The Essential concepts Playground Owners, Operators, and Planners need to understand about Accessible Play Area Surfaces

The following information is intended as informal guidance based upon a document originally published by the US Access Board, 7 Things Every Playground Owner Should Know About the Accessibility of Their Playground Surfaces. Although this document is very thorough, it can be lengthy, technical, and possibly confusing if the reader does not have a firm background in accessibility compliance. The aim of this guidance is to make the information provided by the Access Board easier and faster to understand and process.

What do you, the Administrator, need to understand about Accessible Play Areas before you get started?

## Start with comprehensive planning and site selection

Realize that this is a very big undertaking, and do not underestimate the long-term ramifications of decision making during the planning process, as many play surfaces will be in place for the next 10-20 years.

Owning an accessible play surface is not a one-time cost. Maintenance will be required and will have a cost throughout the lifespan of the surface.

Planning for the Accessible Route should be integral and clearly defined to all initial plans for the play area.

Choose/prepare the site so that equipment placement will not have to deviate from original plans to accommodate site constraints. If play components are moved around during construction, the Accessible Route can be impacted.

## Follow the Accessibility Standards for Play Areas

Design a play area as inclusive as possible while satisfying the minimum access criteria.

Get familiar with the 2010 Standards, play areas will offer subtle differences to a normal Accessible Route.

The play area Accessible Route begins at the entry of the play area, connects to each accessible play component (points of entry and egress), and any clear space requirements adjacent to the accessible play components.

The Accessible Route surface must meet ASTM F 1951-99 requirements in order to be usable by a wheelchair user without having too much resistance from the surface itself.

Where the Accessible Route is located within a 6’ use zone around or underneath a play component, it must also be impact attenuating meeting ASTM F1292-99/04 Standards. Ground surfaces used for the accessible route are required to be inspected and maintained regularly and frequently to ensure continued compliance with ASTM F 1951-99.

Children play sporadically throughout a play area, navigating their own path on a whim. Designing the entire use zone to be used as an accessible route is recommended as a best practice to accommodate the free nature of children at play.

Normal Accessible Route requirements of the ADA apply to all public site arrival points that serve and connect to the play area, including parking lots, bus stops, and public sidewalks.

Within the play area, the accessible route must connect all accessible elements and features of the of the play area.

## Once located within the boundaries of the play area, the clear width of the ground level accessible routes becomes at least 60 inches, with the following two exceptions:

1. In play areas less than 1000 square feet, the clear width of accessible routes is be permitted to reduce to 44 inches minimum, if at least one turning space is provided where the restricted accessible route exceeds 30 feet in length.
2. The clear width of accessible routes shall be permitted to be 36 inches minimum for a distance of 60 inches at most only if multiple reduced-width segments are separated by segments that are at least 60 inches wide and 60 inches long.

## Accessible Route requirements at ground level in play areas:

* The vertical clearance is at least 80 inches high.
* The running slope is not steeper than 1:16 or 6.25%.
* The cross slope is limited to 1:48 or 2.08% at most.
* Openings in floor or ground surfaces should not allow passage of a sphere more than ½ inch diameter.
* Changes in level between ¼ inch high minimum and ½ inch high maximum should be beveled with a slope no steeper than 1:2.

Public playgrounds must also meet referenced standards set by the American Society for Testing Materials (ASTM) related to resiliency for falls (ASTM F1292-99/04) and accessibility (ASTM F1951-99) around accessible equipment.

Ground surfaces used for the accessible route are required to be inspected and maintained regularly and frequently to ensure continued compliance with ASTM F 1951-99.

## Checklist:

* Is the surface for the accessible route, clear ground space and turning space compliant with ASTM F1951-99 Standard, that is, is the surface material readily usable by a person in a wheelchair?
* Does the playground surface comply with ASTM F1292-99/04 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment when ground surfaces are part of the accessible route and also located in the use zones?
* Is the accessible route part of the main circulation path and is it continuous to each accessible play component?
* Is the running slope for the ground level accessible route less than 1:16 or 6.25%?
* Is the maximum cross slope for the ground level accessible route less than 1:48 or 2.08%?
* Is there a minimum clear width of 60 inches for the ground level accessible route (some exceptions apply)?
* Are openings in the surface for the ground level accessible route no greater than .50 inch?
* Are changes in level along the ground level accessible route less than .50 inch beveled?
* Is the vertical clearance at least of 80 inches high for the ground level accessible route, including tree branches and the structures of play equipment (ex: swing set)?
* Does the clear ground space at egress of accessible equipment have a cross slope less than 1:48 or 2.08% and measure at least 30 x 48 inches of clear space?
* Are the ground surfaces inspected and maintained regularly and frequently to ensure continued compliance with ASTM F1951-99?

## Review the research findings about accessibility issues for play surfaces.

Findings from a National Center on Accessibility longitudinal study on the accessibility of playground surfaces:

1. No single type of surface material/system was found to be the most accessible surface or better than others when comparing its ability to meet the accessibility standards with issues related to installation and maintenance.
2. Within 12 months of installation, playground sites in the sample with the loose fill Engineered Wood Fiber were found to have the greatest number of deficiencies, such as excessive running slope, cross slope, and change in level, affecting the accessible route to play components.
3. Within 12 months of installation, playground sites in the sample with loose fill Engineered Wood Fiber were found to have the highest values for firmness and stability, indicating greater work force needed to move across the surface, while playground sites with the unitary surfaces TIL and PIP were found to have the lowest values for firmness and stability– indicating less work force necessary to move across the surface.
4. Deficiencies for PIP, TIL and HYB began to emerge 24- 36 months after installation, which include excessive running slope, cross slope, change in level, and openings.
5. It was observed that in some cases the surface material installation did not parallel either the manufacturer’s installation instructions or the procedural instructions on the laboratory test sample for ASTM F1951-99 (ease of wheelchair rolling resistance).
6. A playground surface with fewer accessibility deficiencies and a lower measurement for firmness and stability did not necessarily meet the safety standards for impact attenuation.
7. Surface cost for material cannot serve as an indicator or predictor.

\*For a more in-depth comparison between surface materials, please reference the original document published by the Access Board which this informal guidance was based upon, pages 8 and 9\*

## Assess during the planning, installation and maintenance phases.

Basic Tools Required: 2ft. digital level, tape measure

Advanced Testing Equipment: Rotational Penetrometer, TRIAX

Measurements should be taken immediately following installation to ensure both the accessibility and fall attenuating quality of the surface, as well as throughout the life of the surface product.

Look for and measure gaps, changes in level, running and cross slopes along the accessible route, especially where surface materials transition from one to another.

## Identify the complete Accessible Route:

* Entry area, clear ground space at transfer systems of elevated play areas, clear ground space at accessible ground-level play equipment, clear ground at exit areas of play equipment, the segmented routes that connect required play components along a continuous route.

Ensure the Accessible Route is wide enough, applying applicable exceptions, normally 60” minimum within a play area.

Ensure that ASTM F1951-99 requirements are met- a Rotational Pentrometer can help determine how difficult it is to move a wheelchair over a surface and verify technical compliance.

Ensure that ASTM F1292-99/04 requirements are met- a TRIMAX can help determine impact attenuation. Makes sure this is measured in all likely weather and temperature conditions.

## Compare surface options.

Consider both upfront and ongoing costs for the different materials to choose from, as well as if the materials suit your needs.

Consider your operational budget model- Do you have more upfront funding and less on-going funding? Or do you have a small operating budget that is fairly stable from year to year? This could impact your decision making and compliance obligations.

Creating an open dialogue with the surface material manufacturer is strongly encouraged to fully understand the surface performance over the life span of a product.

## Important points to obtain from a surface material manufacturer:

* Specific written instructions for installation.
* Written description of the base, sub-base and required drainage system.
* Results of ASTM F1951-99 laboratory tests, including the values for the baseline, straight propulsion and turning runs, preparation consistent with installation instructions.
* Results of ASTM F1292-99/04, with written confirmation of the critical fall height for the surface material. These test results should include the depth of the surface material for drop heights. The critical fall height should be slightly higher than the determined fall height of the highest equipment on the playground.
* Written description of the maintenance and frequency necessary to maintain the accessible route and clear ground spaces.
* The field test procedures to assess the surface for impact attenuation and accessibility upon initial installation and periodically through the life of the product. This should include selection of an independent testing agent and optimum values for ASTM F1292-99/04 and ASTM F1951-99 when field tested.
* A minimum 5-year warranty that stipulates compliance with ASTM F1292-99/04 and ASTM F1951-99, field testing strategy, limitations, exclusions or preconditions, remedies available to the playground owner, and process for making a claim.

The playground owner/administrator should also ask the manufacturer for a list of customers in their area that have installed the surface material in the last 5-10 years. The planning team should talk to those customers and visit older installations to find out what issues may have come up with installation and maintenance. If the surface system is to be installed by a contractor, those customer sites should also be visited to assess the contractor’s work. It is important to visit older installations to see how the product has aged and what maintenance issues may have arisen over time.

Understand that Engineered Wood Fiber (EWF) is a specific product with a specific installation procedure which effectively “knits” the material together to provide a compliance play surface. EWF is not interchangeable with wood chips or mulch.

## Recognize that proper installation of play surface systems is key.

An accessible surface system can be rendered useless if it is not properly installed. Special care should be taken to understand the installation process for the chosen type of play surface and that the installers are qualified, whether in-house or by contractors.

Understand that the steep learning curve associated with having in-house installation of some play surfaces can quickly offset the cost-saving benefit of performing installing in-house.

Critical details must be communicated between the design and construction phases, regardless of whether the installation is by contractor or park/facility personnel. Site plans and construction drawings should provide details such as maximum running and cross slopes, beveled edges, transitions, adjoining seams and affixing the surface material to the play area border. Preparation of the base and sub-surfaces should be explained. Lack of attention to drainage or omission of weed barriers between layers can lead to sub-surfaces being washed away, base layers infiltrating top layers, and excessive moisture contributing to the growth of mold and vegetation. All of these issues can affect the usability, safety and accessibility of the playground surface. Accessibility deficiencies arising out of installation were associated with all of the different types of surfaces identified in the NCA study.

\*For more in-depth analysis on different play surface installation deficiencies, please reference page 16 of the original document published by the Access Board which this informal guidance is based upon.\*

## Commit to ongoing maintenance of accessible playground surfaces as a responsibility of ownership.

Some surface materials may only require seasonal maintenance, while others may require weekly or daily maintenance. The frequency of maintenance is dependent on the surface material and number of users.

Maintenance crews should receive training both on the accessibility standards and the care specific to the surface material.

* Understand that regular maintenance is key to longevity of compliance and adequate training for maintenance personnel can dramatically impact if these surfaces are maintained. Maintenance personnel should be training on the requirements for the Accessible Route, regular maintenance recommended by the surface material manufacturer, the specific Accessible Route at each play area within their responsibilities, and the common pitfalls of different surfaces. They may not need a TRIMAX or Rotational Pentrometer, however they should be supplied with a measuring tape and 2ft. digital level to identify barriers to accessibility on a regular basis.

\*For specific insight on maintenance issues with particular surfaces, please consult page 18 of the original document published by the Access Board which this informal guidance is based upon.\*