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# Ensuring Playground Safety: The Q&A Book

With more than 200,000 kids injured on America's playgrounds every year, close attention to playground safety is a must for any recreation facility manager or park director. Carefully selecting age-appropriate playground elements and ensuring proper supervision and maintenance are crucial steps toward protecting children from harm. And with 80 percent of injuries caused by falls to the surface, the closest scrutiny should be given to playground safety surfaces.

## Surfacing options:

- Loose fill materials
- Poured-in-place (PIP) surfacing
- Prefabricated mats or tiles
- Artificial turf



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**Q: We're adding a playground and want to select playground safety surfacing that will last. What should we look for?**

**A:** There are several options to cushion your playground surface. Loose-fill surfaces like wood chips, pea gravel, sand, rubber mulch, and engineered wood fiber are commonly used and offer the lowest initial cost. But before you make your decision based on cost alone, you want to look at the longer-term costs of such surfaces. Once kids are on the playground, loose fill must be continually topped up and raked back into place to ensure proper protection, and it is difficult to keep clean.

The other option is a unitary surface, including poured-in-place surfacing and prefabricated surfaces made of mats or tiles. Poured-in-place surfaces offer advantages such as low maintenance and lower life-cycle costs, but be aware that high-traffic areas may show deterioration over time.

**Q: If we select a unitary surface, what should we look for?**

**A:** It is absolutely essential to ensure that the manufacturer provides evidence that their surface has been tested and shown compliant with the ASTM 1292-04 Standard. What does that mean?

The standard uses a test apparatus called a "headform" to measure the impact-attenuating properties of the surface. As part of the test, the headform is dropped from various heights, and two key measurements are taken. HIC, or head injury criteria, measures impact severity, and must be lower than 1000. G-max measures the maximum acceleration or shock produced by an impact and must be lower than 200.

But bear in mind that these are minimum requirements, and there are many reasons you might want to consider looking for a manufacturer that exceeds these requirements.



**Q: What factors can impact the performance of the surfacing once it's installed?**

**A:** In a lab test, a playground surface might show a specific level of performance, but that doesn't mean it will perform that way once it's installed at your playground. There are many factors that can influence the actual performance of your surfacing, including age, moisture, maintenance, exposure to temperature extremes such as freezing, exposure to ultraviolet light, contamination with other materials, compaction, loss of thickness, shrinkage, submersion in water and so on.



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This means a careful investigation of your supplier is warranted. You'll want to ask them how they can ensure that their surface will meet the standards over the long haul, and you'll want to be sure they address the specific issues associated with your site. You might also want to consider a more stringent specification than the ASTM 1292-04 standard.

## **Q: Why should we make our specifications more stringent than the requirements of the ASTM 1292-04 standard?**

**A:** Consider the HIC measurement. At the required level of 1000, the possibility of a minor head injury—one that does not lead to a loss of consciousness but that could include a nose fracture, broken teeth and superficial face injuries—is nearly 100 percent. OK, we all know that kids can get hurt, but consider this. At that 1000 level for HIC, the possibility of a moderate head injury exceeds 85 percent. That means that there's still a good likelihood of a skull fracture, brief loss of consciousness, a fracture of facial bones and deep wounds. In addition, the chance of a critical head injury, which could possibly lead to death, begins to depart from zero at the 1000 level.

This is disturbing, but it's only part of the story. HIC results across different test apparatuses and laboratories can vary. That means that a surface that would fail in one lab might pass at another.

And consider the likelihood that the samples submitted to a laboratory and the product installed on your site are identical, given all the variables that can impact the performance once the product is installed.

Once you take all of this information in, you can see why it might be wise to address these issues up front by specifying a lower HIC result than required by the ASTM 1292-04 standard.

## **About Heavenly Greens**

Heavenly Greens is Northern California's leading provider of artificial grass and synthetic turf systems for both residential and commercial artificial turf landscaping. Founded in 2001, our focus is providing only the highest quality synthetic turf products available to the market. Artificial grass applications include; homes, business, golf courses and putting greens, dog facilities and day cares, sports fields and more. To learn more about Heavenly Greens and artificial lawn, visit [HeavenlyGreens.com](http://HeavenlyGreens.com)



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