

WHITEPAPER

HOW PLAYGROUND SURFACING IMPACTS PLAY:

The Importance of Playability

This whitepaper is informed by
independent research conducted by:



The University of Texas at Austin
Center for Research to
Community Impact
College of Education

**Playground
Grass**
by ForeverLawn®



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Intro

Playgrounds, especially those in public or communal settings, play a vital role in the development of a child. In addition to providing a space for fostering growth in key social, cognitive, and physical skills, playgrounds can serve as crucial connective arenas for children and their caregivers within larger communities. Despite the importance and impact of playgrounds for children, typically the main benchmarks for new builds are simply cost efficiency, number of installations, or return visitors/consistent use. When architects or other parks and recreation professionals begin the process of establishing a new communal playground, they are often required to balance myriad goals, considerations, and constraints. These can come from budgetary or availability restrictions, civic mandates, or even strict outcomes and tend to dictate the overall design and construction of the playground. Without properly weighing the potential behavioral, developmental, and communal impact across all aspects of playground planning, it is difficult to define or measure what makes a “successful” playground. This gap between the standard reasons for manufacturing and design choices and the actual aim and significance of public play spaces highlights the need for more intentional planning, consideration, and research when approaching playground implementation. Resources that have such large implications for children, caregivers, and community health should be carefully executed around evidence-based decisions, not just financial or visibility concerns.

Why Playground Surfacing Matters

Outside of the cost, location, and perhaps longevity of a playground, architects and designers typically only consider concerns of equipment and compliance when planning their spaces. And while safety, durability, and logistics are important pieces of the overall significance and success of a playground, there is another often overlooked aspect that plays a large role in the efficacy of community play areas: **surfacing**. Though there are countless different types of playground surfacing, three of the most prominent and widely employed materials are engineered wood fiber (**EWF**), poured-in-place rubber (**PIP**), and **synthetic turf**. Each of these different solutions can greatly impact the layout, cleanliness, usability, longevity, and overall appeal of a playground. But rather than being chosen for the potential benefits they provide to children and other playground users, they are most frequently selected for reasons of cost or convenience. Traditionally, playground surfacing materials have been adopted to support the equipment or functional design of the area. However, there is a larger shift towards selecting surfacing for the ways it can support child development, playground safety, inclusion, and overall playability.

Changes in Play Surfacing

As designers, architects, and planners move away from simple cost- and layout-based choices for surfacing, decision-makers are now turning towards more empirical rationales for playground construction materials. Though many municipalities and firms still heavily value logistic factors in the selection process (such as maintenance requirements, durability, availability, and ease of installation), community outcomes and wellness goals are beginning to play a much larger role in determining important playground aspects like surfacing. Maximizing inclusivity, safety and comfort, visual appeal, cleanliness, return visitations, and quality of play through surfacing materials is becoming more prevalent in guiding overall playground design.

When looking at the three most commonly used materials, synthetic turf stands out as the superior choice. Premium synthetic grass — such as Playground Grass by ForeverLawn — excels in areas of safety, durability, accessibility, ease of maintenance, and overall playability. For many municipalities or architects, a major draw towards synthetic turf is the comparable simplicity of maintenance and repairs. Whereas EWF and PIP often involve regular, cumbersome maintenance, and necessitate much more involved repairs, Playground Grass typically requires minimal, sporadic maintenance and is much easier to repair or replace. On the community side, Playground Grass also offers upgrades in terms of safety and accessibility. A uniform, non-abrasive surface with added cushioning allows children to safely fall, jump, and tumble on the playground, and presents a traversable, inclusive space for children with ambulatory or mobility disabilities. Due to both the improvements in technology and the growing prevalence of such community considerations in design choices, surfacing materials are beginning to receive much more attention in directing overall playground design.

How Playground Surfacing Shapes Play

This developing trend creates the need for an organizing, quantifiable metric to help guide decisions in surfacing by measuring how it truly enhances the playground experience. "Playability" is a term that often gets used in conjunction with the efficacy or quality of a playground, but it has historically been a nebulous term that needs defining. To develop a comprehensive definition of playability and better understand how surfacing truly impacts playgrounds, The University of Texas at Austin's Center for Research to Community Impact (UT) conducted a study involving several expert interviews, a systematic review of numerous publications, and structured field observations. The research team delivered both a quantifiable definition and extensive data on how different playground surfacing (EWF, PIP, and synthetic turf) impacts playability to varying degrees. From reviewing relevant scientific literature and conducting interviews with key informants, the team defined playability as "the socio-spatial and physical characteristics of a playground that make it more or less conducive for active, social, engaging, and inclusive play for all" (Salvo, Jowers, et al., 2026, p. 15).

Synthetic Turf's Impact on Playgrounds

This definition, combined with the system the UT team developed for measuring playability, provides a unified, evidence-based criterion for assessing how playground surfacing truly shapes play. The structure UT's team crafted, the "System for Observing Playability in Playgrounds (SOPLAYGROUND)", measures various playground metrics such as visitation, activity levels, interactions and social play, and age/ethnicity groupings (Salvo, Jowers, et al., 2026, pp. 10-11). The system also considers elements such as weather, accessibility, cleanliness and more in the assessment of an area's playability, leading to a more comprehensive picture of how different aspects of playground design can enhance or hinder play. From data collected through the SOPLAYGROUND system, a **playability score** was devised, providing a statistical representation of how well a play space supported four key components of playability: activity, social environment, inclusivity, and total use (Salvo, Jowers, et al., 2026, p. 12).

Across sixty observations (conducted at six different Austin playgrounds), researchers used these quantitative indicators to gather crucial insights into what impact, if any, playground surfacing has on play and how different materials can contribute to playability. These observations focused primarily on the measurable difference between the influence of EWF, PIP, and Playground Grass on playability and overall playground perception. Additionally, the research findings were classified by neighborhood income level (i.e., high vs. low) to determine whether there exists a statistically significant link with playground playability (Salvo, Jowers, et al., 2026, p. 13). The results of this study provided invaluable information on both how surfacing affects playability and which surfacing materials most positively impact playground efficacy.

Overall, UT's research revealed three key implications of playground surfacing:

1. **Surfacing materials show significant impact on playability metrics,**
2. **Neighborhood income levels seemingly lack any connection to playability.**
3. **Playground Grass surfaces are linked with higher playability (Salvo, Jowers, et al., 2026, p. 17).**

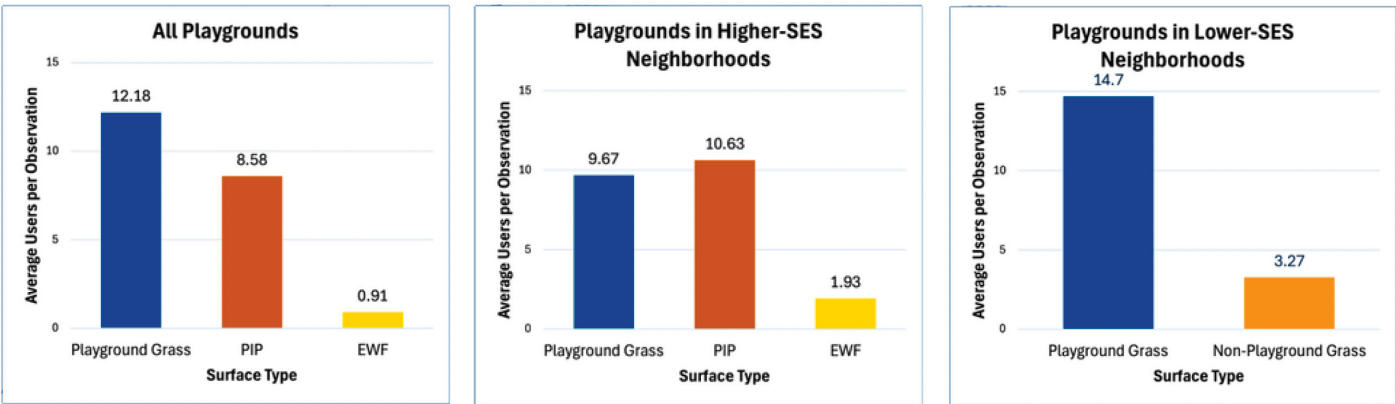
Across the observations, the differing surfacing materials displayed consistent indicators and scores, with EWF-surfaced playgrounds exhibiting low playability patterns, PIP-surfaced playgrounds demonstrating mixed to neutral results, and Playground Grass-surfaced playgrounds delivering high playability and engagement patterns (Salvo, Jowers, et al., 2026, pp. 3, 17). This is especially significant when considering #2, as Playground Grass outperformed EWF and PIP even more measurably in low-income neighborhoods, emphasizing further the importance of surfacing material choice for community playgrounds (Salvo, Jowers, et al., 2026, p. 3). The improvements a high-quality playground surface can provide for children's play and development can substantially reduce health- and social-equity gaps (Salvo, Jowers, et al., 2026, pp. 28-29).

Synthetic Turf's Impact on Children

Playground Grass not only excelled in overall **playability scores**, but also surpassed EWF and PIP in many other notable playground metrics. Between the three materials, Playground Grass surfaces exhibited the highest average number of users, number of kids engaged in active play, and number of social groups engaged in play (Salvo, Jowers, et al., 2026, pp. 18-20).

On average, Playground Grass saw about 12 users at a time, which was higher than both EWF and PIP. In low-income neighborhoods, this disparity was even more pronounced, with Playground Grass hosting an average of 15 users at a time compared to 3 with other surfaces (Salvo, Jowers, et al., 2026, pp. 18, 29).

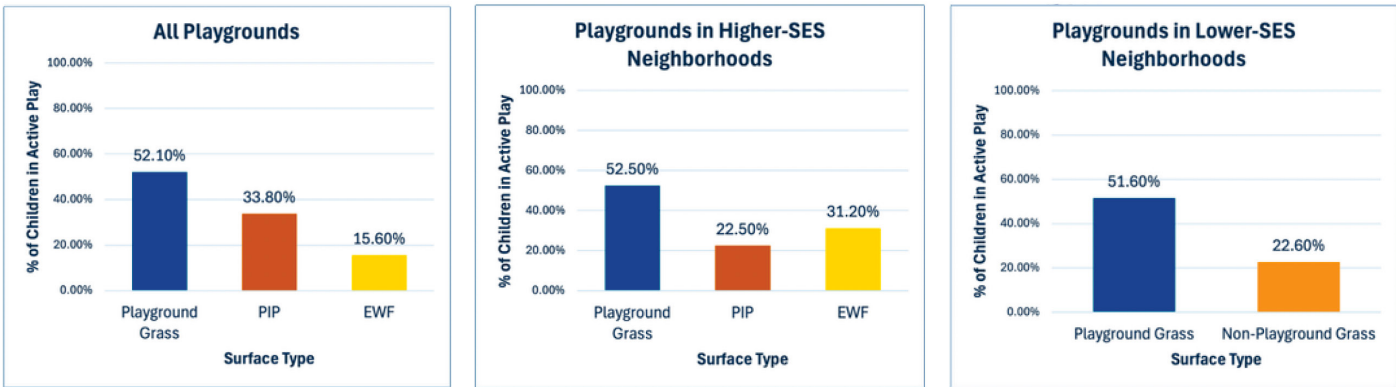
Observation by Surface Type



Note: Non-Playground Grass includes engineered wood fiber (EWf) and poured-in-place rubber (PIP).

The playgrounds with EWf and PIP also demonstrated far fewer children engaging in active play than on Playground Grass. Overall, Playground Grass consistently had approximately 52% of playground users engaging in active play. In high-income neighborhoods, this was compared to 34% and 16% for PIP and EWf respectively. Once again, low-income neighborhoods displayed an even more noticeable gap, with non-Playground Grass surfaces seeing only 23% of users engaging in active play on average (Salvo, Jowers, et al., 2026, pp. 19, 29).

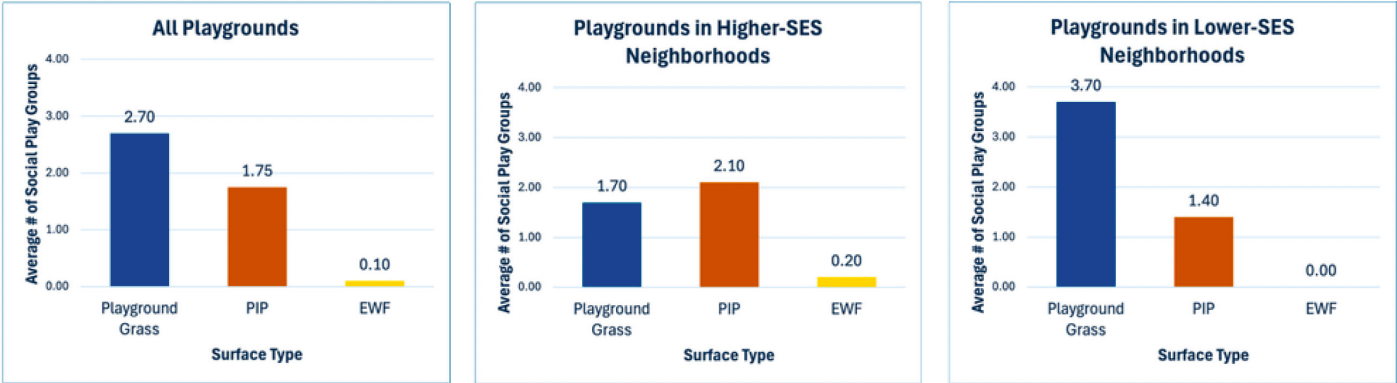
Percentage of Children Engaged in Active Play



Note: Non-Playground Grass includes engineered wood fiber (EWf) and poured-in-place rubber (PIP). “% of Children in Active Play” includes light, moderate, and vigorous physical activity; “non-active” reflects sedentary behavior.

Additionally, the Playground Grass surfaces seemed to encourage a much higher frequency of social play among playground users. Overall, Playground Grass averaged 2.7 groups engaging in active, social play. EWF and PIP combined for less than 2 groups per play space on average. In low-income neighborhoods, there was once more an increase in the performance gap between Playground Grass and other surfacing materials, with the former exhibiting more than five times as many groups as non-Playground Grass surfaces (Salvo, Jowers, et al., 2026, pp. 20, 29).

Average Number of Groups Engaging in Social Play



Note: Non-Playground Grass includes engineered wood fiber (EWF) and poured-in-place rubber (PIP). Social play groups reflect children engaging together in cooperative or social play in a prosocial manner.

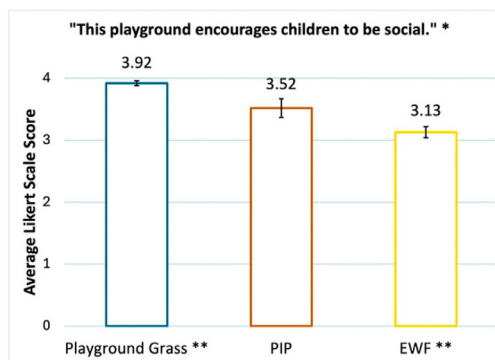


Synthetic Turf's Impact on Caregivers

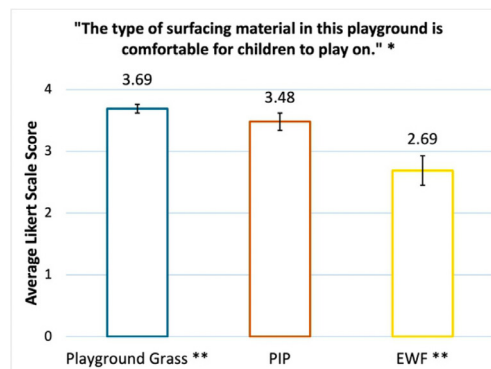
In addition to the sixty observations conducted, the research team also engaged in eighty-nine caregiver surveys across the six Austin playgrounds (Salvo, Jowers, et al., 2026, p. 10). Overall, the consensus feedback supported the data gathered from the observations and further expanded the picture of how surfacing impacts play, child development, and playground efficacy.

These surveys were largely aimed at garnering overall perceptions of both the comparison between synthetic turf, EWF, and PIP in playgrounds and specifically how Playground Grass performed in areas such as safety, comfort, playability, and inclusivity. The results of these scores and surveys revealed that parents and caregivers widely view playgrounds surfaced with Playground Grass as superior in three major areas: socialization, safety, and equitable playground design (Salvo, Jowers, et al., 2026, p. 21).

Analysis of the survey results showed that parents perceived Playground Grass-surfaced playgrounds as being more supportive of social play than those surfaced with other materials. This was largely connected to Playground Grass being seen as more comfortable and therefore more enjoyable for children and caregivers alike (Salvo, Jowers, et al., 2026, p. 21).

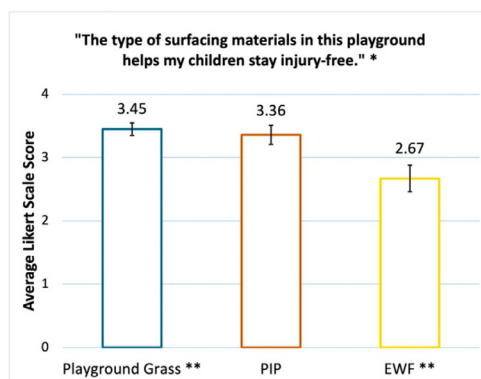


*The test demonstrates significant overall differences per ANOVA test ($F(2,31.71) = 35.66, p < 0.001$).
** Playground grass surfaces was significantly different than EWF and PIP.

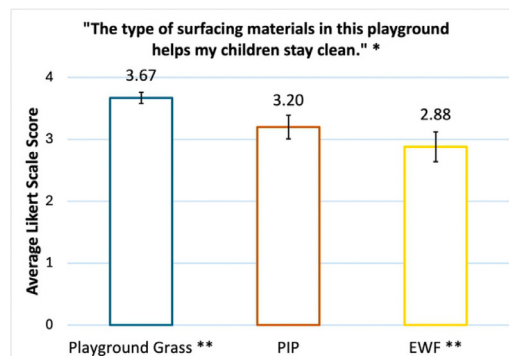


*The test demonstrates significant overall differences per ANOVA test ($F(2,31.03) = 8.24, p = 0.001$).
** Playground grass surfaces was significantly different than EWF.

These playgrounds were also viewed as being much safer than those surfaced with non-Playground Grass materials. Surveys pointed to the comparative cleanliness of the turf and how it helped reduce the risk of injuries (Salvo, Jowers, et al., 2026, p. 21).

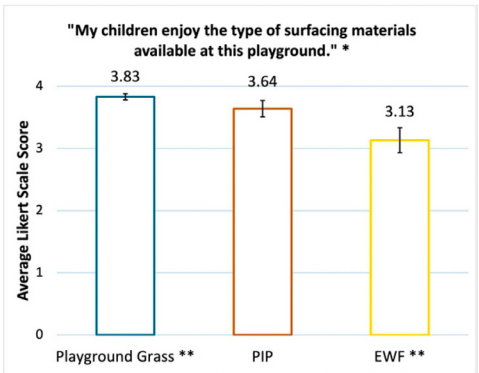


*The test demonstrates significant overall differences per ANOVA test ($F(2,84) = 6.68, p = 0.002$).
** Playground grass surfaces was significantly different than EWF.



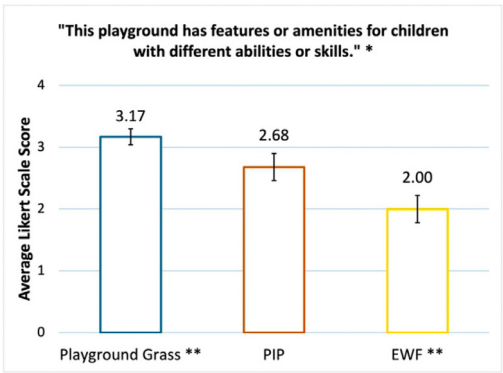
*The test demonstrates significant overall differences per ANOVA test ($F(2,83) = 6.89, p = 0.002$).
** Playground grass surfaces was significantly different than EWF.

Playground Grass also scored higher than other surfaces for supporting equitable playground design. Play spaces featuring the synthetic turf were viewed as being more well-maintained than EWF- or PIP-surfaced playgrounds. Parents and caregivers also pointed to Playground Grass being more inclusive due to having more features for different ability levels (Salvo, Jowers, et al., 2026, p. 21).



*The test demonstrates significant overall differences per ANOVA test ($F(2,29.46) = 6.17, p=0.006$).
** Playground grass surfaces was significantly different than EWF.

Caregivers also noted that Playground Grass presented far fewer issues with loose debris, provided a softer sensory experience for young children, and often led to kids requesting return visits (Salvo, Jowers, et al., 2026, p. 27). In general, parents' comments and the survey data align with UT's observational results, and point to the importance of community perceptions and values in overall playground efficacy.



*The test demonstrates significant overall differences per ANOVA test ($F(2,85) = 9.26, p<0.001$).
** Playground grass surfaces was significantly different than EWF.

Conclusion

While surfacing is just one aspect of overall playground design, it clearly plays a significant role in determining the efficacy of community play spaces. From the results of UT's research, it is evident that playground surfacing has a measurable impact on playability and as such should receive more consideration in the construction process for architects, municipalities, and other decision-makers. Between the most common types of surfacing materials, synthetic turf clearly presents a superior option in terms of safety, durability, functionality, and the overall health and social benefits a playground can provide to a community.

Among the synthetic turf industry, Playground Grass by ForeverLawn stands as the premier choice for better play surfacing. UT's research proves Playground Grass provides a more playable space for children by increasing community use and child engagement, supporting more active play, promoting social, cooperative, inclusive play, and creating more equitable playground environments in low-income neighborhoods (Salvo, Jowers, et al., 2026, pp. 28-29). By choosing Playground Grass for public playgrounds, decision-makers promote inclusivity and safety, enhance playability, close play-quality gaps, and bolster the overall engagement, health, and social goals of communities.



CITATION:

Salvo, D., Jowers, E., Morrison, B., Garza, C., & Le, S. (2026, February 27). A Comprehensive, Mixed-Methods Examination of the Impact of Playground Surfaces on Playability and Child and Community Wellbeing. Center for Research to Community Impact.<https://crci.education.utexas.edu/project/study-impact-of-playground-surfaces/>