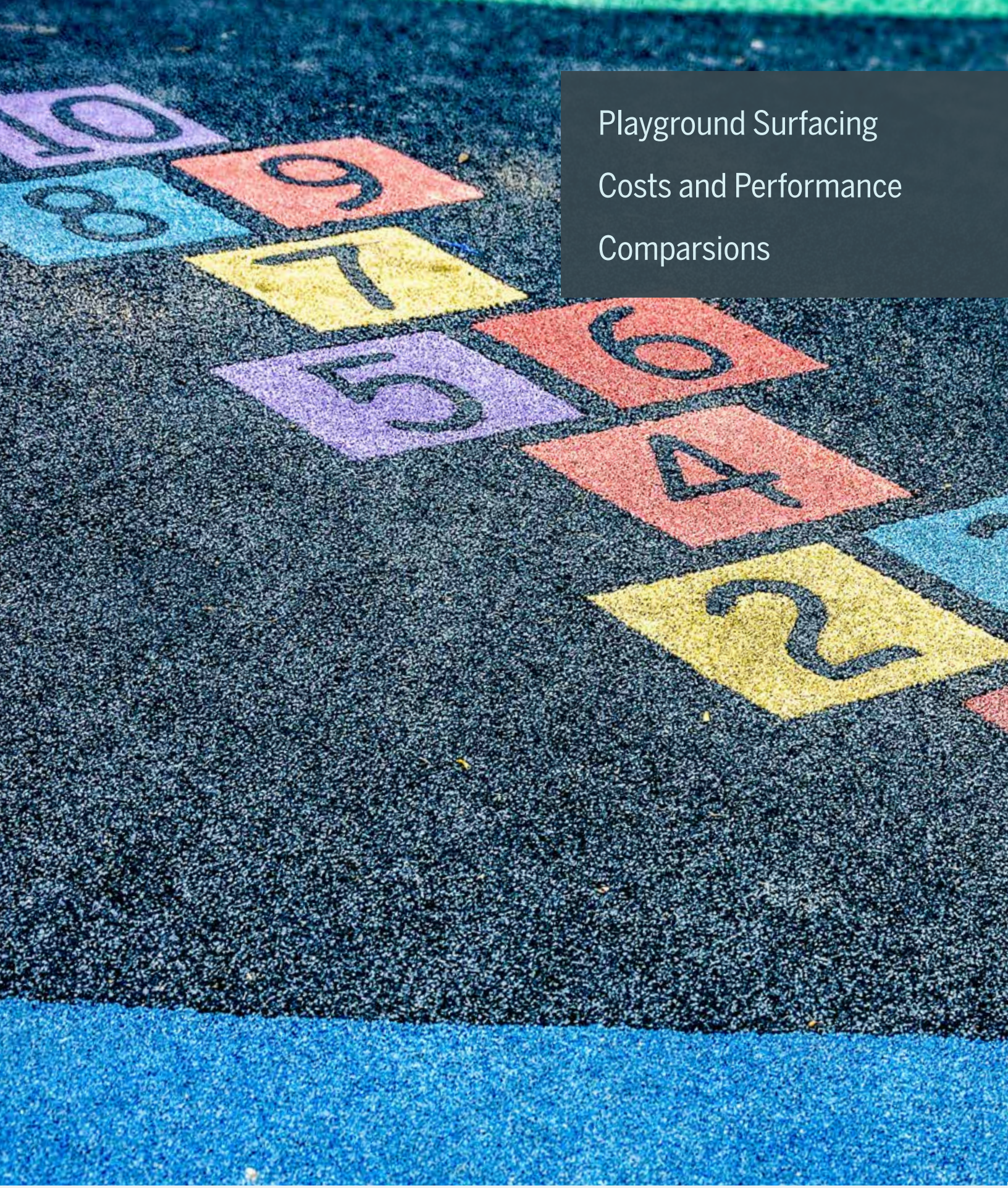

Playground Surfacing Costs and Performance Comparsions

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About Playground Surfacing

An essential part of a new or replacement playground system is the underlying safety-surface that surrounds your equipment. Surfacing solutions are engineered to work seamlessly with the various playground and furnishing systems, and they provide both aesthetic and functional benefits.

Surfacing products must meet specific standards for safety and accessibility. For example, the required level of protection is, in part, calculated by potential fall-heights associated with different kinds of play equipment. Other safety factors include slip-resistance or the amount of maintenance which may be required to keep any loose-filled material in place to maintain a minimum amount of protection.

Standards You Should Know About

IPEMA: The International Play Equipment Manufacturer's Association is a non-profit trade association that maintains a certification program for play equipment and surfacing materials. Products which are certified by IPEMA meet various ASTM Standards for safety.

ASTM: An international set of standards which address a wide range of products. Within the universe of playground solutions, there are specific standards to note. ASTM F1487-17: Consumer safety standards for playground equipment for public use. ASTM F1292-17a: Safety certification for surfacing, specific to fall-height-rating. ASTM F2075-15: Standard Specification for Engineered Wood Fibers (EWF)

Loose Fill Playground Solutions

Engineered Wood Fiber (EWF) Surface

Engineered Wood Fiber (EWF) is processed wood, free of twig and leaf material, and ground to a and randomly-sized, but usually smaller than 2" in length. When it is spread and compacted, it forms a knitted layer that is firm and stable. The materials are certified by ASTM (ASTM F2075) that they meet safety standards and they are free of hazardous substances like paint, chemicals or other additives. This type of traditional surfacing is a good option because it is cost-effective to install and shock-absorbent when properly maintained.

As for accessibility, EWF is compliant with ADA requirements when properly installed with the appropriate drainage features and maintained well. The surfacing will need to be checked weekly to ensure that it is level and the appropriate depth is maintained for safety compliance. EWF will need to be topped off every 2-3 years and wear mats are recommended at slide exits and under swings.

Loose Rubber Surface

Loose Rubber is shredded rubber that is made from 100% clean, ground, recycled rubber tires and often comes in a variety of different colors to complement the look of your installation. Typically a little more expensive than EWF, but less than "poured-in-place rubber," loose rubber provides for a soft, cushioned surface and is non-toxic and free of metals. Similar to EWF, shredded rubber is used as loose material in and around play equipment on a playground. Typically, shredded rubber surfacing will not rot, absorb water or freeze, but it does require some additional maintenance.

The materials will need to be raked on a regular basis to remove any foreign objects as necessary. Since the rubber materials are heavier than wood fibers, they are less likely to be blown away by wind, water or shift in high-traffic areas. Rubber materials will require less frequent fill, as the materials will not compact. Loose materials will need wear mats at slide exist and under swings.

A word of caution though, loose rubber materials are not recommended for playgrounds with children ages 2 or younger, as they may put pieces in their mouths and this could be a choking hazard. The durability of the materials is evident in that most warranties for shredded rubber last for decades.

Bonded Rubber Surface

Bonded Rubber is an alternative to poured rubber surfaces. It provides a seamless surface consisting of shredded recycled rubber tires and binder, similar to the look of wood fiber, but is typically easier to maintain. A bonded surface includes loose pieces similar to those in a loose rubber installation, but the individual pieces are typically larger and are "bonded" together to make a solid surface, which meets ADA standards for accessibility.

With no loose pieces, a bonded surface is less expensive than a poured in place system, and it is easier to maintain than loose rubber. However, over time, the surface may flake and harden over time (7 years +) requiring repairs and patches. These patches will likely not be seamless and will be visible/noticeable. Bonded Rubber can be installed over most hard surfaces including concrete, asphalt, brick pavers, sand and soil.

Solid Surface Options

Poured In Place (PIP) Rubber Surfacing

A poured in place (PIP) playground surface is a two-layer system which consists of a recycled rubber base layer (a basemat) and a top surface. Rubber and polyurethane are mixed together, bonded by a urethane binder, and poured in place, then cured, to create a solid surface. PIP surfaces meet ADA standards for wheelchair access and are durable solutions for safety and slip resistance.

The unique ability to custom-mix the components, makes a PIP solution a good choice when color, graphics and other branding elements help enhance the park or playground surface. Although a PIP solution may be more costly to install, the system requires less maintenance and lower operational costs. Over time, the surface may harden and crack, which would require patching. Patches and other repairs are difficult to conceal. It is recommended to roll coat the surface at least every five years to reduce the hardening effects and lengthen the life of the surfacing.

Rubber Tile Surface

A tiled surface consists of an interlocking system of tiles, manufactured from 100% recycled rubber, which can be installed over asphalt, concrete or compacted gravel. Solid colors and multi-colored tiles are available options, and even though many systems offer lifetime warranties, labor is not included. A common challenge with tiled options is that the seams, where the tiles connect, don't sustain the clean lines and configurations as a result of normal expansion and contraction due to heat and cold.

Synthetic Turf Surface

Synthetic Turf is a surfacing material used to imitate grass with height appropriate impact attenuation. There is a cushioned layer that is typically made of rubber or foam. A synthetic turf can imitate a highly-desired natural grass look, but can also be provided in brown or blue colors. If installed properly and with the correct padding, the system drains well and is easy for wheelchairs to maneuver over and has the best HICC rating (head impact fall rating) of any of the surfaces mentioned.

Although some maintenance is required, synthetic turf patches well, thus sustaining the original look and performance of the installation.

A common challenge with synthetic turf is that it can get very hot in direct sunlight, especially in the summer. With the integration of Hydrochill (exclusively provided by Shaw Industries), a special coating on the silica sand infill, it can help cool down your turf about 30% cooler than standard synthetic lawn surfaces.

Stay Grounded

When selecting a surface for your playground, there are many factors to take into consideration to determine which option is best suited for your needs. From price, maintenance and accessibility to the ease and quality of repairs as well as the option for custom colors and designs. It is important to make sure the surfaces are installed properly to ensure proper drainage and thickness for safety. While there is not a perfect playground surface, you can hopefully utilize this information to determine which option is best for you and your needs.

Surfacing Performance and Cost Comparison Guide

See the following chart to compare material performance and cost.

Type	Material	Cost	Weather			Maintenance		Warranty
		EST/SQFT	Cold	Heat	Rain	Topped	Repairs	
Engineered Wood	Engineered wood fibers	1.50	Can freeze	May decompose	May wash away	2-3 YRS		None
Loose Rubber	100% recycled rubber	4.50	Good	Good	drains well	5-7 YRS		None
Bonded Rubber	100% recycled rubber	11.00	Good	Good		None	Patches	5 Yrs
PIP Rubber	EPDM, Engineered Rubber	16.00-18.00	Good			None	Patches	5 Yrs
Rubber Tiles	100% recycled rubber	16.00	Good			None		Lifetime
Synthetic Turf	Sports Grade Artificial Turf	13.00-16.00	Good	Reduces heat	drains well	None		7 Yrs-20Yrs*

* Brock Pad provided by Shaw Industries offers 20 Year Warranty

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