads are important factors in product selection, but cost is also another consideration. For example, a publicly-funded K-12 school may not have the budget for an all stainless-steel system. Understanding the products and materials used and reading the manufacturer's literature is a good way to make the right entrance flooring selection for your facility.

Consider the building type, your budget and the daily amount of foot traffic before making a final selection for your entrance flooring system. Remember to factor in how much your facility encounters large pieces of equipment and heavy rolling loads as well.





SUSTAINABILITY

AUTOMATIC
CAUTION
DOOR





What environmentally-friendly products are available?

In recent years, environmentally responsible options and sustainability considerations have risen to the forefront of design and construction. Building owners now choose to build and occupy green buildings. Architects and designers find ways to creatively design healthy interior environments. Manufacturers optimize their processes to provide products that outperform their predecessors in terms of sustainability.

Green Building Practices - According to the United States Green Building Council (USGBC) LEED® rating system, simply using entrance flooring systems reduces contaminants from entering a building. This provides better indoor air quality and reduces the number of chemicals needed for cleaning. LEED® also provides best practices for evaluating the sustainability of products, such as recycled content, sourcing regional materials, VOCs and avoiding chemicals of concern.¹⁰



Third-Party Certification

To navigate 'green washing' and source products associated with positive impact, look for products that are certified through the Cradle to Cradle Certified™ Products Program. The certification is a multi-attribute, third-party certification that assesses a product's composition down to 100 ppm.

Cradle to Cradle Certified™ is a certification mark licensed by the Cradle to Cradle Products Innovation Institute.

Carpet Tiles Versus Permanent Entrance Flooring - Using carpet tiles as entrance flooring has been a popular trend because they are promoted as inexpensive and easy to clean. However, four billion pounds of carpet are discarded into landfills every year.⁵ Carpet tiles may have appealing short-term benefits, but over the long-term life of a building, they will need to be replaced many times over. This makes them unsustainable and a poor return on investment. Remember to consider the function and performance of carpet tiles as compared to entrance flooring systems. There can be significant differences in the amount of recycled content and the presence of potentially dangerous chemicals between carpet tiles and permanent entrance flooring systems. There can also be significant sustainability differences in VOC emissions and material composition, so refer to LEED® for guidance in selecting products.



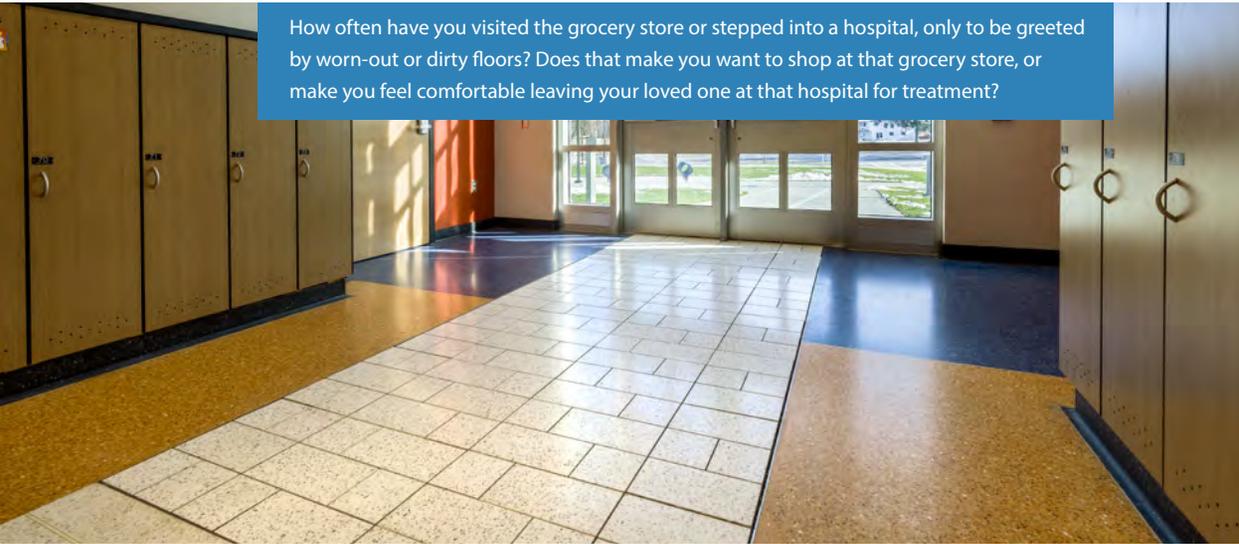


AESTHETIC



Do first impressions matter?

How many times have you visited a beautiful, high-end hotel or office building and noticed unsightly throw-down carpet mats at the front door? Do they provide an image of luxury and grandeur?



How often have you visited the grocery store or stepped into a hospital, only to be greeted by worn-out or dirty floors? Does that make you want to shop at that grocery store, or make you feel comfortable leaving your loved one at that hospital for treatment?



Visual Variety - Today's entrance flooring products offer a wide variety of materials, styles and finishes that can make any entrance beautiful. There is a product for every building type that can achieve the designer or owner's desired aesthetic. Be aware that carpet tiles cannot achieve this same flexibility, as replacement tiles will often not match the existing ones.

Form Follows Function - A quality entrance flooring system with the right look and function doesn't have to cost a fortune. Be sure to ask for samples and perform a side-by-side comparison of each product. These comparisons will help you make a well-informed decision to choose a product that is functional, cost-effective and beautiful. **Frank Lloyd Wright said it best-- "Form follows function - that has been misunderstood. Form and function should be one, joined in a spiritual union."**

Remember to compare your favorite flooring samples and choose a manufacturer who can prove their products' cleaning efficacy. Thorough, thoughtful research will help you make an informed decision.





REFERENCES



Construction Specialties®

Entrance flooring systems are often overlooked within a building, but they can provide many benefits, including keeping your building clean, improving the daily experience of building users, reducing liability and making a memorable first impression. We hope this eBook gives you a better understanding of what an entrance flooring system is and why it's important for your facility.

For more information regarding Construction Specialties Entrance Flooring Systems, please visit our website at www.c-sgroup.com/efs, or speak with a product expert at **800.233.8493**.

[Contact a representative](#) ↗

References

- ¹Baxter, Mark. (2012). "Getting Walked All Over." Cleaning and Maintenance Management. Retrieved from <http://www.cmmonline.com/articles/getting-walked-all-over-3>.
- ²Bell et al. (2013). Slip, Trip, and Fall Injuries Among Nursing Care Facility Workers. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4586109/#R2>.
- ³Bodo, Richard. (2010). "Working 'Outside-In.'" Health Facilities Management. Retrieved from <http://www.hfmmagazine.com/articles/982-working-outside-in>.
- ⁴Bureau of Labor Statistics. (2015). Nonfatal Occupational Injuries and Illnesses Requiring Days Away from Work, 2015. Retrieved from <https://www.bls.gov/news.release/osh2.nr0.htm>.
- ⁵Carpet America Recovery Effort. (2002). Government and Industry Voluntarily Unite to Increase Recycling and Reduce Carpet Waste; National Carpet Recycling Agreement signing is a new approach to protecting the environment. Retrieved from <https://carpetrecovery.org/newsblog/news-media-archive/government-and-industry-voluntarily-unite-to-increase-recycling-and-reduce-carpet-waste-national-carpet-recycling-agreement-signing-is-a-new-approach-to-protecting-the-environment/>
- ⁶Centers for Disease Control and Prevention. (2016). Important Facts about Falls. Retrieved from <https://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>.
- ⁷Guggenheim. (2017). "Form Follows Function." Retrieved from https://www.guggenheim.org/arts-curriculum/topic/form-follows-function#_ednref5.
- ⁸National Floor Safety Institute. (2016). Quick Facts. Retrieved from <https://nfsi.org/nfsi-research/quick-facts/>.
- ⁹Tallmadge, Brian. (2014). "Winning Floors." Health Facilities Management. Retrieved from <http://www.hfmmagazine.com/articles/1225-winning-floors>.
- ¹⁰U.S. Green Building Council. (2017). Contaminant Control. Retrieved from <http://www.usgbc.org/credits/high-rise/v4-draft/eqc2>.