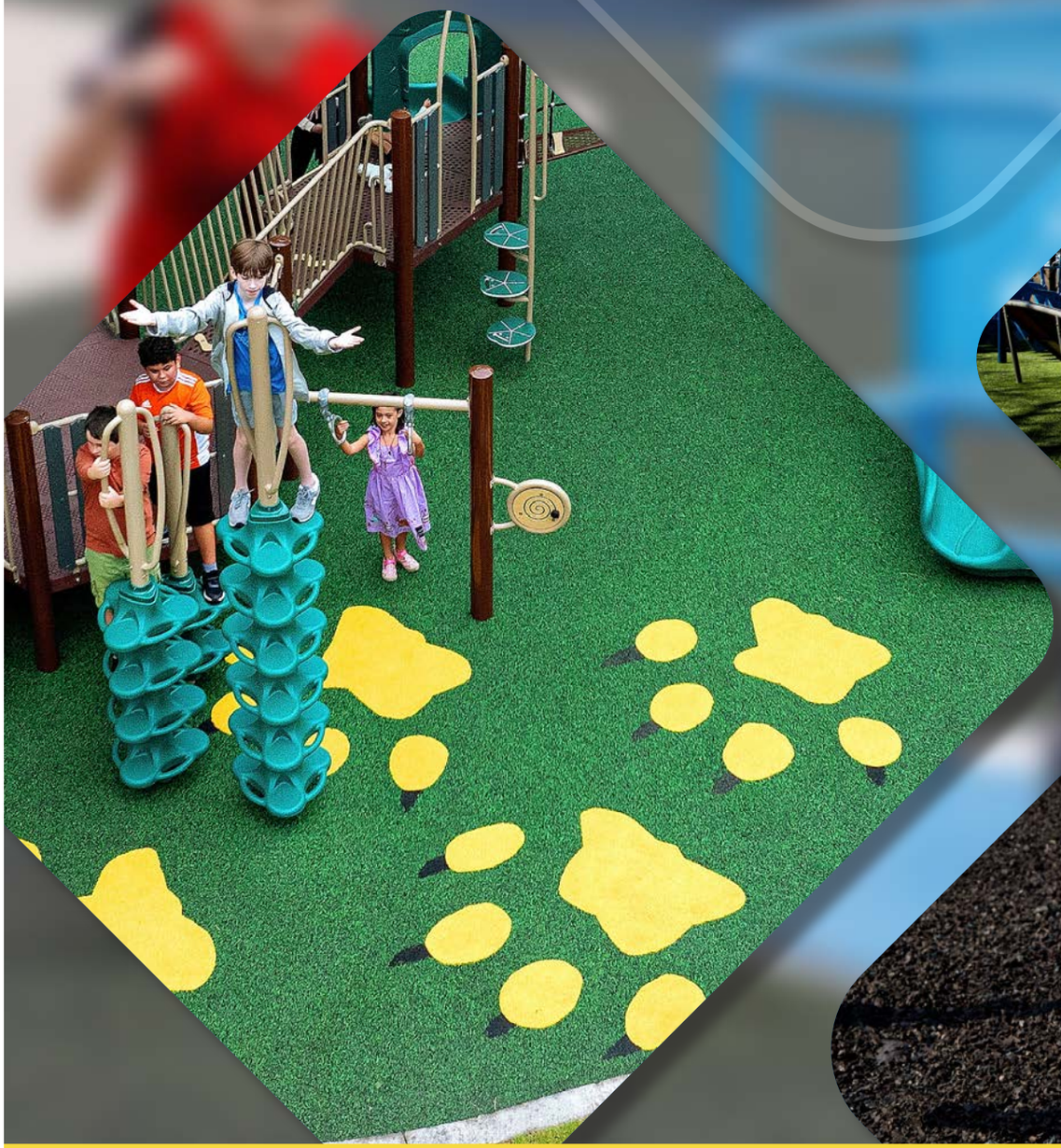
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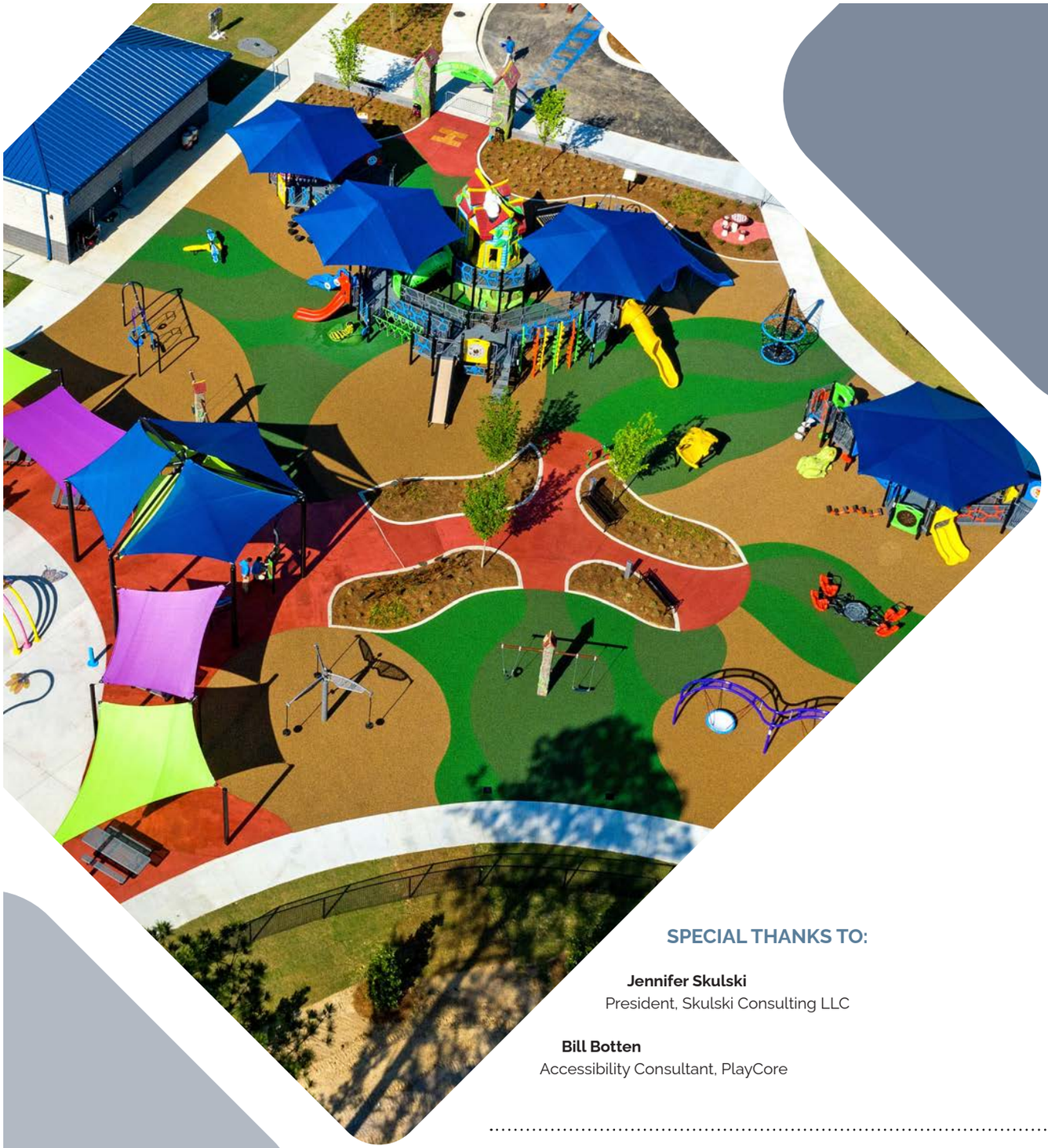
Selecting Appropriate Playground and Recreational Surfacing







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The purpose of the publication is to raise awareness and provide education about surfacing and surface systems. It is not considered an all-encompassing resource. While the intent is to provide general information about the topic, the authors, contributors, and contributing organizations disclaim any liability based on the information contained in this resource. PlayCore, and its family of brands provide this information as a public service while advising of the restricted context in which they are given.

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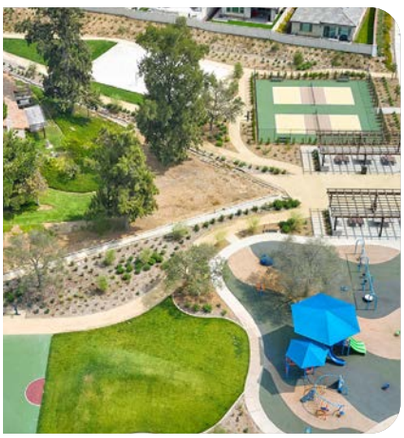
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INTRODUCTION: BUILDING BETTER RECREATIONAL SPACES





When it comes to designing great spaces for play and recreation, surfacing is often overlooked or undervalued. However, the right surface can elevate a project, improving safety, accessibility, inclusion, and reinforcing a theme or brand message. Whether you're working on a bustling urban park, a quiet school courtyard, or an inclusive fitness trail, the surface is what connects everything... literally and figuratively.

This guide was created with you—the designer, planner, or specifier—in mind. Balancing aesthetics, performance, budgets, and community needs is a large order. This guidebook is written to be a practical, current, and design-forward tool. Intended to sharpen the focus on critical areas like site prep, maintenance planning, and choosing the right system for the right setting, Strong Foundations provides best practice guidance to designers with all levels of experience. You will find insights from standards to surfacing types, but always through the lens of real-world project success.

Whether you're designing your first play or recreation facility or your tenth, consider this your go-to resource. Surfaces can do much more than meet standards; they inspire confidence and creativity, promote safety, and help meet the needs of people of all ages and abilities.

THE ROLE OF SURFACING IN SAFETY, PLAY VALUE, AND INCLUSION

Surfacing is more than just a finishing touch—it's a foundational element that directly impacts how a space performs, how it looks and feels, and who can fully experience it. Whether it's poured-in-place (PIP) rubber, engineered wood fiber (EWF), synthetic turf, or tiles, the surface underfoot plays a key role in everything from fall protection to how children move through and interact with a space.

When thoughtfully planned, surfacing supports a variety of developmental and physical needs. It helps create inclusive pathways for mobility devices, defines activity zones, and invites open-ended play through texture, color, and form.[1–3] Durable, well-installed surfacing can also enhance wayfinding and reinforce site themes—quietly working behind the scenes to encourage engagement, creativity, and safe exploration.[4,5]

At the core, safety and inclusion go hand-in-hand. Surfacing systems that meet or exceed standards like American Society for Testing and Materials (ASTM) F1292 (impact attenuation)[6] and ASTM F1951 (wheelchair accessibility)[7] not only protect users but ensure everyone can participate equally. In well-designed spaces, the surface isn't an afterthought—it's a key contributor to equity, usability, and the overall play or recreation experience.

WHY SPECIFICATIONS MATTER

Understanding the role of surfacing is one thing—successfully delivering it on a project is another. Even the most thoughtful design can fall short without clear, well-informed specifications. That's where details matter most.

Specifications guide everything from system selection and sub-base prep to long-term performance and warranty coverage. They bridge the gap between design intent and on-site execution, helping ensure that what's installed actually meets safety, accessibility, and durability goals. With so many surfacing types and manufacturers in the market, well-written specs can also protect against product substitutions that may not offer the same performance or life-cycle value.

By starting with clear expectations and aligning specs with real-world installation standards, projects are more likely to stay on track, pass inspections, and deliver consistent results—whether it's a community park, school playground, or high-profile destination site. Specifications aren't just paperwork—they're part of the foundation that supports a successful surface.

A BRIEF HISTORY OF SAFETY SURFACING

The evolution of play surfacing in the U.S. is rooted in safety concerns that emerged alongside the rapid industrialization of cities. Early playgrounds featured towering metal structures, often installed over sand, clay, or packed cinders—materials that offered little in terms of impact protection.[8,9]

By the 1940s and 50s, asphalt became the default playground surface, with little regard for fall zones.[9,10] Early rubber products introduced by Firestone and Goodyear in the 1950s began paving the way for modern surfaces, though their initial designs lacked sufficient attenuation.[9,11]

In the 1970s, public awareness grew following a 1972 FDA (Food and Drug Administration) report highlighting widespread playground hazards[12] and a 1978 NEISS (National Electronic Injury Surveillance System) study that identified falls as the leading cause of serious playground injuries.[13] These findings laid the groundwork for safety standard development.

The 1980's – 90's saw major progress. The NRPA (National Recreational and Park Association) and the Consumer Product Safety Commission (CPSC) began developing guidelines for playground surfacing. CPSC's 1990 impact attenuation study and subsequent collaboration with ASTM set critical height benchmarks for loose-fill surfaces.[14] ASTM's F08.63 subcommittee was formed in 1986 to oversee surface system safety, helping unify testing and compliance standards.[15] ASTM F1292 was introduced in 1991 to formally define performance criteria for impact attenuation.[16]

The 2000's brought ongoing refinements and expanded standards. ASTM introduced standards and guides for various surfacing types—EWF,[17] loose filled rubber,[18] PIP rubber,[19] and synthetic grass[20]—each designed to improve accessibility, reduce injury risk, and provide more reliable testing metrics.

In recent years, ASTM efforts expanded beyond playgrounds. ASTM F3101 mentions the importance of obstacle-free surfacing appropriate for the fall height of the outdoor adult fitness equipment.[21] Surfacing in aquatic environments, dog parks, and multigenerational fitness trails has also become more specialized.

Today, surfacing is recognized not only for its role in fall safety but also for its potential to enhance play value, inclusion, aesthetics, and overall user experience. Through continuous improvement of standards and surfacing technologies, play and recreational environments have become more engaging, inclusive, and safer for people of all ages and abilities.











SURFACING TYPES, STANDARDS & CRITERIA

Specifying the correct playground surfacing involves more than choosing a surfacing type or color —it means selecting a system that meets rigorous standards for performance, accessibility, and long-term usability. Standards and guidelines provide the framework to assess, compare, and validate surfacing materials across playgrounds, fitness zones, trails, and other recreational environments.

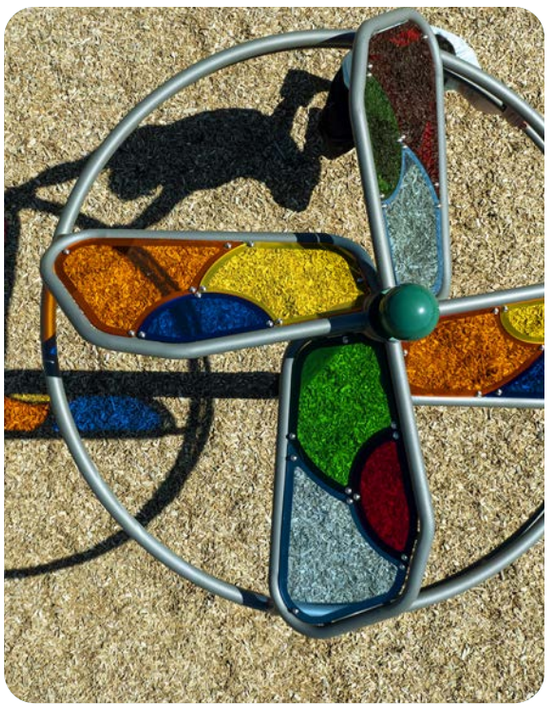
TYPES OF RECREATIONAL SURFACING SYSTEMS

Designing a recreational space involves careful consideration of the surfacing system beneath your users' feet. Whether you're building a playground, trail, fitness area, or multipurpose recreation zone, the surface plays a crucial role in aesthetics, user experience, compliance, maintenance, inclusion, and longevity. Below is an updated overview of the major surfacing types available for public recreational settings.

1. Engineered Wood Fiber (EWF) – Natural, Cost-Effective Loose-Fill

Engineered Wood Fiber remains a leading option for budget-conscious play environments that still require compliance with ASTM standards for impact attenuation and accessibility. Unlike garden mulch or bark chips, EWF is manufactured to meet specific particle size and purity standards that allow the fibers to "knit" together, forming a moderately stable surface suitable for mobility devices when properly compacted and maintained. It is often used in schoolyards, public parks, and community-built play areas, especially where a natural look is desired.

The appeal of EWF lies in its lower initial cost and volunteer-friendly installation. It allows funds to be stretched toward equipment or additional site features. However, it requires routine raking, leveling, compaction, and periodic top-offs to maintain critical depth and accessibility. In high-use areas, supplemental wear mats are advised to reduce displacement. While less supportive for mobility devices compared to unitary options, EWF can comply with accessibility standards if installed and maintained to specification, offering an approachable entry point for inclusive designs on a limited budget.



Benefits:

- High-performance impact attenuation, especially for higher fall heights
- Budget-friendly and often allows funds to go further in equipment selection
- Provides a natural look that blends well with wooded or park environments
- Can support spontaneous, loose-part play opportunities
- When properly installed and maintained, meets accessibility standards

Considerations:

- Requires ongoing raking, compaction, and top-offs to maintain depth and accessibility compliance
- Wear mats recommended in high-use areas (e.g., under swings and slide exits)
- Less ideal for people with mobility impairments due to higher variability of the surface particles that may affect the degree of firmness and stability along the accessible route and at clear ground spaces for accessible play components

2. Loose-Fill Rubber – High Performance with Color Options



Loose-fill rubber is a high-performance, impact-absorbing material made from recycled rubber, offering a vibrant and sustainable alternative to organic loose-fill options. Its shock-absorbing properties outperform most loose-fill systems, and it is particularly effective in areas requiring higher fall height protection. Available in a range of colors, it provides visual appeal and design flexibility, especially when contained within playground borders or use zones.

While loose-fill rubber resists moisture, insects, and mold, accessibility is a challenge. Frequent raking and leveling is necessary to maintain a consistent depth, and over time,particle displacement can make it difficult for persons using mobiility devices to traverse. It is best suited for use in areas outside of the required accessible routes. It is not recommended for toddler areas due to potential ingestion concerns. Still, as a recycled material with strong impact performance and visual play value, it offers a compelling balance between sustainability and function in public play and trail settings.

Benefits:

- High-performance impact attenuation, especially for higher fall heights
- Low-maintenance and long-lasting
- Color options add visual interest and can enhance theming

Considerations:

- Can scatter outside use zones without containment
- Accessibility is limited even when actively maintained and compacted.
- Not recommended for toddler zones due to ingestion risk



3. Poured-in-Place (PIP) Rubber – Seamless Design Meets Compliance

Poured-in-place rubber is a premier surfacing system known for its seamless appearance, high level of accessibility, and long-term durability. It consists of two layers: a resilient base layer for impact attenuation and a wear layer that can be color-customized and embedded with inlays, logos, or play patterns. This makes PIP an ideal choice for inclusive playgrounds, fitness spaces, and visually engaging public environments where accessibility and aesthetics are top priorities.

Though PIP may carry a higher upfront cost due to many determining factors, its low maintenance needs and extended lifecycle often justify the investment. It supports nearly unlimited creative freedom—from vibrant sensory paths to detailed graphics that encourage learning and social play. Importantly, PIP provides consistent compliance with accessibility and ASTM standards and does not displace with use, making it a reliable, high-performance surface. Installation must be completed by trained crews, with environmental factors like temperature and humidity carefully managed for optimal curing and bond strength.

Benefits:

- Seamless surface ideal for users of all abilities
- Fully customizable for color, patterns, and inlaid graphics (e.g., hopscotch, nature shapes, donor logos)
- Lower maintenance and durable across high-use environments
- Strong performer in both play and fitness applications

Considerations:

- Requires professional installation and skilled labor
- Potential higher upfront cost but reduced maintenance over time
- Sensitive to installation conditions (temperature and humidity)

4. Bonded Rubber – Textured, Natural Aesthetic



Bonded rubber offers a more naturalistic alternative to PIP, combining the benefits of unitary surfacing with a softer, mulch-like aesthetic. This one-layer surface is created on-site by blending shredded, often color-treated recycled rubber particles with urethane binders, forming a continuous and accessible surface throughout a site. The texture and color palette often emulate forest trails or organic settings, making bonded rubber particularly well-suited for nature-themed playgrounds, pedestrian trails, and park settings.

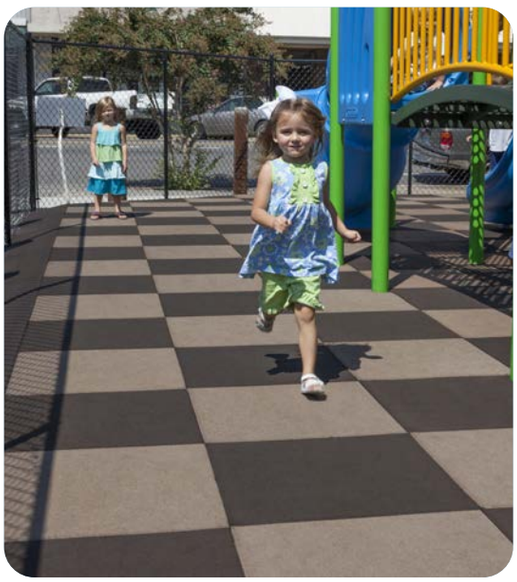
This surface is often preferred in projects where a lower installation cost or quicker timeline is desired without sacrificing accessibility. Though less customizable in design than PIP due to its textured appearance and larger particle size, bonded rubber can still be laid in blended color shades to define zones or add visual interest. It supports accessibility and performs well in sloped or contoured areas. However, like other unitary systems, it requires a proper sub-base and professional installation for optimal results.

Benefits:

- Good accessibility for persons using mobility devices
- Natural look
- Lower installation cost than PIP; quicker install timeline
- Made from recycled content

Considerations:

- Limited design versatility compared to PIP due to texture
- Skilled labor and professional install
- Best used where aesthetics and accessibility intersect (e.g., play trails, themed parks)



5. Rubber Tiles – Durable and Modular

Rubber tiles are a modular unitary surfacing solution that provides consistent impact attenuation, easy repair, and strong accessibility. Typically manufactured from recycled or virgin rubber in a controlled environment, these tiles offer uniformity and durability, particularly in high-use areas. They are installed with adhesives or interlocking systems and can include tapered edges or ramps to provide smooth transitions across use zones.

Rubber tiles are especially useful in installations where speed, repeatability, or easy future access to subsurface utilities is a concern. Damaged tiles can be individually replaced without disrupting the entire surface. This feature, combined with the product's porous characteristics, makes tiles a practical choice for both indoor and outdoor play environments. However, successful tile systems require precise installation to avoid gapping or movement over time, and visual design capabilities are generally more limited than with PIP.

Benefits:

- Excellent accessibility and consistent performance
- Modular design allows for easy maintenance
- Ideal for smaller footprints or indoor settings

Considerations:

- Tile seams can separate over time if not installed correctly
- Limited customization compared to PIP
- Requires stable sub-base for best results



6. Synthetic Turf Systems – Blending Natural Looks with Engineered Performance

Synthetic turf surfacing has evolved to serve a wide range of sites, from playgrounds to sports fields to landscaped areas across residential, commercial, school, and municipal/government projects. When paired with an appropriate shock-attenuating layer, playground turf systems can meet ASTM F1292 impact attenuation and still deliver the lush, consistent look of natural grass. Whether using turf in multi-sport training zones, courtyards, or high-use lawns, careful decisions around base prep, drainage, and infill selection are needed, especially when durability and temperature control matter. For play spaces, designers should also confirm accessibility performance (e.g., ASTM F1951[7]) and detailing at transitions and routes of travel, helping create a more inclusive, lower-maintenance surface that aligns with the project's aesthetic and performance goals. When synthetic turf systems are used on required accessible routes, accessibility standards require the pile height not to exceed ½ inch.[22]

Turf systems are also increasingly specified for multi-use fields, courtyard recreation zones, and pet-friendly spaces. For dog parks, specific turf products include antimicrobial technology, flow-through backings, and specialized infill options designed to manage odors and increase durability. For playgrounds, the infill and pad systems can be optimized for fall zones and accessible routes. Turf requires no mowing or irrigation and provides a consistent, soft surface across climates and site conditions

Benefits:

- Soft and natural appearance that stays green year-round
- Options for shock pads or recycled rubber layers that help meet ASTM F1292 requirements
- Customizable fiber densities and pile heights for specific applications (e.g., playgrounds vs. area of sport activity vs. dog parks, service animal relief areas)
- Requires no mowing, watering, or chemicals
- Available antimicrobial and pet-specific systems for dog parks
- Provides a consistent unitary surface that is usable by persons using mobility devices

Considerations:

- Limited customization compared to unitary rubber options
- Requires professional installation over compacted base
- Maintenance includes brushing and occasional infill top-offs especially in high use areas
- Site-specific drainage considerations must be addressed during design

7. Other Loose-Fill Options (Sand, Pea Gravel) – Natural but limited in compliance

These traditional loose-fill materials are most often seen in older playgrounds, sandboxes, or natural play areas, and are typically chosen for their low material cost and familiar tactile experience. They do not meet accessibility standards and can become compacted, uneven, or even hazardous in wet or high-traffic conditions.

Sand and gravel surfaces are no longer considered compliant for most public playground environments. Sand can harden in wet climates, limiting fall attenuation, and both materials can pose ingestion or choking hazards. However, they may still be appropriate in raised sand tables or ground level play areas designed for digging. Sand and pea gravel surfaces should not be used on accessible routes that are provided to and through the space. These materials require frequent inspection, leveling, and containment to remain clean, usable, and visually appealing. See Quick Reference Guide in the back of this book.



Benefits:

- Low upfront cost
- Encourages sensory play and construction-based activities

Considerations:

- Do not meet accessibility standards for accessible routes
- Can compact, erode, and become abrasive or hazardous when wet
- May present ingestion or choke hazards for young children
- Limited impact attenuation

SURFACING QUICK REFERENCE CHART

	Sand and Pea Gravel	Engineered Wood Fiber	Shredded Rubber
Common Applications	• Sand boxes	• Playgrounds • Dog parks • Landscapes • Trails	• Playgrounds • Landscapes • Trails
Advantages	Low cost, easy to install, readily available	Low cost, easy to install, good drainage, readily available, blends in to natural settings	Easy to install, good shock absorbency, no microbial growth
Disadvantages	Forms hardpan, does not meet accessibility guidelines, difficult to clean, attracts animal waste, can be ingested by children and dogs	Holds moisture, decomposes, hides trash, subject to mold, kicks-out easily	May soil clothes, can be thrown, hides trash, may be swallowed, spreads easily (kick-out)
Primary Benefit	• Low installation cost	• Low installation cost	• Highest impact attenuation ratings • Soft-touch, splinter free
Fall Height	5'-6'	Up to 12'	Up to 12'
Installation	Owner or professional installation	Recommended professional installation	Recommended professional installation
Meets ASTM F1951*	No	Yes	Yes
Color Options	N/A	N/A	Some
Design Customization	N/A	N/A	N/A
Maintenance	Frequent	Frequent	Frequent
Life Cycle	★★★☆	★☆☆☆	★★☆☆
Easily Contained	No	No	No
Initial Cost	$	$	$$
Lifetime Cost	$$$	$$$	$$$

UNDERSTANDING COMPLIANCE, ATTENUATION AND PERFORMANCE

While no surface can eliminate all injuries, particularly from falls, compliant and properly installed and maintained surfacing can help reduce the likelihood of life-threatening head injuries and meet accessibility standards that support access for users of all abilities.[23]

Impact Attenuation & Fall Height Requirements

Any surface installed beneath playground equipment must be tested and rated to cushion falls. The key performance benchmark is ASTM F1292, which evaluates how a surface responds to an impact using two critical measures:[6]

- G-max: The maximum acceleration experienced during impact.
- HIC: A combined measure of force and duration used to assess head trauma risk.

Materials are rated by their critical height, the maximum fall height from which a life-threatening head injury is not expected to occur, based on test data. All equipment manufacturers must provide the fall height of their components, and surfacing must be selected to match or exceed that height.

Tip: Field testing as described in ASTM F3313 (not just lab results) is recommended post-installation to confirm that the surface continues to meet ASTM F1292 criteria over time.[24]

Attenuation Layers & Compliant Surfacing Options

When designing play and recreation environments, the visible surface is only part of the performance story. What sits beneath it can be just as important. Attenuation layers—shock pads, rubber underlayment, or site-built cushion courses—are designed to absorb impact energy and distribute it more evenly across the system. Their role is part of the surfacing system, ensuring that equipment fall-height requirements are met while extending the service life of the top layer. For landscape architects and playground designers, understanding attenuation systems provides greater control over performance outcomes. Instead of over specifying thick wear layers, attenuation layers allow for leaner designs that still meet ASTM standards. They also make it possible to adapt surfacing to different site conditions, from high-traffic urban playgrounds to shaded community trails. At their best, attenuation systems give you design flexibility without compromising safety or compliance.

The inclusion of attenuation layers has three primary impacts: safety, cost efficiency, and durability. From a safety standpoint, these layers reduce the peak forces experienced in a fall, helping lower the risk of serious head injuries. They are particularly valuable under tall climbers and swings, where traditional surfaces alone may not achieve the necessary performance. From a budget perspective, attenuation layers allow designers to reduce the thickness of the wear surface above them, lowering material costs while still meeting compliance. Over the long term, they help distribute impact across a wider area, which means less compaction and slower degradation of the visible surface. This not only prolongs the functional lifespan of the surface but also reduces maintenance interventions. For designers, attenuation systems represent an opportunity to move beyond minimum compliance and toward more resilient, adaptable surfaces. By integrating attenuation layers strategically, projects achieve a balance of upfront cost control and long-term value.

Types Of Attenuation Layers

There are several categories of attenuation systems, each with unique benefits. Shock pads and underlayment panels are pre-manufactured sheets of foam, rubber, or composites installed beneath turf, tile, or poured-in-place rubber. Their modularity allows for consistent performance and easy field verification, making them a favorite for designers who need reliable results across multiple sites. Another common approach is the use of rubber buffings or styrene-butadiene rubber (SBR) granules, bound with urethane to form a resilient base layer. This attenuation option, often used with PIP, is cost-effective and widely available, giving communities a tested option that has been used successfully for decades. Rubber + urethane systems extend this concept by mixing rubber particles directly with binder and applying them on-site in varying thicknesses. This method allows a designer to “dial in” performance, installing thicker material under critical fall zones and thinner layers in circulation areas, ensuring compliance without unnecessary material costs. Finally, resilient mats or hybrid systems combine the benefits of unitary and modular approaches, providing added protection in high-wear zones such as slide exits and swing bays. Together attenuation layers and wear layers provide a toolkit for customizing unitary surfacing to the specific needs of the project.

Compliance & Testing Considerations

Every attenuation system must be evaluated within the framework of current standards. ASTM F1292 remains the baseline, defining the impact attenuation criteria for G-max and Head Injury Criterion (HIC) values.[6] Importantly, this testing is not just theoretical: ASTM F3313 requires verification in the field after installation to confirm that the system performs as specified.[24] Attenuation layers must also maintain compliance with the federal accessibility requirements, including ASTM F1951, which evaluates firmness and stability for mobility devices.[7] A shock pad or cushion course that compromises accessibility is not acceptable, no matter how strong its fall performance may be. For this reason, specifiers should always request test data that reflects the full surfacing system as installed—surface plus attenuation layer—rather than just individual components tested in isolation. Drainage compatibility is another consideration. Some attenuation layers can trap water or interfere with the slope of the base if not properly detailed, leading to premature failure. Finally, long-term compliance matters: attenuation materials, particularly SBR and buffings, can compact or degrade over time, so periodic field testing should be specified to verify ongoing performance. The key is to treat attenuation layers not as hidden add-ons, but as engineered components with their own compliance profile.

In addition to specifying attenuation systems, a specifier may consider requesting testing for per- and polyfluoroalkyl substances (PFAS) certification, heavy metals content, and polycyclic aromatic hydrocarbon (PAH) levels when applicable. PFAS Certification Testing screens for commonly regulated PFAS in surfacing components and binders, supporting informed material selection. Heavy Metals Content Testing measures total and extractable metals in wear and cushion layers, ensuring materials meet project-specified limits and procurement requirements. PAH Testing evaluates PAH levels in rubber and binders, aiding in compliance with project or jurisdictional thresholds.



Design & Specification Tips

For designers and specifiers, attenuation layers represent both an opportunity and a responsibility. They allow for systems that are safer, longer-lasting, and often more cost-effective—but only if specified clearly and managed carefully. Specifications should match attenuation thickness directly to the fall height of the equipment or structures in the use zone, rather than relying on generic values. Because attenuation is part of a system, the surfacing and the pad or cushion course should be written together in the specification, preventing substitutions that could compromise performance. Field testing should be required after installation to ensure the combined system achieves ASTM F1292 results, not just lab-tested numbers.[6,24,25] Compatibility with sub-base and drainage design should also be explicitly noted, since standing water beneath an attenuation layer can void warranties and undermine compliance. In addition, maintenance expectations should be considered upfront, particularly for rubber buffings or SBR layers that may settle over time. The most defensible specifications document the system as a whole: surfacing layer, attenuation course, and compacted base. When written this way, attenuation is not an afterthought—it is a structural element of the playground's safety system.

Accessibility & Surface Performance

Compliant surfacing must support not only safety but also accessibility for people with disabilities. The 2010 Americans with Disabilities Act (ADA) Standards[22] for Accessible Design and the Architectural Barriers Act Accessibility Standards establish minimum technical provisions for accessible routes to and through play and recreation environments, including cross and running slope, firmness, stability, slip resistance, openings, and changes in level.[26]

The ASTM F1951 is a lab-based test method used to evaluate whether a mobility device (such as a wheelchair) can be propelled over the material in both straight and turning motions.[7] While this test is completed in a lab, field testing upon installation and throughout the life cycle of the surface system is vital to ensure that the surface system remains accessible and compliant. The Rehabilitation Engineering & Technology Society of North America (RESNA) has developed a portable test method for the Instrumented Surface Indenter (ISI) to evaluate surface systems for firmness and stability in the field or laboratory setting.[27] The playground design team is encouraged to reference the RESNA test method for firmness and stability to verify the surface has been installed and maintained to criteria compliant with the federal accessibility.

Accessibility Considerations:

- Firm, stable, and slip resistant
- Free of openings greater than a ½", or level changes greater than a ½"
- Design play area accessible routes with minimal slopes (<6.25% runnnig slopes and <2.08 cross slope maximum.)

Tools like the Portable ISI, digital levels, and surface inclinometers may be used during field inspections to verify accessibility compliance.



STANDARDS AND GUIDELINES

As you evaluate surfacing types and options, use these standards as both a technical foundation and as a planning guide. A link to the American Society for Testing and Materials (ASTM) website to obtain the full standard is detailed in the *Resources* section of this guidebook.

Standard	Description	What It Covers	Why It Matters
ASTM F1292	Specifies impact attenuation performance for surfacing as a laboratory or field test	Shock absorption (G-max/ Head Injury Criterion); defines critical height	Required for all fall zones
ASTM F3313	Specifies testing surface in the field to compare performance to laboratory test	Shock absorption (G-max/ Head Injury Criterion); performance testing in the field	Could be required by owner to verify playground surface installation performance after installed and for future surface performance testing
ASTM F1951	Measures accessibility for mobility devices. Includes straight/turning propulsion tests	Accessibility	Required for compliance with the accessibility standards
ASTM F2223	A meta-guide summarizing how all related surfacing standards interconnect	A guide to surfacing-related standards	Helps specifiers connect the dots
ASTM F2479	Details installation and maintenance for poured-in-place rubber	Specification for poured-in-place surfaces	Must-read for poured-in-place surfacing projects
ASTM F3012	Sets standards for loose-fill rubber particles and performance	Loose-fill rubber performance and quality	Ensures product consistency and no hazardous metals, wire, or sharp points
ASTM F2075	Ensures engineered wood fiber meets particle size, purity, particle size, purity from tramp metals	Engineered wood fiber specs (particle size, purity)	Ensures engineered wood fiber is consistent to fiber size spec for firmness & stability
ASTM F1487/ F2373	Defines equipment use zones and fall heights	Equipment guidelines: defines fall height and use zones	Impacts surfacing decisions under equipment
ASTM F3101	For outdoor fitness equipment surfacing and placement	Outdoor fitness equipment specs	Useful for fitness trails and stations

ADDITIONAL STANDARDS & GUIDELINES

- CPSC Public Playground Safety Handbook (Publication 325)
  - Last updated in 2025, it offers depth guidelines, material suggestions, and fall-height considerations; widely used by parks departments and installers.
- 2010 ADA Standards for Accessible Design and/or the Architectural Barriers Act Accessibility Standards
  - Federal law requires accessibility for all new construction and alterations of existing facilities including playgrounds and recreation facilities.
  - State and local building codes should be referenced in the event those provisions are amended, changed, or more stringent than voluntary standards like ASTM and CPSC. State and local building codes are typically based on an edition of the International Building Code (IBC) and the A117.1 accessibility section published by the International Code Council (ICC).[28]
- International Play Equipment Manufacturers Association (IPEMA) Certification
  - Requires third-party product validation for manufacturers using independent testing to verify to ASTM standards. Note: Not all compliant products are IPEMA-certified, and not all IPEMA members participate in the program.

Learn more about these organizations and how to receive copies of the standards and guidelines in the *Resource* section of this guidebook.

For all Surfacing types, ask surface suppliers to provide:

- Documentation for applicable standards specified in your project.
- Installation instructions and warranty terms
- IPEMA certification status (if applicable)
- Maintenance requirements and re-testing protocols
- Field verification after installation for surfacing impact performance and for accessibility, as it is just as important as selecting the right product upfront.
- Up-to-date ASTM compliance certificates for both ASTM F1951 and F1292 version dates (e.g., ASTM F1292-23) to ensure current testing methods are used.

QUICK TIPS FOR COMPLIANCE

- Match surfacing critical height to the maximum fall height of any equipment.
- Verify surfacing systems meet both impact and accessibility standards.
- Require post-installation field testing for ASTM F1951 and ASTM F 1292 to ensure compliance and for surface performance per ASTM F3313.
- Confirm sub-base and drainage are compatible with surfacing system and impact performance.



Beneath every great recreational space is an **invisible foundation** of performance, compliance, and thoughtful design.



PLANNING FOR PERFORMANCE: THE IMPORTANCE OF SITE PREPARATION

Whether you're designing a playground, fitness zone, pedestrian trail, or multipurpose recreation area, proper site preparation is essential for surfacing performance and long-term durability. This section outlines critical steps that support successful installation and help ensure the surface performs as intended—visually, structurally, and functionally. Specifiers and construction teams play a vital role in ensuring the surface is installed over a well-prepared base that matches the material's specific needs and complies with relevant standards.

SUB-BASE TYPES AND THEIR IMPACT

The surface system is only as stable as the foundation underneath it. The sub-base provides critical structural support and must be carefully selected based on the type of surface, expected use, and local site conditions. The most common sub-base used in playgrounds and recreational areas is compacted crushed stone, typically specified at 95% compaction to provide a stable, drainable layer that supports both loose-fill and unitary surfaces. This type of base is cost-effective and allows water to move away from the surface, helping to prevent pooling or frost heave.

For high-wear areas, or when using modular products like rubber tiles or synthetic grass with shock pads, concrete or asphalt bases may be preferred. These hard surfaces offer consistent elevation, are less prone to shifting, and can provide additional durability for surfaces expected to handle wheeled traffic or heavy footfall.

In some trail or natural environments, engineered fill or stabilized soil may be specified. These alternatives may be suitable where impervious surfaces are not desired but still require compaction and moisture control to remain functional.

Ultimately, the sub-base must be matched to the surfacing system being used. A mismatch here is one of the most common causes of early failure in recreational surfacing projects. Confirming sub-base material, compaction, and thickness with both the surfacing manufacturer and installer before construction begins is essential to ensure performance and warranty compliance.

Summary Of Types:

95% Compacted Stone Aggregate (most common for playgrounds):

- Cost-effective and allows drainage
- Compatible with unitary and loose-fill materials

Engineered Fill or Stabilized Soil (in trails or remote sites):

- Requires compaction and moisture control
- Appropriate for certain low-impact recreational paths

Concrete or Asphalt (for bonded/tile/synthetic grass systems):

- Provides a solid, durable surface
- Required for many modular or synthetic installations
- Ensure control joints are factored into the design

REMEMBER:

- Always verify the required base type with the surfacing manufacturer.
- Poor base prep can lead to settling, cracking, or water pooling of the finished product.



DRAINAGE, SLOPE, AND GRADING

Poor drainage is one of the leading contributors to surface degradation and failure. Ensuring that water moves efficiently away from the surfacing—both on the surface and within the sub-base—is essential. During the design phase, it's important to incorporate proper slope and grading plans, especially in climates with seasonal rainfall or freeze-thaw cycles.

For surface grading, general recommendations include a 1%–2% cross slope to allow surface water to run off without pooling. Sub-grade slope is typically set at around 3%, directing water away from the use zone. For playgrounds, splash pads, and other applications with unitary surfacing, internal drainage solutions such as weep holes, composite mats, or trench systems may be used underneath the surface to enhance water movement.

Designing for slope is not only about drainage. It's also about meeting accessibility standards.[22] Surfaces should be firm and stable under load, have openings less than a ½ inch, no level changes greater than ½ inch and properly sloped (less than/equal to 6.25% running slope within playgrounds, less than/equal to 2.08% cross slope) in order to be usable by people with mobility devices. Running slopes of 5% or less are required on accessible routes outside the playground before being treated as a ramp. These requirements apply to both the finished surface and the base beneath it, as a surface cannot correct a flawed sub-grade after installation.

Whether working on a playground, a pedestrian trail, or a fitness court, the design team and construction contractor must coordinate early and often to ensure drainage is effectively addressed while staying within required running and cross slopes. Standing water on or beneath a surface can void warranties, compromise accessibility, and shorten the lifespan of even the highest quality products.

Slope Guidance Notes:

- Surface cross slope: typically 1–2% cross slope for water runoff
- Sub-base slope: recommended at 3% minimum away from equipment
- Ensure all surfaces meet technical provisions for slope in the accessibility standards (≤6.25% running slope; and ≤2.08% cross slope in playgrounds along accessible routes and at clear floor space for accessible play components. Accessible routes outside playgrounds have different running and cross slope requirements.)

Drainage Recommendations:

- Permeable stone layers and geotextiles for loose-fill surfacing
- Slot drains, weep holes, or composite drainage mats under unitary surfacing
- Avoid depressions where water can collect
- Incorporating drainage planning into construction drawings and contractor submittals is strongly encouraged.

CONSTRUCTION SEQUENCING AND COORDINATION

Surfacing installation is not an isolated step—it is an integrated part of the overall construction process. For that reason, timing and coordination are crucial. Installing surfacing too early can result in damage from ongoing construction traffic. Installing it too late, or in poor weather conditions, can jeopardize curing or material performance.

Ideally, the surfacing installation occurs after all equipment, shade structures, curbing, and edging have been securely placed and site grading is complete. At this stage, the area should be clean, dry, and free from any additional vehicular or equipment access unless explicitly allowed by the installer.

Subcontractor sequencing should be mapped out to avoid overlaps that might lead to contamination or damage. For example, setting concrete footers, compacting stone bases, and installing geotextiles must be done with adequate lead time so surfacing crews can begin work with minimal interruption. If other trades are working nearby, fencing and clear communication help ensure the surfacing remains protected during and after install.

Weather is another critical factor—especially for unitary materials like PIP rubber, which require specific temperature and humidity conditions for proper curing. Project leads should work closely with surfacing providers to determine temperature thresholds and schedule installation accordingly.

Ultimately, construction coordination can be the difference between a clean, on-time project and a costly rework. Early engagement with surfacing specialists is recommended to align expectations and ensure readiness at every step.

Tips For Installation:

- Coordinate heavy equipment traffic to prevent surface compaction or contamination
- Complete equipment installation and fencing before surfacing begins
- Confirm site access for surfacing crew and staging area for materials
- Avoid scheduling surfacing during extreme weather windows
- Use temporary fencing to secure areas after surfacing is applied—especially for PIP or synthetic turf that requires curing time



REGIONAL CLIMATE CONSIDERATIONS

Every site is unique, and climate plays a significant role in surfacing system performance. From temperature fluctuations to freeze-thaw conditions and heavy rainfall, regional factors should guide material selection, installation timing, and ongoing maintenance planning.

In cold climates, sub-grade materials should be designed to resist frost heave. Freeze-thaw cycles can cause sub-base expansion, which may crack or lift a surface, especially if drainage is poor. In these regions, open-graded stone and geotextile separators may be necessary to allow water to drain before freezing occurs.

In hot and arid climates, intense ultraviolet radiation (UV) exposure and high surface temperatures can degrade materials and increase risk of heat-related issues. Selecting UV-stabilized binders or lighter surface colors can help mitigate these issues.[29] Some synthetic grass systems can be specified with infills that lower surface temperature, making them more suitable for sunny environments.[30]

In areas with frequent rain or flooding potential, subsurface drainage becomes even more critical. Use of impermeable materials in low-lying areas can trap water and lead to surface failure. Consider site-specific engineering assessments to determine the best combination of base, drainage, and material type.

Designing for performance means planning beyond initial installation. Regional climate impacts not only how a surface performs, but how often it may require cleaning, maintenance, or repair.

Quick Tips For Weather

COLD WEATHER REGIONS:

- Avoid installing poured surfaces, tiles, and turfing below 45˚F
- Consider freeze-thaw stability and base drainage to prevent heaving

WET CLIMATES:

- Ensure moisture-tolerant materials or specify added drainage
- Use elevated edging or berms to prevent washout of loose-fill surfacing

HOT/DRY CLIMATES:

- Choose surfacing with UV protection and plan for surface temperature control
- Select light colors or shaded areas for play zones when possible

Consult with manufacturers for region-specific surfacing and base prep recommendations.

SITE PREPARATION CHECKLIST

To support communication between design teams, contractors, and installers, a detailed site preparation checklist can be an invaluable tool. This checklist ensures critical steps are verified before surfacing crews arrive onsite. It reduces the risk of miscommunication, delays, and costly fixes after the fact.

A comprehensive checklist should include confirmation of sub-base material and compaction, grading and drainage completion, equipment and concrete footers installation, edge containment readiness, and weather conditions suitable for installation. For loose-fill surfacing, the checklist should also confirm the presence of geotextiles and containment curbs. For unitary materials, it should validate surface cleanliness, base slope, and staging access.

Establishing a clear point of responsibility for each item—whether it's the general contractor, site superintendent, or surfacing crew—ensures accountability. This checklist also provides documentation that can be filed with post-installation compliance and warranty records.

ITEM	VERIFIED BY	NOTES
Sub-base compacted to 95%	Contractor	ASTM D698 test complete
Drainage plan executed	Site Engineer	Includes slope and trench detail
Edge containment in place	Installer	Curbs, forms, or borders
Geotextile installed (if applicable)	Installer	Required for loose-fill or turf
Equipment and concrete footings installed	General Contractor	Confirmed final heights
No standing water or debris	Foreman	Site ready for surfacing crew
Weather conditions meet install criteria	Crew Leader	Forecast reviewed, materials acclimated

The longevity of any recreational surface is determined long before installation. When base, drainage, and sequencing are aligned, **performance becomes predictable**.



SPECIFYING AND PURCHASING WITH CONFIDENCE: PARTNERS, PRODUCTS, AND PROCESS

As we've established, safety surfacing is not just a finishing touch; it is a critical component that directly impacts user safety, accessibility, and long-term project success. For specifiers, designers, and general contractors, the process of selecting the right surfacing can be daunting. The stakes are high: the wrong choice can lead to non-compliance with federal and local regulations, costly maintenance, and even legal liability. This is why purchasing with confidence—through informed decisions about partners, products, and processes—is essential.

The demand for high-performance recreational surfacing has grown significantly in recent years, driven by evolving safety standards, increased public awareness, and a broader push for inclusive and sustainable design. Whether the project involves PIP rubber, rubber tiles, synthetic turf, EWF, or loose-fill rubber, the selection process must go beyond aesthetics and cost. It must encompass a deep understanding of performance metrics, compliance requirements, and the long-term implications of each material choice.

WHY SPECIFICATIONS MATTER

Properly specifying recreational safety surfacing is more than just choosing a product — it's about protecting the integrity of your design, meeting industry standards, and ensuring the long-term safety and accessibility of the space. Whether you're an experienced specifier or just beginning to incorporate surfacing into your plans, this section provides the guidance needed to write strong, defensible specifications that deliver lasting results.

The specification is one of the most powerful tools a specifier or designer has to protect the integrity of their vision and ensure that the final constructed space performs as intended. In the context of recreational surfacing, a strong specification not only communicates design expectations, but also establishes minimum performance standards, material quality, installation procedures, and long-term durability benchmarks. Without clear, enforceable surfacing specifications, even the most thoughtfully designed spaces can fall victim to substitutions that may not meet safety standards, accessibility requirements, or user expectations. Surfacing is especially vulnerable to value-engineering cuts, which may reduce upfront costs but can compromise the overall performance, longevity, and inclusivity of the space. This section is designed to provide specifiers and design professionals with the tools needed to confidently write and defend surfacing specifications that align with best practices and protect public use spaces for years to come.

Specifications are your blueprint for performance. Without clear, enforceable language, products may be substituted with inferior options that compromise safety, fail prematurely, or fall out of accessibility compliance.

Recreational surfacing specifications typically fall under Construction Specification Institute (CSI) MasterFormat Division 32 18 16 – Playground Protective Surfacing. Specifications are often written in three parts, each addressing a critical component of the project:

- **Part 1: General** – Outlines applicable standards (such as ASTM F1292 for impact attenuation and ASTM F1951 for accessibility), warranty requirements, submittals, project mock-ups, and quality assurance provisions. This section also describes installer qualifications and expectations for pre-installation coordination.
- **Part 2: Products** – Describes acceptable surfacing types (e.g., PIP rubber, EWF, tiles, bonded rubber, or synthetic grass) and outlines required material properties such as critical fall height ratings, tensile strength, drainage performance, UV resistance, and compliance with third-party certifications like IPEMA. This is where product-specific requirements must be detailed clearly to avoid ambiguity or misinterpretation.
- **Part 3: Execution** – Covers the methods and conditions of installation, including sub-base preparation, thickness and depth of surfacing material, curing time, and post-installation testing. Field verification of HIC and G-max ratings for unitary surfacing may also be required to confirm performance matches lab-tested values.

Understanding and accurately completing each section ensures clarity across all phases of design, bidding, and construction—while reducing liability and ensuring the intended user experience is achieved.

PART 1- GENERAL:

- Applicable standards and testing references (ASTM, ADA/ABA, IBC, CPSC)
- Submittals, mock-up requirements
- Warranty and installer qualifications

PART 2- PRODUCTS:

- Acceptable surfacing types and manufacturers
- Performance-based criteria (impact attenuation, permeability, tensile strength)
- Required certification (IPEMA, ISO, etc.)

PART 3- EXECUTION:

- Installation practices and tolerances
- Field testing requirements (e.g., post-install drop testing)
- Maintenance plan submittals

USING PERFORMANCE-BASED LANGUAGE TO GUIDE PRODUCT SELECTION

Rather than relying solely on brand names or proprietary product IDs, a best practice in specification writing is to use performance-based language. This means defining exactly how a surfacing system should perform, rather than simply naming what it should be. For example, instead of stating "PIP surfacing, black base with red EPDM top," you might write:

"Surfacing system shall meet ASTM F1292 performance criteria for a minimum fall height of 8 feet, demonstrate compliance with ADA/ASTM F1951 for accessibility, and maintain a minimum drainage rate of 6 gallons per square foot per minute. System shall be IPEMA certified and include a documented post-installation field test confirming performance."

This approach gives you greater flexibility in product selection while protecting your design intent. It also places the burden of proof on the vendor or supplier to show that their products meets all minimum performance thresholds. Be sure to require documentation such as certified lab testing reports, warranty details, and maintenance requirements to verify claims.

Key performance criteria may include:

- Critical fall height rating (HIC <1000) and Gmax <200
- Accessibility of surface systems under and around playground equipment (ASTM F1951)
- Vertical drainage capacity (e.g., 6–10 gal/sq. ft./min)
- Recycled content or Leadership in Energy and Environmental Design (LEED) contributions
- IPEMA Certification with corresponding/corroborating test data

MINIMIZING RISK THROUGH SUBSTITUTION CONTROLS

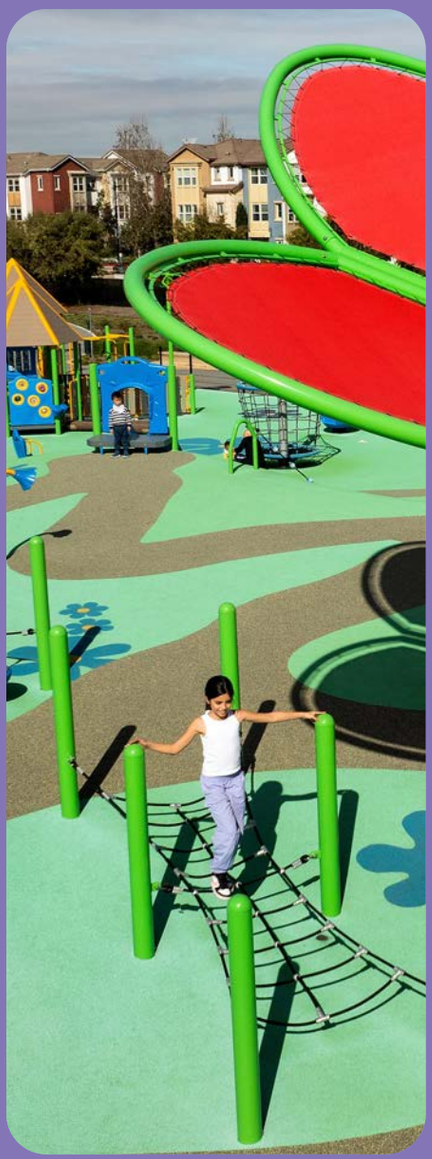
One of the biggest threats to design quality and compliance is uncontrolled product substitution. Without strong language in the spec, contractors may replace the intended surfacing product with an alternative that does not meet the same performance, installation, or accessibility standards. To minimize this risk, include language such as:

> *"No substitutions permitted unless approved in writing by the specifier based on full compliance with all listed performance criteria and certification requirements."*
>
> *"Alternate systems must be submitted at least ten (10) calendar days prior to the bid for evaluation and written approval."*
>
> *"Substitutions must include third-party certifications, test results, and installation references from at least three comparable projects."*

Also consider requiring a performance mock-up of the surfacing system to evaluate material quality and color consistency in advance of the full install. Specifiers may also include provisions for post-installation drop testing to confirm that the delivered product meets the specified fall height attenuation and accessibility performance in the field—not just in the lab.

Without strong spec language, substitutions can creep in — often without equivalent testing, warranty support, or installer experience.

Reliable suppliers will also be able to assist with writing spec-compliant language, offer samples for evaluation, and conduct site assessments to ensure compatibility with the intended design. Collaborating with certified installers and knowledgeable vendors helps ensure that the surfacing system delivers on performance expectations—functionally and aesthetically—over time.



SPECIFYING WITH CONFIDENCE CHECKLIST

CATEGORY	REQUIREMENT
Standards	Meets ASTM F1292 (fall height), F1951 (accessibility ADA), F2479 (material guides), ADA/ABA, IBC, CPSC
Certifications	IPEMA Certified, ISO 9001 Manufacturer,
Product Criteria	Critical fall height rating, drainage specs, UV stability, durability, conformance with the accessibility standards
Installation	Installed by certified or manufacturer-trained professionals per surface manufactures instructions
Maintenance	Provider includes care guidelines, warranty conditions, and inspection templates
Substitution Language	Clear language disallowing substitution unless fully compliant
Documentation	Full product data sheet, test results for ASTM F 1292 and F1951, and maintenance plan submitted
Warranties	Minimum 5–8 years; specify coverage on fading, delamination, cracking, etc.
Mock-Ups	On-site mock-up or small test install may be required
Experience	Minimum 3 years of documented projects in similar settings/climates

As you move forward in your role as a designer or specifier of recreational spaces, remember that the surfacing beneath your design is just as important as the equipment above it. Thoughtfully planned, well-installed, and properly maintained surfacing contributes not only to the performance and durability of the site, but also to the accessibility, inclusivity, and play value of the environment. By working with knowledgeable surfacing suppliers and experienced installers, you can ensure your project meets industry standards, enhances the user experience, and withstands the test of time. Whether designing a vibrant schoolyard, a community trail, or a multigenerational recreation zone, the right surfacing solution will help protect your investment—and more importantly, the people who use it.

WHAT TO LOOK FOR IN A SURFACING PROVIDER

Because surfacing performance is highly dependent on proper material selection, site preparation, and installation, it is essential to work with experienced, reputable suppliers and installation teams. Not all surfacing products are created equal—and even well-manufactured materials can fail prematurely if installed incorrectly or on an unsuitable base. When evaluating surfacing partners, designers should request:

- Documentation of compliance with applicable ASTM standards (e.g., F1292, F1951, F2479)
- Evidence of IPEMA certification
- Installer qualifications, experience, and training records
- Project photos and references from similar environments (e.g., climate zone, size, use case)
- Clear warranty terms, including coverage for installation defects, wear layer failure, and UV degradation
- Certified or factory trained installers

Your surfacing provider is also your partner in ensuring the safety, durability, and compliance of your project, offering expertise, transparency, and a commitment to safety and compliance. This means they should offer not only high-quality materials but also expert guidance, transparent documentation, and responsive customer service. From proven experience and a diverse product portfolio to installation capabilities and post-project support, the right partner can significantly reduce risk and enhance project outcomes. Additional aspects of a reputable supplier include:

Proven Experience and Specialization

- A reputable surfacing provider should have a strong track record in the recreational surfacing industry. Look for companies that specialize in safety surfacing and have completed a wide range of projects similar in scope and scale to yours. Experience in working with schools, municipalities, parks departments, and commercial developers is a good indicator of their ability to meet diverse project requirements.

Product Range and Customization Options

- A quality provider should offer a variety of surfacing options to meet different needs, including PIP rubber, rubber tiles, bonded rubber mulch, synthetic turf, and EWF. Each material has its own advantages depending on the intended use, budget, and aesthetic goals of the project.

Compliance Knowledge and Support

- Safety surfacing must comply with a range of standards, including ASTM F1292 (impact attenuation),[6] ASTM F1951 (wheelchair accessibility),[7] and the CPSC guidelines.[16] A qualified provider should be well-versed in these standards and able to guide you through the compliance process.

Installation Expertise and Project Management

- Even the best surfacing materials can fail if not installed correctly. Look for providers who offer professional installation services or work with certified installers.*

Post-Installation Support and Maintenance Guidance

- A reliable provider doesn't disappear after the installation is complete. They should offer post-installation support, including maintenance recommendations, repair services, and warranty fulfillment.

*ASTM F3699 Standard Guide for Certification of Recreation Area Installers[32] provides guidance for developing and administering certification programs for recreation area installers. It recommends that certified installers be evaluated and certified through programs that adhere to the principles and requirements outlined in this standard.

UNDERSTANDING WARRANTIES, CERTIFICATIONS, AND PRODUCT DOCUMENTATION

Equally important is understanding the warranties, certifications, and documentation that accompany surfacing products. These documents are not just formalities—they are legal and technical assurances that the materials meet industry standards for impact attenuation[6] and ADA accessibility standards.[22] Certifications from organizations like IPEMA provide third-party validation that a product performs as claimed.[31] Warranties, meanwhile, offer insight into the expected lifespan and maintenance requirements of the surfacing, helping stakeholders plan for the future.

A warranty is a manufacturer's or installer's promise regarding the performance and durability of a product over a specified period. In the context of safety surfacing, warranties typically cover issues such as premature wear, color fading, cracking, or loss of impact attenuation.

Certifications provide third-party validation that a surfacing product meets established safety and performance standards. The most recognized certification body in the U.S. for playground surfacing is the IPEMA. To learn more, and find a list of IPEMA certified products, use the link in the *Resources* section in the back of this guidebook.

Comprehensive product documentation is a hallmark of a trustworthy surfacing provider. At a minimum, you should request and review product data sheets, test reports, installation guidelines, maintenance manuals, and compliance statements.

Even with certified products, field conditions can affect performance. That's why post-installation field testing is recommended to verify compliance with ASTM F1292 and F1951.[24]

Purchasing recreational safety surfacing is far more than a transactional decision—it is a strategic investment in the safety, accessibility, and longevity of outdoor spaces. Whether designing a playground, a community park, or multi-use recreational areas, designers and contractors must approach surfacing decisions with a comprehensive understanding of the products, providers, and processes involved.

In an era where public safety, inclusivity, and sustainability are at the forefront of design, the role of surfacing cannot be overstated. Surfaces must not only cushion falls and support mobility devices but also withstand environmental stressors and heavy use. They must be visually appealing, easy to maintain, and adaptable to a wide range of design visions. Achieving this balance requires a thoughtful, informed approach to procurement—one that considers not just the initial cost, but the total lifecycle value of the surfacing solution.

Moreover, the regulatory landscape surrounding recreational surfacing continues to evolve. Standards such as ASTM F1292 and F1951 are regularly updated to reflect new research and technologies. Professionals must stay informed and proactive, working with providers who are equally committed to continuous improvement and compliance. Field testing, ongoing inspections, and maintenance planning are all part of a holistic strategy to ensure that surfacing remains safe and effective for years to come.

Ultimately, purchasing with confidence means making decisions rooted in knowledge, supported by documentation, and guided by trusted partners. It means asking the right questions, demanding transparency, and never compromising on safety or quality. By applying the principles outlined in this course, professionals can deliver outdoor spaces that are not only functional and beautiful but also safer, inclusive, and built to endure.

As you move forward in your projects, remember that the surface beneath our feet is more than just a material—it is a foundation for play, movement, and community.



PLAYGROUND & RECREATIONAL SURFACING SPECIFICATION CHECKLIST

Based on authoritative sources such as the U.S. Access Board and the Consumer Product Safety Commission (CPSC), here is a Specification Checklist for designers and specifiers to use when selecting a supplier for outdoor playground and recreational compliant surfacing:

1. Provider Qualifications

- ☐ Demonstrated experience with similar-scale recreational or playground projects
- ☐ Portfolio of completed installations with references
- ☐ Membership in industry organizations (e.g., IPEMA, NRPA)
- ☐ In-house or certified installation teams
- ☐ Proven track record of ADA and ASTM compliance

2. Product Performance & Compliance

- ☐ Product meets ASTM F1292 (impact attenuation)
- ☐ Product meets ASTM F1951 (wheelchair accessibility)
- ☐ Product meets ASTM F2075 (engineered wood fiber, if applicable)
- ☐ Product meets ASTM F3012 (loose-fill rubber, if applicable)
- ☐ Product meets ASTM F2223 (comprehensive surfacing guide)
- ☐ IPEMA certification for all surfacing materials
- ☐ Field test results available for installed systems

3. Documentation Requirements

- ☐ Product data sheets with material specifications
- ☐ Third-party test reports for impact and accessibility
- ☐ Installation guidelines and base preparation instructions
- ☐ Maintenance manuals and inspection schedules
- ☐ Warranty documentation (minimum 5 years recommended)
- ☐ Compliance statement with ADA and CPSC guidelines

4. Installation & Project Management

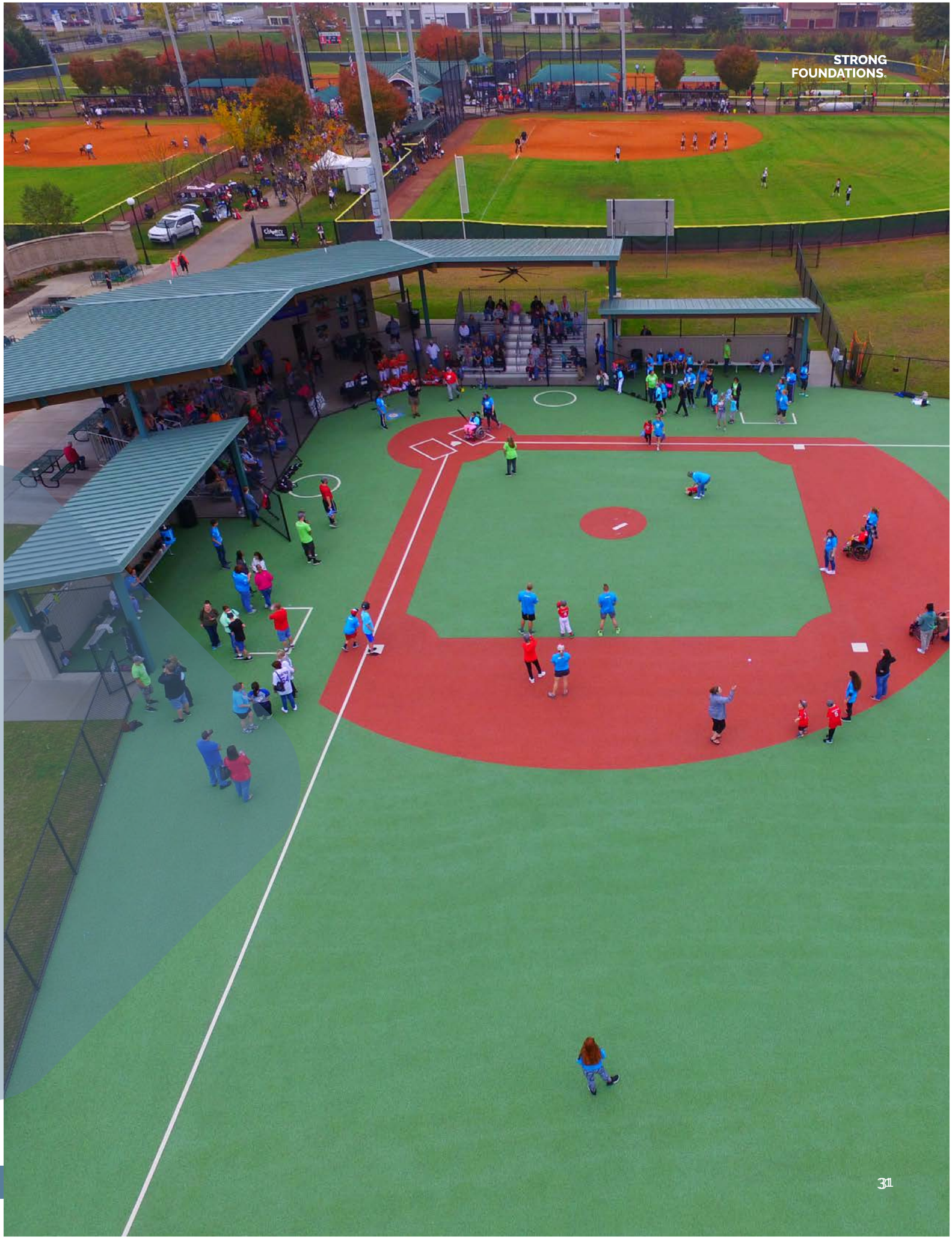
- ☐ Pre-installation site assessment and consultation
- ☐ Clear project timeline and milestone tracking
- ☐ On-site supervision during installation
- ☐ Post-installation inspection and field testing
- ☐ Final compliance verification and documentation handover

5. Warranty & Support

- ☐ Written warranty covering material defects, fading, and wear
- ☐ Defined warranty period (5–10 years typical)
- ☐ Clear exclusions and maintenance requirements
- ☐ Post-installation support and repair services
- ☐ Optional maintenance contracts or inspection services

6. Sustainability & Safety Considerations

- ☐ Recycled content or environmentally responsible materials
- ☐ Non-toxic and allergen-safe components
- ☐ UV resistance and weather durability
- ☐ Slip resistance and heat mitigation properties
- ☐ Drainage and water permeability features





PROTECTING YOUR INVESTMENT: MAINTENANCE & LONGEVITY

Designing a playground is more than a one-time capital investment—it's a commitment to long-term functionality, accessibility, and performance. Selecting the right surface system is only the beginning. To protect this investment, decision makers must understand maintenance strategies by surface type, and prepare for long-term care including repairs and eventual replacement.

WHY MAINTENANCE MATTERS

Without routine care, even the most durable surfacing systems will degrade, compromising performance, accessibility, and aesthetics.[33,34] Whether you're specifying loose-fill or unitary surfacing, a thoughtful maintenance plan is essential to preserving the surface's intended function and ensuring a positive user experience over time.[35,36]

MAINTENANCE AND PROTECTION BY SURFACING TYPE

Even the best-designed surface systems can experience wear and deterioration if not properly maintained. Understanding material behavior—especially in high-traffic and impact zones—can help design professionals plan for prevention and specify appropriate reinforcements from the outset. Whether you're working with loose-fill or unitary surfaces, anticipating maintenance needs allows for smarter design detailing, better product selection, and reduced long-term maintenance burdens.

Loose-Fill Surfaces (Engineered Wood Fiber, Loose Fill Rubber)

- High-Use Zones: Swings, slides, and transfer platforms tend to displace material quickly. Rake, level, compact, and top-off regularly. Consider adding wear mats or unitary paths where traffic is concentrated.
- Accessibility Maintenance: Loose-fill surfaces require consistent raking, compacting, and material depth checks to remain firm and stable. Use unitary surfacing to create accessible routes where applicable and ramps at entries/exits to improve transitions.
- Material Breakdown: EWF decomposes over time; rubber particles scatter. A well-designed drainage system and regular inspections can mitigate early breakdown.
- Drainage Issues: Poor drainage accelerates decomposition in wood fiber and contributes to frozen surfaces being less resilient in colder months. Always include a drainage layer in design and inspect for pooling or erosion annually.

Unitary Surfaces (PIP Rubber, Tiles, Synthetic Turf, Bonded Rubber)

- Surface Hardening: Over time, rubber surfaces may lose resilience. Ask for thicker systems up front to prolong attenuation performance, especially under higher fall heights.
- UV Shrinkage & Degranulation: UV exposure causes shrinkage and separation, especially around seams and borders. Proactive application of topcoats can extend surface life and delay granulation.
- Edge & Seam Separation: Frequent temperature swings or poor installation can lead to visible gaps and trip hazards. Specify UV-resistant binders, and ensure professional installation by certified teams.





Routine maintenance isn't one-size-fits-all. Each surface type has unique inspection and maintenance needs. Key inspection areas include:

SURFACE TYPE	KEY ACTIONS
Loose Fill (Rubber or Engineered Wood Fiber)	Rake, level. and compact high-use areas regularly based on usage. Top-off and compact annually or as needed.
Poured-in-Place Rubber	Visually inspect for cracks, thinning, flaking, and seam separation. Maintenance clear coat every 12-24 months.
Tiles	Check for curling edges or gaps. Replace individual tiles if damaged.
Synthetic Turf	Brush monthly to prevent matting. Check infill levels and refill when low. Remove leaves and debris as needed.

For comprehensive care, always refer to the surfacing manufacturer's maintenance manual and ensure your maintenance team has access to the appropriate tools and training.

REPAIR VS. REPLACEMENT CONSIDERATIONS

When signs of wear become visible or performance is in question, it's important to assess whether targeted repairs will be effective or if a full replacement is the better long-term investment. This section helps guide decisions based on material type, extent of degradation, and anticipated use.

Loose-Fill Surfaces

- Engineered Wood Fiber: After years of topping off, lower layers often degrade into a soil-like texture that holds moisture and clogs drainage. Inspect the base every 10–12 years, or as climate conditions dictate. This can be checked by simply digging down to drainage base after hard rain. If water is standing after 30 minutes, consider full removal and replacement.
- Loose-Fill Rubber: Over time, UV exposure can wear away surface granules. If discoloration or surface anomalies appear, surface replacement is recommended to mitigate risk of injury.

Unitary Surfaces

- Poured-in-Place Rubber: Cracks, shrinkage, or color loss can often be repaired in small zones, but extensive damage or exposed cushion layers indicate it's time for full resurfacing. Routine topcoat applications can delay this need.
- Tiles: Individual tiles that curl, shrink, or separate at the seams can be replaced, but widespread issues often warrant full tile replacement.
- Synthetic Turf: Matted fibers and visible seam wear may be localized, but excessive wear—especially in high-traffic areas—typically leads to full replacement. Check manufacturer warranty terms for fiber retention and infill maintenance thresholds.



WHAT TO ASK YOUR SURFACING SUPPLIER BEFORE YOU PURCHASE



Choosing the right surfacing system isn't just about appearance and upfront cost—it's about performance, maintainability, and partnership. Specifiers and purchasers should be equipped to ask the right questions to ensure long-term value and reduce surprises post-installation. Here's a checklist of critical topics to discuss with any supplier:

Certifications & Compliance

- Is the product certified by IPEMA?
- Can you provide ASTM F1292, F1951, F2075 (EWF), F3012 or other pertinent test results that pertain to the specific product?
- Does the surface meet accessibility standards, and has it been tested periodically post-installation?

Material Source

- What materials are used—virgin or recycled?

Installation Support

- Do you offer detailed installation guides for in-house crews?
- Are certified installation professionals required or recommended?
- Will a post-installation inspection or compliance letter be provided?

Maintenance Plans

- What maintenance is required to keep the product performing as specified?
- Are there topcoat or surface treatments recommended over the product's lifespan?
- How often should topping off, re-coating, or infill replenishment occur?

Warranty & Lifecycle

- What is the length and coverage of the product warranty?
- What voids the warranty?
- Is performance testing (e.g., impact attenuation) offered during the surface's life?

Liability & Risk

- Does the supplier carry liability insurance for installed surfaces?
- Can the product's performance be verified on-site through third-party testing?



DESIGNING FOR LONGEVITY

Specifying surfacing is not just about choosing a material—it's about designing for performance over time. A surface that looks great on opening day can quickly become a liability without proper planning for drainage, maintenance, and inspection. Surfacing systems must be viewed as living components of the playground environment—impacted by weather, use patterns, and site-specific conditions.

Landscape architects, municipal planners, and facility managers play a critical role in advocating for long-term performance through smart design and informed product selection. Understanding the typical failure points of loose-fill and unitary surfaces allows designers to integrate preventative solutions like designing with a mix of surface types, wear mats, ramps, or thicker installations from the start. Budgeting for maintenance, repairs, and eventual replacement is essential—not only for compliance but for continued user satisfaction and safety.

Choosing a trusted supplier—one who will provide certified products, performance data, maintenance guidance, and long-term support—is just as important as selecting the right surface system. Surfacing is one of the most visible and functional aspects of a playground, influencing everything from accessibility and aesthetics to injury prevention and operational cost.

Ultimately, protecting your investment in surfacing means thinking beyond purchase price. It requires a holistic approach that considers total lifecycle value, realistic upkeep, and the ongoing ability of the surface to deliver a safer, inclusive, and enjoyable experience for all.





DESIGNING FOR PLAY VALUE, INCLUSION, AND EXPERIENCE

The surface of a recreational environment is often the most visible and utilized element on site—yet it is still commonly overlooked in design. Modern playground and recreational surfacing goes beyond safety and compliance to become an integral part of how the site functions for users of all ages and abilities. When thoughtfully planned, surfacing enhances aesthetics, encourages movement, supports inclusive participation, and adds play value beyond the equipment itself.

Inclusive and engaging surfacing decisions do not happen by accident. Designers and planners should approach surfacing as a layered design element: it is both the foundation of safety and a medium for creativity and accessibility. Designers can influence how users navigate, engage, and experience the space simply through the materials, layout, and graphics used in the surfacing. Surfacing is also an equity tool: when accessibility and intuitive design are embedded at the surface level, it enables more people to play, socialize, and learn together.

ELEVATING PLAY AND INCLUSION THROUGH SURFACE DESIGN

Some of the ways surfacing can support a more engaging user experience is through color, texture, theming, and application. This experience isn't limited to playgrounds, as surfacing complements amenities like trails, splash zones, and dog parks, too, creating multigenerational and engaging user experiences.

1. Color, Contrast, and Navigation

Color is one of the most powerful design elements in surfacing. It enhances not only visual appeal but also wayfinding and spatial organization.[4,37] Surfacing can be strategically color-coded to guide behavior, improve safety, and support learning.

Contrasting colors at high-use zones—such as slide exits, swing bays, and transfer points—can alert users and caregivers to areas of higher activity. These visual cues can improve decision-making, reduce accidental collisions, and help orient users with sensory or cognitive differences.[2,38] Colors may also be used to visually separate areas by age range or activity type (e.g., quiet sensory zone vs. active challenge area), making it easier for children and families to engage at their comfort level.[3]

Designers can also integrate colors into thematic elements, turning the surface into a canvas for storytelling. A coastal theme might feature blue wave patterns and sand-colored inlays, while a park with historical context could include shapes or layouts tied to local culture. These color patterns enhance memorability and transform the space into a community landmark.





2. Texture and Sensory Design

Texture plays a significant role in how users experience space, especially for children with sensory sensitivities.[39] Incorporating multiple textures—through a blend of surface types like PIP rubber, bonded rubber, synthetic turf, or EWF—invites exploration and fosters inclusive engagement.

Texture can be used to differentiate zones underfoot: soft and springy for imaginative play, firm and stable for mobility routes, and grainy or natural for loose-part zones. These differences promote movement and invite users to experience the space with their whole bodies. Transitions in texture are also a valuable tool in non-verbal communication, signaling shifts in play type or intensity. It is important to consider access for users with mobility devices in all texture considerations. For example, sand areas can be elevated, or accessible routes can be created to sand diggers designed for users of mobility devices.

While texture should never compromise accessibility, its thoughtful inclusion can create a multisensory environment that supports child development, especially for those with sensory processing needs.[2,40] Soft hills of PIP rubber, engaging synthetic turf mounds, colorful synthetic turf hopscotch inserts, expansive synthetic turf play areas or garden beds with mulch borders can all offer tactile experiences in accessible, engaging ways.

3. Routes of Travel and Inclusive Pathways

The experience of moving through a play or recreation space should be just as intentional as using the features themselves. Surfacing design should prioritize connected, accessible routes that comply with the accessibility standards and ASTM F1951—but also go beyond compliance to enhance user experience and promote inclusivity.[2,7,22]

Designers should consider how surface materials, slope, and color work together to create intuitive movement paths. Curved walking loops or continuous loops for mobility devices add functionality and movement motivation.[41–43] Secondary routes may be less direct but offer interest—through interactive graphics, embedded games, or shaded rest points. Providing choice and variety in movement paths supports users across ability levels, energy levels, and ages.

Surfacing can help eliminate isolation by drawing people together across a unified space, for example, helping a grandparent or grandchild using a mobility device to play alongside their family and peers. Seamless transitions between zones, ramped mounds, and clearly marked gathering spaces also help foster community interaction.





4. Theming and Imaginative Play

Surfacing can bring stories to life—literally under users' feet. Themed designs in surfacing are not only visually exciting, but they also expand the opportunity for creative, open-ended play.[44] A playground shaped like a volcano might use red, orange, and brown surfacing to create lava flows. A sports-themed recreation space might use a synthetic turf surface with a custom baseball diamond graphic embedded.

These types of creative elements encourage spontaneous games, support dramatic play, and make the space feel cohesive. Themes may also tie in with local culture, geography, or donor recognition. From ocean coves to galaxy maps, themed surfacing can help a community tell its story through play.

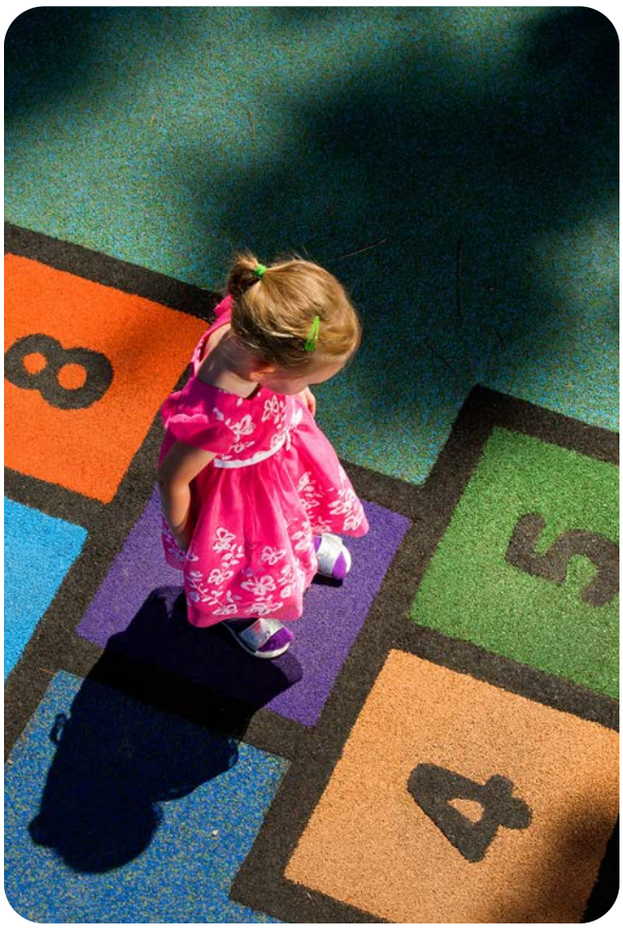
Importantly, these designs are most durable and versatile when implemented in unitary surfaces such as PIP rubber or turf with inlay graphics. Designers should collaborate early with surfacing manufacturers to ensure the creative vision can be achieved while maintaining compliance and durability.

5. Zones for Learning, Fitness, and Multigenerational Use

Surface graphics and applications can be tailored for specific user groups and outcomes. Schools, early childhood centers, and parks can leverage surfacing to reinforce outdoor learning: letters, numbers, maps, animal shapes, and interactive elements like mazes or hopscotch patterns can support curriculum-based engagement[45,46] and physical activity.[47]

For fitness spaces, safety surfacing is important to users[48] but can also become part of the workout. Agility ladders, sprint markers, and dot drills can be embedded into the surface to guide movement. In multigenerational environments, surfacing may be used to gently separate zones for adult fitness, child play, and family gathering—through color bands or material change—while keeping the entire site connected.

Designers should think about how surfacing can serve as both a learning tool and an inclusive prompt for social engagement. Intergenerational movement zones, walking trails with embedded brain games, and quiet areas with visual texture can turn the ground plane into a rich, interactive layer.



SPECIALTY SURFACING APPLICATIONS: EXPANDING BEYOND TRADITIONAL PLAYGROUNDS

While playgrounds are a central focus of surfacing design, today's communities demand multi-functional recreational environments that serve people—and pets—across age, ability, and interest. Specialty surfacing applications are critical in activating these diverse spaces, each requiring thoughtful planning to balance safety, durability, aesthetics, and user needs.

Water Play Areas & Splash Pads

Aquatic environments present unique challenges and opportunities for surfacing. Traditionally, water play zones were constructed using concrete, pavers, or textured coatings, but these surfaces can be abrasive, slippery, and uncomfortable underfoot—especially for young children. Modern surfacing options, such as PIP rubber ordrainable synthetic turf offer a resilient, slip-resistant alternative that can be installed over existing hard substrates.

These surfaces can be customized with playful graphics, bright colors, or themed patterns to reflect the identity of the space—whether a riverbed design for a nature-themed splash park or whimsical sea creatures for a coastal design. Importantly, surface selection in these areas should take into account drainage, UV exposure, chlorinated water contact, and ease of cleaning. While ASTM F1292 and F1951 do not govern water play zones, ASTM F2223 provides a helpful reference for surfacing performance and safety expectations.[49]

Ensure the surfacing is sloped properly to eliminate standing water and promote rapid drying to reduce microbial growth.



Dog Parks And Pet-Friendly Zones

The growth of off-leash dog areas has brought with it new expectations for surfacing that supports both canine safety and human comfort. Synthetic turf systems designed specifically for dog use have emerged as the preferred solution for high-traffic areas. These synthetic grass systems often include:

- A non-absorbent, fast-draining backing
- Antimicrobial protection in the turf and infill to reduce odor and bacteria
- Tufted pile heights that resist matting from paws and claws and simplify cleaning of pet waste

Synthetic turf offers the visual appeal of grass without the maintenance demands, mud, or erosion. When paired with hardscape walkways, turf islands create naturalistic, inviting environments for dog owners and pets alike. EWF and bonded rubber may also be used in transition zones or around perimeter fencing, but should be maintained regularly to prevent displacement and compaction. Accessibility standards apply to accessible routes to and within dog parks.

Synthetic turf in dog areas must be routinely flushed with water and sanitized as part of an ongoing maintenance plan to prevent build-up of waste or odor.

Outdoor Fitness And Multigenerational Recreation

Surfacing in outdoor fitness zones must do more than protect against falls. It must support various types of movement and accessibility, provide stability for older adults or those in rehabilitation, and withstand repetitive impacts from users and equipment. Unitary systems—especially tile, PIP rubber, and bonded rubber—are preferred for these zones due to their durability and accessibility.

Designers can embed graphic cues like sprint lanes, agility ladders, jump boxes, or balance circuits into the surface itself, encouraging proper use and extending the training envelope. Different surface colors or materials can help delineate intensity zones or age-specific areas.

For zones adjacent to fitness stations, surface transitions should be seamless and accessible. Consider incorporating resting pads, accessible routes between stations, and even shaded areas with textured surface cues for seating zones.

Consider using a mix of surface colors in areas with multiple workout zones to help denote a difference in exercise intensity that may occur.





Trails, Gardens, And Passive Recreation Areas

Beyond active play, surfacing also plays a role in passive recreation: the stroll through a pollinator garden, the walk along a community trail, or a pause at a shaded bench. In these areas, surfacing serves to invite exploration, promote accessibility, and reduce long-term maintenance.

Natural-looking surfaces like synthetic turf, bonded rubber, or EWF blend seamlessly with landscaping, while also providing routes of travel that meet the accessibility standards.[22] Designers should be aware of slope and cross-slope limitations to ensure accessible paths, and should consider edging or containment borders to maintain material integrity over time.

In community gardens or educational landscapes, surfacing can help organize the space, define planting beds, and reduce weed growth. Permeable systems like bonded rubber and turf can also contribute to stormwater management goals.[50]

For regions with intense freeze-thaw cycles or high rainfall, drainage planning is essential in passive zones to preserve surface integrity and reduce long-term upkeep.

Build fitness spaces from the ground up with surfacing engineered to support F3101 requirements and promote a safer workout environment.



Picnic Areas, Event Lawns, And Gathering Spaces

These often-overlooked environments benefit tremendously from intentional surfacing design. Whether it's a firm surface under and around picnic tables to improve accessibility or synthetic turf used as an event lawn, the goal is to provide comfort, cleanliness, accessibility, and functionality without sacrificing aesthetics.

Key design goals should include:

- Durability: Surfaces that withstand foot traffic, furniture, and pop-up structures.
- Cleanability: Materials that resist stains or are easy to hose off.
- Accessibility: Compliance with accessibility standards and seamless transitions between use areas.

Bright color borders or textured inserts can also be added to delineate active areas from quiet seating zones or denote safety buffers around grills, fountains, or restrooms.

Specialty surfacing is not a one-size-fits-all decision—it must be tailored to the purpose, user, and site-specific challenges. When incorporated early in the design process, surfacing becomes a powerful tool for activating every square foot of a recreational space. Designers and planners are encouraged to think beyond the equipment zone, viewing surfacing as both a performance product and a canvas for creativity and inclusion.

SPECIALTY SURFACING APPLICATIONS

Application	Recommended Surfacing Options	Key Considerations	ASTM/ADA Compliance
Water Play Areas & Splash Pads	• Bonded rubber (with appropriate sealants) • Poured-in-place rubber (with slip-resistant finish	• Non-abrasive under bare feet • Sloped for drainage • UV- and chlorine-resistant materials	• No ASTM specific to aquatic play. • Reference F2223 for guidance. • Accessibility standards address accessible routes and connections to minimum number of water play components.
Dog Parks & Pet Zones	• Bonded rubber • Engineered Wood Fiber (perimeter use) • Synthetic grass (dog-specific infill & drainage)	• Fast-draining backing • Antimicrobial infill • Durable under claws • Routine cleaning for odor control	• ASTM not required • Accessibility compliance to and connecting provided elements throughout the space.
Outdoor Fitness Zones	• Bonded rubber • Poured-in-place • Synthetic turf • Tiles	• Support for various activity levels • Visual and tactile zone markers • Seamless transitions between features	• ASTM F1292 (fall height) • Accessible routes to a minimum of one of each type of provided fitness equipment and compliance with accessibility standards and ASTM F1951.
Multigenerational Recreation	• Bonded rubber • EWF for nature play • Poured rubber • Synthetic turf	• Varying slope/access • Rest areas and loops • Sensory-rich, accessible features	• ASTM F1292, F1951 • Accessibility standards require an accessible route to the area and connections to provided elements and spaces.
Pedestrian Trails & Garden Paths	• Bonded rubber • EWF (with edging) • Synthetic turf	• Consistent grade • Defined routes of travel • Integration with landscaping • Weed control	• Compliant accessible routes in garden spaces • Slope ≤ 5% or treated as a ramp. • For pedestrian trails follow the accessibility requirements in the Architectural Barriers Act section 1017.
Picnic Units, Lawn, Event Zones, Areas of Sport Activity	• EWF for natural look • Poured rubber • Synthetic grass	• Comfortable surface • Visual zoning (e.g., picnic vs. games) • Easy to clean	• Accessibility standards address accessible routes to the boundary of each area of sport activity. • Accessibility standards address scoping and technical requirements for accessible picnic units, including accessible routes to and around accessible dining surfaces.
Themed Environments	• Poured-in-place • Synthetic grass with graphic inlays	• Supports story-based designs • Align with local identity/ history	• ASTM F1292 for fall attenuation and ASTM F1951 for firmness and stability. • Accessibility standards require a route to and connecting required elements and spaces.

SURFACING CONSIDERATIONS

Category	Performance Priority	Design Opportunity	Recommended For
Poured-in-Place Rubber (PIP)	Highest accessibility & custom design	Full theming, custom graphics, color-coded zones	Playgrounds, splash zones, fitness parks, themed play trails
Bonded Rubber	Natural aesthetic	Earth tones, textured surface, faster install	Pedestrian trails, dog parks, natural-themed play, garden paths
Synthetic Grass (Play/Pet/ Landscaping)	Visual realism, accessibility, cooler surface	Custom logos, multiple infill types, bright colors	Playgrounds, dog parks, picnic areas, event lawns, multiuse spaces, areas of sport activity
Rubber Tiles	Modular, indoor/outdoor versatility	Brand/logo inserts, segmented areas	Indoor/outdoor playgrounds, school courtyards, structured fitness areas
Engineered Wood Fiber (EWF)	Low cost, natural play, loose-parts play	Loose parts zones, nature play, gardens	Edges of themed play, trails, budget-conscious zones
Splash Pad Coatings	Slip resistance, non-abrasive feel	Bright colors, wave themes, inlay shapes	Aquatic play features, inclusive water zones

Summary Design Tips For Specialty Zones

- Durability Over Time: Select surfaces that match long-term foot traffic, animal use, water exposure, or heat conditions.
- Visual Zoning: Use color, shape, and texture to subtly guide users—this is especially useful in inclusive fitness and event spaces.
- Drainage and Edging: Specialty surfaces often support non-traditional layouts. Adequate drainage and clear edge transitions are key to maintainability and performance.
- Sensory Integration: Layering different textures across applications (e.g., soft turf with hardscape, rubber with plant beds) enhances sensory engagement for all ages and abilities.
- Maintenance Planning: Specialty areas may require custom cleaning protocols. Work with manufacturers and contractors to define these early in the design.





A CALL TO ACTION

The following case studies explore how surfacing can do far more than satisfy a technical requirement—it can elevate the play value, beauty, and accessibility of a site in ways that shape the entire user experience.

Spanning a diverse range of settings, from restaurants and parks to open spaces and beyond, they are intended to spark the imagination and reveal what becomes possible when the ground plane is treated as an active design element rather than a passive backdrop.

Together, they invite a shift in mindset: away from mere compliance and toward visionary design that sees the surface beneath every project as a blank canvas—one capable of guiding imagination, blending impact attenuation with interactive landscapes, and bringing vibrant color and thematic storytelling seamlessly into the built environment so they are welcoming to all.

Beyond inspiration, these examples demonstrate how thoughtful surfacing decisions can influence circulation, define activity zones, support inclusion, and reinforce the character of a destination. They show how the surface can organize movement, invite exploration, and create memorable experiences for users of all ages and abilities—proving that high-performing surfaces can also be some of the most expressive elements in a project.

Whether you are designing a museum courtyard, a restaurant play patio, or a sprawling regional park, the ground plane helps shape how a community interacts with a space. Safety surfacing is not simply a restrictive code requirement; it is a fluid design language that bridges safety and art.

Challenge your project team to treat impact-absorbing surfaces as a core design element—one that enhances a site's architecture, atmosphere, identity, and accessibility.





CASE STUDIES

Inspiring Play Through Design

Location: Miami Country Day School Miami, FL
Surfacing Scope: 1.5" Playground Retop – 8,890 SF with Custom Design

Miami Country Day School is an independent, coeducational, nonprofit learning community with approximately 1,380 students in Pre-Kindergarten through Grade 12, designed to meet the needs of every student, every day, everywhere. They wanted to breathe new life into their lower school playground with a resurfacing project that combined safety, creativity, and school spirit. The project included an 8,890-square-foot retop (resurfacing over existing PIP rubber) featuring a fully customized game layout designed to inspire imagination and student-led play.

One of the standout features of this installation was a series of inlets conceptualized by the school's Lower School Director. The inlets were designed to encourage students to invent their own games—supporting unstructured play and creativity. These unique elements required special care, additional planning, and multiple rounds of design iteration to bring to life. The space includes:

- A circular game design, entirely unique to this project
- Two custom-designed 4-square formations
- Inclusion of the school's initials within the surface

The project faced a variety of challenges along the way that had to be considered in the overall plan. They included:

- Site Constraints: Materials and dumpster placement were limited due to campus activity.
- School Operations: The crew had to pause and relocate mid-install to accommodate school drop-off schedules.
- Design Iterations: Multiple layout revisions were required, including last minute adjustments requested by school leadership.
- Scaled Planning: A digital takeoff and estimating software designed for construction professionals to calculate material and labor costs from digital blueprints was used to ensure the design could be executed to scale, enabling clear guidance for the on-site crew.

Despite hurdles, the final product was a creative, engaging, and safer play space that has already become a favorite among lower school and after-school students. As one school representative stated, "We were absolutely thrilled with the results of our recent playground resurfacing project! From start to finish, the entire process was a breeze. Communication with the project manager was exceptional—clear, timely, and always helpful, which made the experience smooth and stress-free." The attention to detail and alignment to the school's vision resulted in a unique playground that reflects the school's commitment to imaginative play and student development.





CASE STUDIES (CONT.)

A Custom Themed Neighborhood Destination

Location: Live Oak Park, Temple City, CA
Surfacing Scope: 12,495 SF poured rubber surface and mounds

The revitalization of Live Oak Park in Temple City, California, has transformed a traditional community space into a vibrant and inclusive destination playground. The playground components all incorporate a space theme, and each play zone is tied together with dynamically designed safety surfacing. The design also incorporates seven independent shade structures, strategically placed to maximize effectiveness. Highlighted by expansive PIP rubber surfacing, the project's thoughtful integration of safety, design, and functionality has already captured the admiration of local families and community members.

Among the most distinctive aspects of the project was the engineering and installation of custom shade structures that had never before been used in the city's park system. These large-scale canopies were designed in coordination with the shade manufacturer and required full on-site assembly due to their size and structural complexity.

The project team navigated tight site access and the need for precise sequencing of trades by developing a highly detailed installation plan. As Adam Matsumoto, Temple City's Park and Recreation Director stated, "The installer's team played a vital role in translating the playground concept into a buildable reality. Their expertise and commitment to craftsmanship were clear from day one. The care they took in laying out the surfacing—especially the detailed design around the equipment and mounds—ensured our vision was carried through exactly as intended. The colorful TPV surfacing really brings the entire design to life."

From coordinating the delivery of surfacing materials and playground components to managing the placement of structural elements, every detail had to be aligned to ensure both safety and aesthetic quality. The vibrant mounded rubber surfacing brought dimension and play value to the site, complementing the new equipment and canopy design.

Since opening, the new playground at Live Oak Park has become a standout destination in the city. Local residents have enthusiastically embraced the space, with many citing the playground's modern design, comfortable shade, and inclusive layout as key improvements. Social media buzz around the project has outpaced any previous city park updates, with families eagerly sharing their experiences and photos.

From toddlers to older children, the space welcomes a wide range of users throughout the day. The playground has become more than a place to play—it's a place where families connect, creativity is sparked, and the city's investment in inclusive recreation is on full display.




OUTDOOR GIRL

CASE STUDIES

A Coastal Community Destination Designed for All

Location: Roberts Point Park, Port Aransas, TX
Surfacing Scope: Create sea themed surfacing across multiple critical fall heights

Creative surfacing design and careful material selection can elevate a themed, inclusive playground. With environmental durability requirements, multi-height fall protection, and detailed visual storytelling through custom PIP surfacing, Turtle Cove Playground demonstrates how surfacing plays a foundational role in bringing a community destination to life—both functionally and aesthetically—especially in high-exposure, climate-challenging locations.

Port Aransas transformed its beloved Roberts Point Park into a vibrant symbol of community renewal through the creation of the custom-designed Turtle Cove Playground. This 9,327 square foot destination features multiple critical fall heights ranging from 4 to 10 feet and is layered with colorful PIP rubber surfacing designed specifically for the unique Gulf Coast environment. The coastal-themed destination featuring a custom lighthouse, ship play structure, zip line, and water misters. Rebuilt following Hurricane Harvey, it offers inclusive, educational play with turtle climbers, swings, and the extensive, themed PIP rubber surface.

From a custom lighthouse and ship structure to a sea-life-themed PIP surface, the playground immerses children in a coastal adventure. Graphics include jellyfish, crabs, starfish, schools of fish, and a large, detailed turtle centerpiece—all brought to life through 100% custom Thermoplastic Vulcanizate (TPV) color mixes developed using a digital color mixer tool.

A 1–4 mm TPV rubber surface, paired with an aliphatic binder, was selected for its superior UV stability and long-term performance in high humidity and salt air. This material allowed for intricate graphics while providing a resilient, slip-resistant surface across the entire site. The PIP system accommodates a variety of fall heights without sacrificing visual appeal or functionality.

Turtle Cove was designed to be more than a playground. Interactive learning zones like the planetarium, an inclusive merry-go-round, and ADA-accessible routes make the space welcoming to all. Following the devastation of Hurricane Harvey, this playground serves as a testament to community resilience and pride—bringing joy, learning, and connection to both locals and visiting families.





CASE STUDIES

A Luxury Leisure Lawn That's Always Event Ready

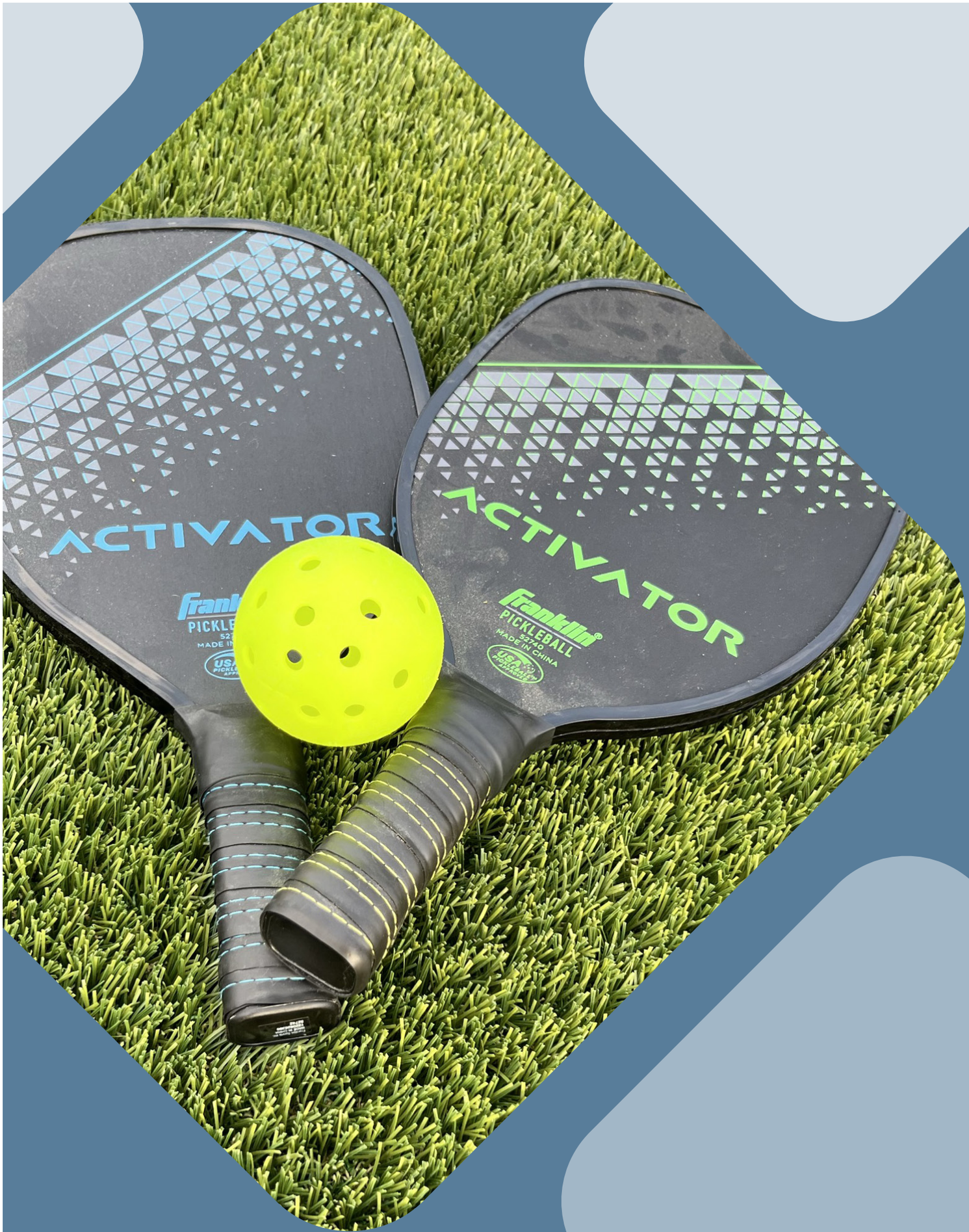
Location: Ritz-Carlton Laguna Niguel, Dana Point, CA
Surfacing Scope: 12,000 SF of recreational synthetic turf

This luxury hotel sought a high-quality outdoor turf area that would withstand heavy foot traffic, especially during events such as weddings, conferences, and outdoor gatherings. As a luxury resort, they needed a lush, green lawn that maintained its pristine appearance without the need for constant maintenance. Additionally, the resort wanted to avoid issues like muddy patches, matted grass, and the environmental impact of traditional turf care in the coastal climate of Laguna Niguel. As part of a larger renovation to elevate the guest experience, this coastal luxury resort transformed a traditional courtyard into a flexible outdoor gathering space using high-quality synthetic turf. The result is a lush, low-maintenance recreational landscape that enhances visual appeal while offering guests a welcoming space to relax, gather, and play.

The courtyard lawn has become a key part of the resort's leisure experience—used for everything from morning yoga and lawn games to cocktail receptions and informal lounging. Designed for beauty and durability, the turf installation stands up to constant use without the wear, mud, brown spots or downtime of natural grass. It has also helped the resort align with its broader sustainability goals. The artificial grass conserves water, lowering operational costs and reducing the environmental footprint. By eliminating the need for pesticides and fertilizers, it remains a sustainable and eco-conscious choice that aligns with the resort's commitment to both luxury and responsible practices.

This installation created a vibrant green lawn that not only looks stunning but also provides the durability needed to handle high foot traffic. For sophisticated events or wedding, guests can glide across a luxurious, perfectly manicured lawn—without worrying about tracking mud or dirt onto their formal attire or getting their heels stuck in muddy grass. Thanks to overall design and consideration, water drains seamlessly, keeping the surface dry and clean—even during unexpected showers, offering an elegant natural look while standing up to high guest use. Guests enjoy a premium aesthetic and a comfortable, barefoot-friendly texture. Staff appreciate the reduced maintenance with the open and inviting outdoor area. With no need for mowing, fertilizing, or rest periods, the turf area remains open for guests year-round and always looks event-ready.




ACTIVATOR
Franklin
PICKLEBALL
52240
MADE IN CHINA
ACTIVATOR
Franklin
PICKLEBALL
52240
MADE IN CHINA

CASE STUDIES

A Social Lounge With Sporting Style

Location: The Pickle Bar | Charleston, SC
Surfacing Scope: Multi-zone turf installation for recreation and leisure

The Pickle Bar is an exciting venue in Charleston, South Carolina, blending the fast-growing sport of pickleball with a casual, upscale social experience. The owners envisioned a space that extended well beyond traditional courts—one that could double as a recreational lounge and event destination. By incorporating synthetic turf into key zones of the facility, the project team was able to deliver a flexible surface option that aligned with the space's unique identity.

The turf installation was not limited to athletic use. Designers integrated synthetic turf into lounging and dining areas, walkways, and event zones—offering a consistent, low-maintenance surface with a fresh, welcoming aesthetic. Turf helped define distinct spaces without the need for hard edges or obtrusive barriers, supporting a free-flowing guest experience.

The turf system chosen for The Pickle Bar offered high durability to withstand both athletic movement and casual foot traffic. Whether guests were relaxing with food and drinks or stepping off the court for a break, the surface remained comfortable and clean. Turf also eliminated muddy patches and grass wear, a common challenge in hospitality landscapes.

Guests appreciate the comfortable inviting aesthetic for dining, lounging, and socializing, as well as the seamless transition from pickleball courts to community spaces. The space owners were overjoyed to have a low-maintenance landscaping alternative with no mowing, mud, or bare spots that maintained year-round visual appeal and consistent performance. No matter the weather, the space remains durable enough for events, weather, and variable foot traffic.

The community response to The Pickle Bar has been overwhelmingly positive. The turf surfaces have become an integral part of the brand's identity—encouraging longer guest stays, outdoor interaction, and an environment where sport and relaxation coexist. The unique blend of turf-based recreation and social atmosphere positions The Pickle Bar as a model for how synthetic turf can be used beyond sports fields and playgrounds.





CASE STUDIES

An Inclusive Community Destination

Location: Civitan Inclusive Park, Cleveland, TN
Surfacing Scope: 2,650 square feet of poured-in-place rubber surfacing

Civitan Inclusive Park is a shining example of community-driven design that places inclusion at the heart of recreation. Located in Cleveland, TN, this welcoming play space was built to ensure that children of all abilities could play side by side, fostering connection, confidence, and joy through accessible design.

Led by local leaders and supported by the Civitan Club, the park's development involved passionate stakeholders, families, and civic groups who advocated for a space where every child could participate fully. The result is a park that reflects the values of equity, play, and belonging.

The playground offers a unitary, impact-attenuating surface that meets ASTM and ADA guidelines. The surfacing supports mobility device users with smooth transitions, defined pathways, and safe play zones, reinforcing both accessibility and visual organization across the play space.

From ground-level access to elevated experiences, the playground features accessible ramps to all deck levels and a fully inclusive surface-level merry-go-round—ensuring that no child is left behind when the play begins. The PIP rubber surfacing plays a key role in maintaining access throughout, enabling freedom of movement for children and caregivers using mobility devices or strollers.

The thoughtfully designed layout includes equipment that promotes physical, sensory, and social engagement. With wide paths, inclusive spinning elements, and shared activity zones, the space encourages intergenerational play and supports a range of developmental needs. Color and texture within the surfacing enhance the play value and visual appeal.

The true success of Civitan Inclusive Park is reflected in the voices of its users. Casie Martin, a local parent, shared "As a mom, it means everything to see my daughter Anora, who uses a wheelchair, able to be part of the fun instead of feeling left out. Watching her laugh, race, and join in like everyone else fills my heart with so much pride and happiness. It means the world to us to have a space where Anora is seen, welcomed, and celebrated."




MICHELIN

CASE STUDIES

A Unique Children's Museum

Location: The Children's Museum of the Upstate (TCMU), Greenville, SC
Surfacing Scope: Utilize multiple surfacing types to create texture and visual cues for movement

The Children's Museum of the Upstate opened in 2009. Conveniently offering reciprocal memberships in two locations, TCMU's downtown Greenville, South Carolina, location allows visitors to experience 80,000 square feet and 19 exhibit galleries, suitable for children 1-15 years of age, with components and programming in the areas of arts, humanities, sciences, health, nutrition, and the environment. They offer daily experiences, summer camps, family workshops and more across three floors of indoor exhibits and an outdoor accessible play area designed for people of all abilities. TCMU is one of the largest children's museums in the country and the first to be Smithsonian-affiliated.

The outdoor play area promotes physical activity and fun with gathering spaces, planting pockets, and a creative climbing zone. The surfacing was designed to complement the space and provide routes of travel to promote exploration of this fun, outdoor environment.

The environment features brightly colored PIP rubber pathways to encourage movement and exploration of the many outdoor vignettes the museum offers. Surfacing continues through sunny and shaded spaces to offer users options in the often sunny climate of South Carolina. The museum specified a need for both EWF and PIP rubber in order to compliment landscaping, provide sensory exploration of the surfaces and enhance the overall play value and aesthetic appeal of the environment.





CASE STUDIES

An Adventurous Indoor Play Setting

Location: Venture Church, Hattiesburg, MS
Surfacing Scope: Create a poured rubber surface indoors to complement a play zone.

For faith centers, having a dedicated youth area that provides education, fellowship, and fun for young family members can be the difference in where a family chooses to attend. They boost engagement, attract new families, and foster community connections. These spaces also provide a safe environment for children's development, offer outreach opportunities for the community, and signal that the church values, invests in, and welcomes young families. In recent years, youth ministries have answered the call with increasingly immersive features for young members.

The Venture Church in Hattiesburg is no different. They built an indoor play space and asked for a surfacing option to compliment the setting and provide fun visual cues for the players who used the space. To complement the indoor play environment and create an interesting design, PIP rubber in green and tan was used. The custom indoor play unit for children 5-12 years of age offers a safari hunt club theme area while the infant exploratorium for children aged 6-23 months features ground-level interactive panels. Wall accents such as grass cutouts, a wall-mounted rock climbing panel with mountain graphics, and two large flowers are included to provide an outdoor feel to the indoor setting.

While PIP rubber is a staple for outdoor facilities, it is equally effective and increasingly popular for indoor play spaces where safety and hygiene are paramount. Unlike some indoor alternatives that can shift or trap debris, PIP rubber creates a seamless, unitary surface that is easy to clean. Inside, it maintains its exceptional impact attenuation—able to protect against falls while offering the added benefit of significant noise reduction for cavernous indoor environments. Its ability to be installed directly over existing concrete sub floors, combined with nearly limitless custom color and logo options, makes it a high-performance, ADA-compliant solution that bridges the gap between rugged durability and a polished indoor aesthetic.



START
FINISH

CASE STUDIES

A Multigenerational Fitness Destination

Location: Riverside Park, Indianapolis, IN
Surfacing Scope: Use tile and artificial turf to provide surfacing and branding recognition

In the heart of Indianapolis's Riverside Park, a 5,000-square-foot patch of vibrant blue and white stands as a testament to modern community wellness. Colts Fitness Park includes a Challenge Course, 40-yard dash, and exercise equipment. With over 5,000 square feet of space, the park lends itself to the whole family. While adults can get a workout in on the exercise equipment, both children and families can run the challenge course and 40-yard dash together. Riverside Park serves a large and vibrant community, and Colts Fitness Park serves 30,000 individuals annually.

The space is celebrated for its ninja-style obstacles, that are intuitive enough that anyone can achieve success, and the 40-yard dash that allow users to pretend they're in the National Football League combine, but the true "unsung hero" of the facility is beneath every visitor's feet: its sophisticated, multi-layered safety surfacing.

The Colts Fitness Park utilizes a specialized hybrid surfacing system designed to meet the rigorous demands of high-intensity interval training (HIIT) and child's play simultaneously. Unlike traditional city playgrounds that may rely on wood mulch or gravel, this facility uses a combination of rubber tiles and high-performance synthetic turf.

The tiles cover the adult exercise equipment zones. It is engineered to provide ADA-compliant accessibility while offering critical shock absorption. This "squishy" floor minimizes the force transmitted to a user's joints during plyometric movements and helps denote the adult area and separate it from the family-appropriate area.

The signature 40-yard dash and the central agility areas feature durable artificial turf. This turf is not merely decorative; it is designed to provide the stable footing required for explosive sprinting, plus superior traction that prevents slips during rapid changes in direction. Outdoor fitness in Indiana requires materials that can withstand their fluctuating climate. The park's surfacing is designed for year-round durability. Advanced infills and surfacing materials help manage the "heat island" effect common in synthetic areas, so that these surfaces remain playable even during peak Indianapolis summers. The porous nature of the surfaces allows for rapid water drainage. This ensures the park remains "mud-free" and ready for use shortly after a rainstorm, a significant advantage over natural grass surfaces.

For the community, the embedded Colts branding in the rubber turf creates an immersive environment that encourages the NFL's goal of 60 minutes of daily activity while celebrating the Colts contributions to the space. By prioritizing these advanced materials, the Indianapolis Colts and Indy Parks have created a space where safety and performance coexist, allowing every resident to train like a pro on a surface built for the highest level of impact.





CASE STUDIES

A Dog Park for People and Their Pets

Location: Lake George RV Park, Lake George, NY
Surfacing Scope: Utilize multiple surfacing types to minimize maintenance.

At the award-winning Lake George RV Park, community wellness extends beyond human guests to their four-legged companions. Central to this commitment is Charlie's Bark Park, a sprawling two-acre off-leash oasis recognized as one of the top dog-friendly destinations in the U.S. The 2 acre off-leash dog park offers walking paths, a 10,000 square feet turf play area, spray fountain, agility equipment, and other elements that are sure to get some tails wagging. In addition, a pavilion located at the entrance of the dog park, houses a dog wash station, pet treats vending machine, and accessible restrooms. As one guest added, "The serene atmosphere and beautiful surroundings of Lake George set the stage for a truly relaxing and immersive dog retreat. Lake George RV Park's large range of services and amenities and expansive play area make it an ideal location for a getaway for humans and their four-legged friends." While the agility courses and spray fountains often capture the spotlight, the park's true operational excellence lies in its hybrid surfacing strategy. By utilizing a high-performance mix of synthetic turf and EWF, the facility maximizes pet safety while drastically minimizing long-term maintenance requirements.

The centerpiece of Charlie's Bark Park is its massive synthetic turf play area. Traditional grass surfaces in high-traffic dog parks inevitably succumb to "yellowing" from urine and "mud pitting" from active play, leading to costly reseeding and seasonal closures. Lake George RV Park circumvents these issues with a turf system engineered for durability:

- Rapid Drainage: Unlike natural soil, which can remain soggy for days, the synthetic turf features a permeable backing that allows liquids to flow through to a compacted aggregate base instantly. This eliminates standing water and mud, ensuring dogs return to their RVs clean even after a rainstorm.
- Odor and Bacteria Control: To manage hygiene, modern pet turf often utilizes antimicrobial infills. These non-toxic materials help neutralize ammonia odors from pet waste and inhibit the growth of mold and mildew, maintaining a fresh environment with only periodic rinsing.
- Structural Resilience: The synthetic blades are designed to withstand the thousands of visitors and pets annually without developing the bare patches or holes common to natural sod.

Complementing the turf zones are shaded walking trails and peripheral areas surfaced with EWF. This material provides a distinct contrast to the active play zones, offering several maintenance and safety advantages:

- Shock Absorption: Much like the safety surfacing found in high-end playgrounds, this wood fiber provides a cushioned landing for dogs navigating agility obstacles or sprinting through the wooded sections.
- Sustainability and Cleanliness: Unlike standard mulch, EWF is processed to remove bark and twigs, resulting in a cleaner, knit-together surface that is less likely to track into vehicles or stick to a dog's coat.
- Low Upkeep: This surfacing naturally suppresses weed growth and requires only occasional raking or "top-offs" to maintain its safety depth, sparing maintenance crews from the weekly cycle of mowing and edging.

By utilizing these two specialized surfaces, Lake George RV Park has created a "self-sustaining" recreation area. The lack of irrigation, fertilizers, and pesticides not only protects the pets but also reduces the park's environmental footprint and labor costs. The result is a pristine, year-round facility that allows staff to focus on guest services rather than lawn repair. For RVers, this thoughtful engineering translates to a "dog family's paradise" that stays green, clean, and open for business from dawn until dusk, regardless of the Adirondack weather.

GLOSSARY

ADA – American with Disabilities Act. Federal civil rights law, requires newly constructed and altered public playgrounds to be accessible to children and adults with disabilities.

Addendums – Answers to questions brought about after the bid document is released.

ASTM – American Society for Testing and Materials. One of the world's largest international standards developing organizations.

Bid Documents – The published advertisement or written invitation to bid, instructions to bidders, the bid form and the proposed contract documents including any acknowledged addenda issued prior to receipt of bids.

Bonding – A written form of security executed by the bidder as principal and by a surety for the purpose of guaranteeing that the bidder will sign the contract, if awarded the contract, for the stated bid amount.

CPSC – Consumer Product Safety Commission – Government agency charged with protecting the public from unreasonable risks of injury associated with the use of consumer products under the agency's jurisdiction.

CPSI- Certified Playground Safety Inspector - This certification is offered by the National Recreation and Park Association in coordination with the National Certification Board. All international venues are conducted through the International Playground Safety Institute, LLC on behalf of the NRPA. CPSIs are certified to inspect playgrounds for safety issues and to ensure inspected playgrounds meet current national industry standards developed by the American Society for Testing and Materials (ASTM) and Consumer Product Safety Commission (CPSC).

CSI - Construction Specification Institute - A national association of volunteers, including specifiers, architects, and engineers who are experts in building construction dedicated to improving construction communication through continuous development and transformation of standards and formats, and education and certification of professionals to improve project delivery processes.

Critical height - A measure of the impact attenuation performance of a playground surface or surfacing materials; defined as the highest theoretical drop height from which a surface meets the impact attenuation performance criterion specified by this specification. The critical height approximates the maximum fall height from which a life-threatening head injury would not be expected to occur.

Designated play surface – Any elevated surface for standing, walking, sitting, or climbing, or a flat surface larger than 2.0 in. (51 mm) wide by 2.0 in. (51 mm) long having less than 30° angle from horizontal.

EWF – Engineered Wood Fiber. Product is made of ground wood fiber to specifications so that the fibers knit together to provide a surface springy enough to cushion falls, yet firm enough for wheelchairs.

Fall height – The vertical distance between a designated play surface and the playground surface beneath it.

Formal bid – Bid must be submitted in a sealed envelope and in conformance with a prescribed format which will then be opened at a specified time.

General conditions – A written portion of the contract documents set forth by the owner stipulating the contractor's minimum acceptable performance requirements including the rights, responsibilities and relationships of the parties involved in the performance of the contract. General conditions are usually included in the book of specifications but are sometimes found in the architectural drawings.

Geotextile (filter) cloth – A fabric that retains its relative structure during handling, placement, and long-term service to enhance water movement, retard soil movement, and to add reinforcement and separation between the soil and the surfacing and/or sub-base.

Impact attenuation – The ability of a surface to reduce and dissipate the energy of an impacting body.

Impact velocity – The velocity of a falling body immediately prior to striking the surface.

Informal bid – Unsealed competitive offer conveyed by letter, phone, email, or other means and under conditions different from those required for formal bidding.

IPEMA – International Play Equipment Manufacturers Association – Association representing and promoting an open market for manufacturers of playground equipment and surfacing.

Loose-fill surface – A top layer of small, independently, movable components; for example, engineered wood fiber, shredded rubber, pea gravel, sand, or other similar material.

Open market purchase – A one-time purchase made non-competitively or after solicitation of competitive bid other than under a term contract.

PIP – Poured-In-Place surfacing. A unitary surface consisting of an impact attenuating layer and a wear layer.

Play structure – A freestanding structure with one or more components and their supporting members.

Play value –The play affordances a child can read and or benefit from in a play environment.

Playground equipment – Any fixed physical structure installed in a designated play area that is accessible to children for activities such as climbing, swinging, sliding, rocking, spinning, crawling, creeping, or combinations thereof.

Playground supervisor – Any person tasked with watching children on a playground. Playground supervisors may be paid professionals (e.g., childcare, elementary school or park and recreation personnel), paid seasonal workers (e.g., college or high school students), volunteers (e.g., PTA members), or unpaid caregivers (e.g., parents) of the children at play.

Playground surface – A manufactured or natural material used to cover the ground below playground equipment, including foundations, substrates, and any compliant surfacing materials intended to attenuate impact.

Public use playground equipment – A play structure anchored to the ground or not intended to be moved, for use in play areas of schools, parks, child-care facilities, institutions, family housing, private resorts and recreational developments, restaurants, and other areas of public use.

Request for information (RFI) – A standard business process to collect written information about the capabilities of various suppliers. Normally it follows a format that can be used for comparative purposes.

Request for proposal (RFP) – A document that solicits a proposal from potential suppliers, often made through a bidding process, by an agency or company interested in procurement of a product or service.

Rotational penetrometer – A precision instrument, consisting of a spring-loaded caliper assembled with a wheelchair caster and set in a frame, used to measure the firmness and stability of a surface after installation.

Route of Travel – Accessible route, or the main routes of travel for users between facilities or activity areas of a site.

Scope of work – A document routinely employed in the field of project management. It defines project-specific activities, deliverables, and timelines for a vendor providing services to a client.

Sealed bid - A bid submitted in a sealed envelope to prevent its contents being revealed before the deadline.

Solicitation – Notifying prospective bidders that there is a wish to receive bids for a project or service. This may be advertised publicly, by mail, email or telephone.

Specifications – A detailed, exact statement of particulars, especially statements prescribing materials and methods; and quality of work for a specific project. The most common arrangement for specifications substantially parallels the CSI (Construction Specification Institute) format. (see CSI)

Surface system – All materials that contribute to the impact absorption of a surface to minimize the likelihood of a life-threatening head injury caused by a fall from play or recreational equipment.

Training envelope - In outdoor fitness spaces, the area around each piece of equipment that will be utilized in performing the exercise.

Unitary surface – A layer of one or more material components bound together to form a continuous surface; for example, urethane and rubber composites, molded tiles, and like materials.

Use zone – The surface under and around a piece of equipment onto which a child falling from or exiting from the equipment would be expected to land. These areas are also designated for unrestricted circulation around the equipment.

Voice of Play – An IPEMA Initiative promoting the growth in the quality and quantity of children's free play and the use of playgrounds.

Work Order – A written order, signed by the owner or his representative, of a contractual status requiring performance by the contractor without negotiation of any sort.

RESOURCES

- *American Society for Testing and Materials (ASTM) www.astm.org*
- *Consumer Product Safety Commission (CPSC) www.cpsc.gov*
- *Consumer Product Safety Commission (CPSC) www.cpsc.gov*
- *International Code Council www.iccsafe.org*
- *International Play Equipment Manufacturers Association (IPEMA) www.ipema.com*
- *International Playground Safety Institute (IPSI) www.internationalplaygroundsafetyinstitute.com*
- *National Cooperative Purchasing Alliance (NCPA) www.ncpa.us*
- *National Intergovernmental Purchasing Alliance (National IPA) www.nationalipa.org*
- *National Program for Playground Safety (NPPS) www.playgroundsafety.org*
- *OMNIA Partners Purchasing Alliance www.omniapartners.com*
- *PlayCore www.playcore.com*
- *PlayCore Professional Development Hub https://education.playcore.com*
- *U.S. Access Board www.access-board.com Technical Guide: Surfacing the Accessible Playground—7 Things Every Playground Owner Should Know About the Accessibility of Their Playground Surfaces. https://www.access-board.gov/ada/guides/chapter-10-play-surfaces/*
- *U.S. Department of Justice ADA Standards for Accessible Design. https://www.ada.gov/law-and-regs/design-standards*
- *US Environmental Protection Agency www.epa.gov*
- *Voice of Play www.voiceofplay.org*



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